The Commonwealth of Massachusetts

University of Massachusetts Amherst

CONTRACT FOR

Bowditch Hall, Roof Replacement

SPECIAL ATTENTION TO BIDDERS
⇒ Bids must be made on the enclosed form.
⇒ Fill in all applicable blank spaces on all pages of this form.
⇒ Return complete form intact.
Bid Express

All construction projects at the University of Massachusetts Amherst are available for bidding on the Bid Express website at: bidexpress.com. Submitting bids via the Bid Express website will become mandatory for any bid advertised on or after July 1, 2015.

Electronic bids may be submitted at the bidexpress.com website. All electronic bidders must first register on bidexpress.com and create an Info Tech Digital ID. Registration and Digital ID creation are free. It can take up to five business days to process your Digital ID and it is highly recommended that a Digital ID be enabled at least 48 hours in advance of submitting an electronic bid. Please plan accordingly. A fee of $25 will be incurred for bidding electronically on a pay-per solicitation basis; alternatively, you may subscribe for $50 per month to have access to all solicitations and email notifications.

Electronic Bid Bonds: To utilize the Electronic Bid Bond option, please contact either Surety 2000 at 800-660-3263 or help@surety2000.com or InSure Vision Technologies at 818-783-3460 or info@insurevision.com

For additional guidance, please contact the Bid Express team at toll free (888) 352-2439 (select option 1) or at support@bidexpress.com

Traditional Paper Bid Bonds or Certified Check: If you choose not to utilize the Electronic Bond Option you may upload a scanned copy of your Bond or Certified Check when submitting your bid, the scanned copies must be followed up with a hard copy delivered to the Procurement Office, Mass Venture Center, 100 Venture Way, Room 334, Hadley, MA, 01034 within 72 hours after the bid opening. Failure to submit a hard copy of your bid bond or certified check within the specified time period will result in the rejection of your bid.

Note that failure to submit a hard copy of your bid bond or certified check more than two times in a twelve month period will result in a twelve month ban on submitting bids to the University.

During the introductory period only one copy of your bid should be submitted either through Bid Express or a hard copy delivered to Procurement; in the event that a company submits a bid both on Bid Express and a hard copy to Procurement then the Bid Express bid will be considered the official bid and the hard copy will not be considered.
Attention Contractors
(Effective July 1, 2013)

UMASS Amherst is a Tobacco-Free campus

Starting July 1, 2013, the University of Massachusetts will prohibit tobacco use everywhere on campus, inside buildings and throughout the grounds. The policy applies to everyone and anyone on campus, inside buildings and throughout the grounds. This policy applies to everyone and anyone, including students, staff, faculty, contractors and visitors. For the purpose of this policy, “tobacco” refers to any and all tobacco products, whether inhaled or ingested, as well as electronic cigarettes.

1. The use of tobacco will be prohibited in all buildings and vehicles owned or leased by UMASS Amherst, regardless of location.

2. The use of tobacco will also be prohibited on all University grounds and in any outdoor area controlled by the University. This includes all University land, parking lots and parking ramps, athletic fields, tennis courts and recreational areas.

3. The use of tobacco will be prohibited inside any vehicle located on University grounds.

4. When any person enters the grounds of the University, any smoking material shall be extinguished and disposed of in an appropriate receptacle at the perimeter of the grounds of the University.
Attention Contractors  
(Effective July 1st, 2012)

The University of Massachusetts Amherst will be posting all addenda to the procurement website:

http://www.umass.edu/procurement/constructionprojects.htm

Effective July 1st 2012 the university will not be sending out hard copies of the addenda. Notification will be sent via e-mail to all plan holders of record once an addendum has been posted to the website.

***It is the sole responsibility of the Bidder to ascertain the existence of any addenda issued by the Awarding Authority, whether or not the same are mailed to, or received by, Bidder. Copies of addenda will be made available for inspection at the locations listed in the Advertisement where the Contract Documents are on file.***
ATTENTION CONTRACTORS & SUBCONTRACTORS  
(EFFECTIVE AUGUST 1, 2006)

ALL CONTRACTORS AND SUBCONTRACTORS PLEASE NOTE THE NEW UNIVERSITY OF MASSACHUSETTS AMHERST CONTRACT PROVISIONS REQUIRING CONFIRMATION OF HIRING PRACTICES IN ACCORDANCE WITH FEDERAL DEPARTMENT OF Homeland Security REQUIREMENTS. THIS INCLUDES BUT IS NOT LIMITED TO THE FAITHFUL COMPLETION OF THE FORM I-9 PROCESS FOR ALL PERSONS TO BE EMPLOYED IN THE WORK OF THE PROJECT WHO ARE REQUIRED TO BE LISTED ON THE CERTIFIED PAYROLL REPORTS. THE CONTRACTOR AND ALL SUBCONTRACTORS MUST: 1) EXECUTE ALONG WITH ITS CONTRACT/ SUBCONTRACT AND CERTIFICATE OF COMPLIANCE WITH EMPLOYMENT ELIGIBILITY VERIFICATION REQUIREMENTS, AND 2) MUST CERTIFY IN EACH CERTIFIED PAYROLL REPORT SUBMITTED TO UNIVERSITY OF MASSACHUSETTS AMHERST, THAT THE FORM I-9 PROCESS WAS FAITHFULLY COMPLETED FOR ALL EMPLOYEES LISTED ON EACH CERTIFIED PAYROLL REPORT. SEE NOTICE TO BIDDERS AND GENERAL CONDITIONS
ATTENTION CONTRACTORS & SUB-CONTRACTORS
(EFFECTIVE JULY 1, 2006)

M.G.L. c. 30, § 39S (a)(2) REQUIRES 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 ALL CONTRACTORS, SUBCONTRACTORS AND OTHERS WORKING AT THE SITE SHALL FURNISH DOCUMENTATION OF SUCCESSFUL COMPLETION OF SAID COURSE WITH THE FIRST CERTIFIED PAYROLL REPORT FOR EACH EMPLOYEE.
ATTENTION FILED SUB-BIDDERS
(EFFECTIVE JANUARY 1, 2006)

A VALID SUB-BIDDER CERTIFICATE
OF ELIGIBILITY ISSUED BY THE DIVISION
OF CAPITAL ASSET MANAGEMENT (DCAM)
IN THE CATEGORY OF WORK OF YOUR
SUB-BID AND A COMPLETED SUB-BIDDER
UPDATE STATEMENT MUST ACCOMPANY
EACH AND EVERY FILED SUB-BID SUBMITTED.

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UNIVERSITY OF MASSACHUSETTS AMHERST
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Specifications and/or Contract (UMA Form 5)
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Daily Time and Material Report for Change Orders
Request and Agreement for a Change in the Plans,
Specifications and/or Contract (UMA Form 5)
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BID PACKAGE

PART I

INSTRUCTIONS TO BIDDERS

Instructions to Bidders

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Attachment B: Forms Used During Bidding

Sample Certificate of Eligibility – Prime Bidder

Sample Sub-bidder Certificate of Eligibility

Update Statement – Prime Bidder

Sub-bidder Update Statement

Form for General Bid

Form for Sub-Bid
UNIVERSITY OF MASSACHUSETTS AMHERST

INSTRUCTIONS TO BIDDERS

Awarding Authority:
University of Massachusetts Amherst
Procurement Office, Mass Venture Center
100 Venture Way, Room 334
Hadley, MA 01035
Telephone: 413/545-0361

UMA No. UMA17-16
Project No. 1010301
Title: Bowditch Hall, Roof Replacement

Category of Work:
Roofing

Project Description and Scope:
Roofing
Note: Completion date based upon executed date is: August 9, 2017

Pre-Bid Meeting Information (if any):
April 3, 2017 at 9:30 a.m. at UMASS Physical Plant Building, 3rd floor, Conference Room B,
360 Campus Center Way, Amherst, MA 01003

Deadline for filing filed Sub-bids is 12:00 noon on N/A, 20__.
Deadline for filing General bids is 2:00 p.m. on April 12, 2017.
The list of filed subtrades for this project is found at Page 10 of these Instructions to Bidders.

The minimum wage rate requirements for this Contract are located in Attachment A to these Instructions to Bidders.

Pursuant to M.G.L. c. 30, §39S(a) (2) all employees to be employed on the worksite must have successfully completed a course in construction safety and health approved by OSHA and of at least 10 hours in duration.

The Contractor must provide written verification as detailed in the General Conditions at Article X, of compliance with Federal Department of Homeland Security Requirements, including but not limited to the Employment Eligibility Verification (Form I-9) Process.

Bid forms for this Contract are located in Attachment B to these Instructions to Bidders.

The combined participation goal for Minority/Women Business Enterprise for this Contract is 5.0%.

The MBE/WBE participation goal must include a reasonable representation of both MBE and WBE firms that meet or exceed the combined goal. MBE/WBE participation plans that consist solely of either a MBE or WBE representing 100% of the overall combined goals will not be considered reasonable or responsive. Firms submitting MBE/WBE participation plans which do not provide reasonable participation by both MBE/WBE firms shall be provided an opportunity to revise and resubmit their plans within the time frame set by the awarding authority; however, no price adjustments shall be permitted as a result of the revised plan. Firms failing to submit an MBE/WBE participation plan deemed reasonable, and accepted by the awarding authority, shall not be awarded the contract.

The time for completion of the Work is specified in Article 2 of the Owner - Contractor Agreement. Liquidated damages for failure to complete work on time are as stated in Article 8 of the Owner - Contractor Agreement.

Bidding Documents may be examined at the University of Massachusetts Amherst, Procurement Office, Mass Venture Center, 100 Venture Way, Room 334, Hadley, MA 01035, and copies may be obtained by depositing a company, treasurer's, cashier's, or bank check, in the sum of $150.00 per set payable to the University of Massachusetts. A refund will be made to those returning the documents in satisfactory condition within 10 working days after the general bid opening. Otherwise this deposit shall become the property of the University.

CLOSING: Should the University of Massachusetts Amherst close the campus for any reason on the scheduled day of the bid opening, the bid opening date will be extended to the next normal business day for the University at the same time/same place. It is the bidder’s responsibility to verify by going to the University closing website at: www.umass.edu/closing or by public announcements.
The filed sub-trades for this project are as follows:

<table>
<thead>
<tr>
<th>Section #</th>
<th>Filed Sub-trade</th>
<th>All Bid Deposits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>5% of Bid Amount</td>
</tr>
</tbody>
</table>

(Sub-bid forms pages 60-64)

N/A

As used herein, capitalized terms shall have the meaning assigned to them in the General Conditions of the Contract and the Owner - Contractor Agreement unless the context clearly indicates otherwise.
SECTION I - BIDDER’S REPRESENTATION

1.1 Each general bidder or sub-bidder (hereinafter sometimes referred to as "Bidder") by making a bid or sub-bid (hereinafter sometimes referred to as "Bid") represents and warrants that Bidder has visited the site and examined the Contract Documents, that Bidder is familiar with the local conditions under which the Work is to be performed, that Bidder has correlated personal observations with the requirements of the Contract Documents, and that where the Contract Documents require, in any part of the Work, a given result to be produced, the Contract Documents are adequate and that Bidder will produce the required result within the Bid price and that the Bid is made in accordance therewith.

1.2 Failure to so examine the Contract Documents and the Site will not relieve any Bidder from any obligation under the Bid as submitted. Neither the University of Massachusetts nor the Designer will be responsible for errors, omissions and/or charges for extra work arising from Bidder's failure to familiarize itself with the Contract Documents or existing conditions.

SECTION 2 -- GENERAL BIDDERS - CERTIFICATE OF ELIGIBILITY AND UPDATE STATEMENT

2.1 Every general Bidder must submit the following with its general Bid:
   --A current Certificate of Eligibility issued by the Division of Capital Asset Management and Maintenance ("DCAM"), DCAM Form CQ 7, showing that the Bidder has been approved to bid on projects of the category of work required and that the Bidder has a single project limit in an amount no lower than the amount of its Bid including all "add" alternates.
   --A fully completed current Contractor Update Statement, DCAM Form CQ3.

2.2 It is the Bidder's responsibility to obtain the necessary forms from DCAM and to submit its Application for Certificate of Eligibility so as to allow sufficient time for DCAM's evaluation of the application and issuance of a Certificate of Eligibility prior to the deadline for bidding.

2.3 The Contractor Update Statement is not a public record as defined in M.G.L. c. 4, § 7 and will not be open to public inspection.
SECTION 3 – FILED SUB-BIDDERS - CERTIFICATE OF ELIGIBILITY AND UPDATE STATEMENT

3.1 Every Filed Sub-Bidder must submit the following with each filed sub-bid:
--A current Certificate of Eligibility issued by the Division of Capital Asset Management and Maintenance ("DCAM") for that sub-bid trade, showing that the Sub-Bidder has been approved to bid on projects of the category of work required.
--A fully completed current Sub-Bidder Update Statement.

3.2 It is the Sub-Bidder’s responsibility to obtain the necessary forms from DCAM and to submit its Application for Sub-bidder Certificate of Eligibility so as to allow sufficient time for DCAM’s evaluation of the application and issuance of a Sub-Bidder Certificate of Eligibility prior to the deadline for bidding.

3.3 The Sub-Bidder Update Statement is not a public record as defined in M.G.L. c. 4, §7 and will not be open to public inspection.

SECTION 4 -- REQUESTS FOR INTERPRETATION

4.1 Any questions by prospective Bidders concerning interpretation of the Contract Documents must be submitted in writing to the Awarding Authority and should be in its possession at least five (5) calendar days, excluding weekend and holidays, unless otherwise specified, before the date set for the receipt of general Bids, or, if a question pertains to Item 2 filed sub-Bid work, at least five (5) calendar days, excluding weekend and holidays, unless otherwise specified, before the date set for the receipt of filed sub-Bids. The Awarding Authority will post any addenda or written interpretations that it deems necessary on the Procurement website: http://www.umass.edu/procurement/constructionprojects.htm. Bidders may not rely upon oral communications or interpretations from the Awarding Authority or the Designer and the Awarding Authority shall not be bound by them.

4.2 It is the sole responsibility of the Bidder to ascertain the existence of any addenda issued by the Awarding Authority, as posted on the website. Copies of addenda will be made available for inspection at the locations listed in the Advertisement where the Contract Documents are on file.

4.3 Wherever in the Contract Documents reference is made to Massachusetts General Laws, it shall be construed to include all amendments thereto effective as of the date of the issuance of the invitation to bid on the proposed work.
SECTION 5 -- PREPARATION OF BIDS; ALTERNATES

5.1 General Bids shall be submitted on the Form for General Bid included in Attachment B to these Instructions to Bidders. Filed sub-Bids shall be submitted on the Form for Sub-Bid included in Attachment B to these Instructions to Bidders.

5.2 All entries on the Bid form shall be typewritten or in ink.

5.3 Where so indicated on the Bid form, sums shall be expressed in both words and numerals. Where there is a discrepancy between the Bid sum expressed in words and the Bid sum expressed in figures, the Bid sum expressed in words shall control unless the intention of the Bidder clearly is otherwise as determined by the Awarding Authority in its sole discretion.

5.4 Each general Bidder shall acknowledge all required alternates in Section C on the Form for General Bid by entering the dollar amount of addition or subtraction necessitated by the alternate. General Bidders shall enter on the Form for General Bid a single amount for each alternate that shall consist of the sub-Bidders' amounts and the amount for work performed by the general Bidder.

5.5 If an alternate includes work within the Bidder's scope of work and does not involve a change in the cost of the Bid, the Bidder shall so indicate by writing "No Change" or "N/C" or "0" in the space provided for that alternate. Sub-Bidders shall enter on the Form for Sub-Bid the amount of addition or subtraction necessitated only for those alternates expressly identified in the Bid Documents as part of the sub-Bidder's category of work. If the alternate is not identified in the Bid Documents as affecting the sub-Bidder's category of work then the sub-Bidder shall so indicate by writing "N/A" and only "N/A" or leaving the alternate blank.

5.6 The lowest Bidder will be determined on the basis of the sum of the base Bid and the accepted alternates.

5.7 If the space for indicating a requirement for payment and performance bonds for filed subcontractors is left blank by the general Bidder on the Form for General Bid, the Awarding Authority shall interpret this as a "No."

5.8 Costs for subcontractors' bond premiums shall be paid for by the general Contractor in accordance with M.G.L. c. 149, § 44F unless the project is a project in which contractor and subcontractor prequalification are required pursuant to M.G.L. 149, §§ 44D1/2 or 44D3/4.
5.9 If the general Bidders are instructed to carry an amount for a given sub-trade listed under
Item 2, general Bidders shall list the sub-trade and the amount provided by the Awarding
Authority. The line under "bonds required" on the Form for General Bid should be left blank or
marked "N/A" in order for subsection 5.10 to apply.

5.10 Upon solicitation of a subcontractor to perform the work required with respect to a sub-
trade referenced in subsection 5.9, the general Bidder’s Contract Price shall be adjusted by the
following: a) the difference between the subcontract amount and the amount carried in the
general Bid; b) the total cost of the subcontractor’s bonds, if the general Bidder requires such
bonds after the solicitation is completed and if the general Bidder complied with 5.9 above; c)
the documented increased costs for the general Bidder’s bonds, if any, attributable to the
incremental difference between the amount carried for the given sub-trade and the actual
subcontract amount.

5.11 Overhead and profit for supervision of the sub-trade mentioned in subsections 5.9 and
5.10 above shall be included by all general Bidders in Item 1 of the subdivision of the Contract
Price. No additional overhead or profit will be paid on the incremental difference between the
amount carried for the sub-trade and the subcontract amount as stated in M.G.L. c. 149, §
44F(4)(a)(2).

5.12 Sub-Bidders should not list Paragraph E sub-subcontractors unless requested to do so by
the Awarding Authority.

5.13 Each general Bid and each Bid of a filed subcontractor must be accompanied by a bid
deposit in the form of a bid bond; a check certified by, or a treasurer's or cashier's check issued
by, a responsible bank or trust company, payable to the University of Massachusetts Amherst.
Any bid bond shall be (a) in a form satisfactory to the Awarding Authority, (b) with a surety
company qualified to do business in the Commonwealth and (c) conditioned upon the faithful
performance by the principal of the agreements contained in the Bid.

5.14 The amount of such bid deposit shall be 5% five per cent of the value of the Bid including
alternates.
SECTION 6 - SUBMISSION OF BIDS

6.1 Each sub-Bid, including the bid deposit, Sub-Bidder Certificate of Eligibility and properly completed Sub-Bidder Update Statement shall be enclosed in a sealed envelope with the following plainly marked on the outside:

Filed Sub-Bid for:

UMA No.________________________
Project No._______________________
Title:__________________________
Sub-Bid Section No._______________
Trade:__________________________
Sub-Bidders name, business address, and telephone number:
__________________________________________________________________________

6.2 Each general Bid, including the bid deposit, DCAM Certificate of Eligibility (CQ7), and properly completed Update Statement (CQ3), shall be enclosed in a sealed envelope with the following plainly marked on the outside:

General Bid for:
UMA No.________________________
Project No._______________________
Title:__________________________
General Bidders name, business address, and telephone number.
__________________________________________________________________________

6.3 All Bids must be received by the Procurement Department at the address specified on page 8 of these Instructions to Bidders no later than the applicable date and time specified on page 8 of these Instructions to Bidders. Any Bid not received by the applicable deadline will not be accepted.

6.4 Bidding results will not be given out over the telephone prior to 1:00 PM of the day following the Bid opening.
SECTION 7 - WITHDRAWAL OF BIDS; REJECTION OF BIDS

7.1 Any Bid may be withdrawn prior to the specified deadline for the receipt of Bids provided that the withdrawal shall be made by a written request signed by a person having the authority to bind the Bidder. The written request must be hand delivered or otherwise delivered to the University of Massachusetts Amherst, Attn: Director of Procurement, Procurement Office, Mass Venture Center, 100 Venture Way, Room 334, Hadley, MA 01035 and must be received on or before the date and time appointed as the deadline for the receipt of Bids.

7.2 A Bidder may withdraw its Bid without penalty at any time up to the time of Award as defined below in subsection 9.1 only upon demonstrating to the satisfaction of the Awarding Authority that a death or disability has occurred or a bona fide clerical or mechanical error of a substantial nature was made during the preparation of the bid. Failure to demonstrate conclusively that a bona fide clerical or mechanical error of a substantial nature was made may result in forfeiture of the Bid deposit.

7.3 The Awarding Authority reserves the right to waive any informality in or to reject any and all Bids if it is in the public interest to do so. Without limiting the foregoing, the Awarding Authority reserves the right to reject unit prices which it deems unduly high or unduly low as unbalanced.

SECTION 8 - MBE AND WBE PARTICIPATION

8.1 The apparent low Bidder’s compliance with the requirements of this Section 8 is a prerequisite for receiving the Award of the Contract.

8.2 The MBE and WBE participation goals for this Contract are as set forth on the first page of these Instructions to Bidders. The Awarding Authority reserves the right to reduce or waive the MBE or WBE participation goals established for this Contract upon written request made by a general Bidder within the time frame set forth in Section 8.3. Such written request must demonstrate to the satisfaction of the Awarding Authority that it is not feasible for a non-MBE or non-WBE general Bidder to meet the goals established for this Contract based upon any or all of the following: (i) actual M/WBE availability, (ii) the geographic location of the project to the extent related to M/WBE availability, (iii) the scope of the work, (iv) the percentage of work available for subcontracting to M/WBEs and/or (v) other relevant factors, including a documented inability by the prospective Bidder to obtain commitments from M/WBE subcontractors sufficient to meet the M/WBE goals after having made a diligent, good faith effort to do so. All of the foregoing documentation shall accompany the Bidder’s request for a reduction or waiver of the M/WBE participation goals. Such documentation shall include, at a minimum, the following:
-- A list of all items of work under the Contract that the Bidder made available for subcontracting to M/WBEs. The Bidder shall identify all items of work, other than work to be performed by filed sub-Bidders, that the Bidder did not make so available and shall state the reasons for not making such work available for subcontracting to M/WBEs. The Bidder shall also demonstrate that, where commercially reasonable, subcontracts were divided into units capable of being performed by M/WBEs.

-- Evidence that the Bidder sent written notices soliciting Bids or proposals to perform the items of work made available by the Bidder for subcontracting to M/WBEs to all M/WBEs qualified to perform such work. The Bidder shall identify (i) each M/WBE solicited, and (ii) each M/WBE listed in the SOMWBA directory under the applicable trade category that was not solicited and reasons therefor. The Bidder shall also state the dates that notices were mailed and provide a copy of the written notice(s) sent.

-- Evidence that the Bidder made reasonable efforts to follow up the written notices sent to M/WBEs with telephone calls or personal visits in order to determine with certainty whether the M/WBEs were interested in performing the work. Phone logs or other documentation must be submitted.

-- A statement of the response received from each M/WBE solicited, including the reason for rejecting any M/WBE who submitted a bid or proposal.

-- Evidence of efforts made to assist M/WBEs that needed assistance in obtaining bonding or insurance, or lines of credit with suppliers if the inability of M/WBEs to obtain bonding, insurance, or lines of credit is the reason given for the Bidder's inability to meet the M/WBE goals.

The Bidder may also submit any other information supporting its request for a waiver or reduction in the M/WBE participation goals, including without limitation evidence that the Bidder placed advertisements in appropriate media and trade association publications announcing the Bidder’s interest in obtaining bids or proposals from M/WBEs, and/or sent written notification to M/WBE economic development assistance agencies, trade groups and other organizations notifying them of the Contract and the work to be subcontracted by the Bidder to M/WBEs. The Bidder shall also submit any other information reasonably requested by the Awarding Authority to show that the Bidder has taken all actions that could reasonably be expected to achieve the M/WBE participation goals.

8.3 If filed sub-Bids are solicited for this Contract, requests from prospective general Bidders to reduce or waive the M/WBE participation goals for this Contract must be received by the Awarding Authority no later than four (4) working days after the list of filed sub-Bidders is mailed by the Awarding Authority to persons who have taken out plans for the Contract. If
there are no filed sub-Bids solicited for this Contract, requests to reduce or waive the W/MBE participation goals for this Contract must be received by the Awarding Authority no later than fourteen (14) calendar days before the date set for the receipt of general Bids. **THE AWARDING AUTHORITY WILL NOT CONSIDER ANY REQUEST TO REDUCE OR WAIVE THE M/WBE PARTICIPATION GOALS FOR THIS CONTRACT THAT IS RECEIVED AFTER THESE DEADLINES.** Any reduction or waiver of the M/WBE participation goals for this Contract will be made by written addendum mailed to all persons who have taken out plans for the project.

8.4 No later than five (5) working days after the opening of general Bids, the apparent low Bidder shall submit the following documents to the Awarding Authority's Compliance Office: (i) a completed Schedule for Participation by Minority/Women Business Enterprises ("Schedule for Participation") in the form provided by the Awarding Authority showing M/ WBE participation in amounts equal to or exceeding the M/WBE participation goals for this Contract, (ii) a completed Letter of Intent in the form provided by the Awarding Authority for each M/WBE listed in the Schedule for Participation, and (iii) a current SOMWBA certification letter for each M/WBE listed in the Schedule of M/WBE Participation showing that the M/WBE is certified in the area of work for which it is listed on the Letter of Intent.

8.5 Each Letter of Intent shall identify and describe the work to be performed by the named M/WBE (the “M/WBE Work”) with enough specificity to permit the Awarding Authority to identify the particular items of contract work that the M/WBE will perform for M/WBE participation credit. The Awarding Authority reserves the right to reject any Letter of Intent if the price to be paid for the M/WBE Work does not bear a reasonable relationship to the value of such work under the Contract as determined by the Awarding Authority.

8.6 Within five (5) working days after receipt of the Schedule For M/WBE Participation, Letters of Intent, and SOMWBA certification letters, 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 M/WBE Participation and appropriate Letters of Intent and SOMWBA certification letters establishing that the M/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 Bidder, subject to said Bidder’s compliance with these conditions.

8.7 The Bidder’s attention is called to Article XIII of the General Conditions of the Contract which requires the Contractor to submit, within 30 days of the Contract Date, signed subcontracts with all subcontractors or a purchase order or invoice from each material supplier and/or manufacturer listed on the Schedule For M/WBE Participation.
8.8 A filed sub-Bidder is not required to submit a Schedule of M/WBE Participation with its Bid. A filed sub-Bidder may, at its option, submit a Letter of Intent with its Bid if it is a SOMWBA certified M/WBE. If a filed sub-Bidder intends to sub-subcontract work to a SOMWBA certified M/WBE, 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 M/WBE with its Bid. A filed sub-Bidder can subcontract out up to 20% of its work to M/WBEs unless such work is designated as sub-sub contract Paragraph E work in the Bid Documents in which case the 20% cap does not apply.

SECTION 9 -- CONTRACT AWARD

9.1 "Award" means the determination, selection, and notification of the lowest, responsible and eligible Bidder by the Awarding Authority.

9.2 The Awarding Authority will award the Contract within thirty days, Saturdays, Sundays, and legal holidays excluded after the opening of Bids in accordance with M.G.L. c.149 §44A.

9.3 The Contract will be awarded to the lowest responsible and eligible Bidder as determined by the Awarding Authority, except in the event of substitution as provided under M.G.L. c.149, §§44E and 44F, in which cases the procedure as required by said sections shall govern the award of the Contract.

9.4 As used herein, the term "lowest responsible and eligible Bidder" shall mean the general Bidder whose Bid is the lowest of those Bidders who, in the Awarding Authority's opinion, are ready, willing and able to comply with all requirements of the Contract Documents and demonstrably possess the skill, ability, and integrity necessary for the faithful performance of the Work, based on the determination of past performance and financial soundness under (i) M.G.L. c.149 §44A and following sections, (ii) the rules, regulations, orders, guidelines and policies promulgated from time to time by the Commissioner of the Division of Capital Asset Management and Maintenance ("DCAM") and (iii) any other relevant criteria that the Commissioner may prescribe. If the Awarding Authority determines that any non-filed subcontractor chosen by a Bidder is not qualified or responsible, then the Bidder shall obtain another subcontractor satisfactory to Awarding Authority and the contract price shall not be adjusted.

9.5 The general Bid price shall be the price set forth in paragraph C of the Form for General Bid. No general Bid shall be rejected (i) because the sum of the prices set forth in Item 1 and 2 does not equal the general Bid price set forth in said paragraph C or (ii) because of one or more errors in setting forth the name, the sub-Bid price of a sub-Bidder, or the total of Item 2, provided that
the sub-Bidder or sub-Bidders designated are clearly identifiable, or (iii) because the plans and specifications do not accompany the Bid or are not submitted with the Bid.

9.6 Should the Contract Documents require submission of special data to accompany the Bid, the Awarding Authority reserves the right to rule the Bidder’s failure to submit such data an informality and to received said data subsequently within a reasonable time as set by the Awarding Authority, provided that no such ruling shall result in an unfair advantage to the Bidder.

9.7 The Awarding Authority also reserves the right to reject any sub-Bid if it determines that such sub-Bid does not represent the Bid of a person competent to perform the work as specified, or if fewer than three sub-Bids are received for a sub-trade, and the Bid prices are not reasonable for acceptance without further competition.

9.8 If the Awarding Authority decides to reject all general Bids or if the Awarding Authority does not receive any general Bids, the Awarding Authority may retain and use the sub-Bids received for a second opening of general Bids; provided, however, that there are no changes in the work involved for the sub-trades for which the sub-Bids are so retained and used; and provided, further, that the Awarding Authority shall obtain the consent of each sub-Bidder included in any award of a general Contract made pursuant to the second opening of general Bids if such award is not made within ninety days, Saturdays, Sundays and legal holidays excluded, after the opening of such sub-Bids.

SECTION 10 - EXECUTION OF CONTRACTS

10.1 If a selected filed sub-Bidder fails, within five days, Saturdays, Sundays and legal holidays excluded, after presentation of a Subcontract by the general Bidder to which the Contract was awarded, to perform its agreement to execute a Subcontract in the form provided by the Awarding Authority with such general Bidder contingent upon the execution of the general Contract, and, if requested to do so by such general Bidder in the general Bid, to furnish a performance and a payment bond as stated in its filed sub-Bid, such general Bidder and the Awarding Authority shall select from the other filed sub-Bids duly filed with the Awarding Authority for such sub-trade and not rejected the lowest responsible and eligible filed sub-Bidder at the amount named in its filed sub-Bid as so filed against whose standing and ability the general Contractor makes no objection, and the Contract price shall be adjusted by the difference between the amount of such filed sub-bid and the amount of the sub-bid of the delinquent filed sub-Bidder.

10.2 Upon receipt of the Award, the general Bidder awarded the Contract shall submit three (3) properly executed originals of each of the following documents prior to execution of the Contract by the Awarding Authority. All such documents shall be in the form prescribed by the Awarding Authority. Note: The successful general Bidder must submit its Schedule For Participation of
Minority/Women Business Enterprises and Letters of Intent as set forth in Section 8.4 above prior to Award of the Contract.
- Owner-Contractor Agreement
- Certificate of Corporate Vote
- Joint Venture Authorization (if appropriate)
- Performance and Payment Bonds with power of attorney attached
- Certificates of Insurance evidencing coverage in amounts required by the Contract Documents

-Written representation by the General Contractor to the effect that it has presented subcontracts to all selected filed sub-Bidders and a statement as to whether or not each such selected filed sub-Bidder has executed its subcontract such that the Awarding Authority may release the Bid deposit with respect to the same. **Misrepresentation of the foregoing shall render the general Contractor liable to the Awarding Authority for the sum of any Bid deposit released by the Awarding Authority with respect to a filed sub-Bidder that fails to execute its subcontract.**

-Any other documents that the Awarding Authority may reasonably require in connection with the Contractor's execution of the Contract.

**10.3 Please note that no part of the General Contractor's work may be subcontracted without the prior written approval of the Awarding Authority.** If the General Contractor desires to subcontract any part of the Work, other than work covered by Item 2, filed sub-Bidders, the General Contractor must promptly forward to the Awarding Authority a list in triplicate designating the work to be performed and the name of each proposed subcontractor for approval by the Awarding Authority. Approved subcontractors are eligible for direct payments under M.G.L. 30, § 39F, as amended. Material suppliers not involving site labor need not be submitted for approval.

**SECTION 11 - RETURN OF BID DEPOSITS**

**11.1** All Bid deposits of general Bidders, except those of the three (3) lowest responsible and eligible general Bidders, shall be returned within five (5) days, Saturdays, Sundays and legal holidays excluded, after the opening of the general Bids. The Bid deposits of the three (3) lowest responsible and eligible general Bidders shall be returned upon the execution and delivery of the General Contractor, if no award is made, upon the expiration of the time prescribed in M.G.L. c. 149, § 44A for making an award; except that, if any general Bidder fails to perform its agreement to execute the Contract and furnish Performance and Payment Bonds as stated in its Bid, then said general Bidder’s Bid deposit shall become the property of the Commonwealth as liquidated damages; provided that the amount of the Bid deposit that
becomes the property of the Commonwealth shall not exceed the difference between the Contractor's Bid price and the Bid price of the next lowest responsible and eligible Bidder; and provided further that, in the case of death, disability, bona fide clerical or mechanical error of a substantial nature, or other similar unforeseen circumstances affecting the general Bidder, such general Bidder's Bid deposit shall be returned.

11.2 All Bid deposits of sub-Bidders, except (i) those of the sub-Bidders named in the general Bids of the three (3) lowest responsible and eligible general Bidders and (ii) those of the three (3) lowest responsible and eligible sub-Bidders for each sub-trade, shall be returned within five (5) days, Saturdays, Sundays and legal holidays excluded, after the opening of the general Bids. The Bid deposits of sub-Bidders not returned pursuant to the provisions of the preceding sentence shall be returned within five (5) days, Saturdays, Sundays, and legal holidays excluded, after the execution of the General Contract; except that, if a selected sub-Bidder fails to perform its agreement to execute a sub-contract with the general Bidder selected as the general Contractor, contingent upon the execution of the General Contract, and, if requested to do so in the general Bid by such general Bidder, to furnish a Performance and Payment Bonds as stated in its sub-Bid in accordance with M.G.L. c. 149, § 44F(2), the Bid deposit of such sub-Bidder shall become the property of the Commonwealth as liquidated damages, provided that the amount of the Bid deposit that shall become the property of the Commonwealth shall not exceed the difference between its sub-Bid price and the sub-Bid price of the next lowest responsible and eligible sub-Bidder.

11.3 In addition to the provisions for the return of Bid deposits as provided above, upon receipt of a Bid Bond in an amount not less than the amount of the required Bid deposit, the Awarding Authority shall return any Bid deposit of a Bidder forthwith after the public opening of Bids.
ATTACHMENT A

PREVAILING WAGE SCHEDULE

The minimum wage rates provided in the following pages have been provided by the Division of Occupational Safety of the Massachusetts Department of Labor and Workforce Development. The Awarding Authority is not responsible for errors or omissions in such wage rates.

M.G.L. c. 149, §§ 26 and 27 provide as follows:

"...Payments by employers to health and welfare plans, pension plans and supplementary unemployment benefit plans under collective bargaining agreements or understandings between organized labor and employers shall be included for the purpose of establishing minimum wage rates as herein provided.

...The aforesaid rates of wages in the schedule of wage rates shall include payments by employers to health and welfare plans, pension plans and supplementary unemployment benefit plans as provided in said section twenty-six, and such payments shall be considered as payments to persons under this section performing work as herein provided. Any employer engaged in the construction of such works who does not make payments to a health and welfare plan, a pension plan and a supplementary unemployment benefit plan, where such payments are included in said rates of wages, shall pay the amount of said payments directly to each employee engaged in said construction "
ATTACHMENT B:

Forms Used During Bidding

Sample Certificate of Eligibility - Prime Bidder
Sample Certificate of Eligibility - Sub-Bidder
Update Statement – Prime Bidder
Update Statement - Sub-Bidder
Blanket Deposit Bond
Form of General Bid
Form of Sub-Bid
Certificate of Eligibility

Contractor: CONTRACTOR

CONTRACTOR ADDRESS

CONTRACTOR CITY MA 00000

In accordance with M.G.L. Chapter 149, Section 44D and 810 CMR 4.00, you are hereby certified to file bids under Chapter 149, Section 44A in the following categories:

- Exterior Siding
- General Building Construction
- Painting

Your Single Project Limit is: $2,500,000
Your Aggregate Work Limit is: $5,000,000

This certificate is valid from 10/15/2005 to 10/15/2006

-------------------------------------

George M. Matthews, Deputy General Counsel
Date

for David B. Perini, Commissioner

Official DCAM Amendments Date Authorization

Extension to:

Name:

SPL:

GBC SPL:

AWL:

Category:

Address:
Sub-Bidder Certificate of Eligibility

#05 6666

Contractor: CONTRACTOR

CONTRACTOR ADDRESS

CONTRACTOR CITY MA 00000

In accordance with M.G.L. Chapter 149, Section 44D and 810 CMR.4.00, you are hereby certified to file sub-bids under Chapter 149, Section 44A in the following categories:

Metal Windows

Glass & Glazing

The average numerical value on projects evaluated by: 89

Number of prior construction projects evaluated by DCAM on this: 15

Number of projects given numerical values below a passing score: 1

This certificate is valid 10/16/200 to 10/16/2006

----------------------------------------------------------------------------------------------------------------------------------

George M. Matthews, Deputy General Counsel Date

for David B. Perini, Commissioner

Official DCAM Amendments Date Authorization

Extension to: _____________________________

Name: _________________________________

Category: _______________________________

Address: _______________________________
SPECIAL NOTICE TO AWARDING AUTHORITY
BIDDERS’ UPDATE STATEMENTS ARE NOT PUBLIC RECORDS AND
ARE NOT OPEN TO PUBLIC INSPECTION (M.G.L. C.149, §44D)

Effective March 30, 2010
Commonwealth of Massachusetts
Division of Capital Asset Management
PRIME/GENERAL CONTRACTOR UPDATE STATEMENT

TO ALL BIDDERS AND AWARDING AUTHORITIES
A COMPLETED AND SIGNED PRIME/GENERAL CONTRACTOR UPDATE STATEMENT MUST BE SUBMITTED WITH EVERY PRIME/GENERAL BID FOR A CONTRACT PURSUANT TO M.G.L. c.149, §44A AND M.G.L. c. 149A. ANY PRIME/GENERAL BID SUBMITTED WITHOUT AN APPROPRIATE UPDATE STATEMENT IS INVALID AND MUST BE REJECTED. Caution: This form is to be used for submitting Prime/General Contract bids. It is not to be used for submitting Filed Sub-Bids or Trade Sub-Bids.

AWARDING AUTHORITIES
If the Awarding Authority determines that the bidder does not demonstrably possess the skill, ability, and integrity necessary to perform the work on the project, it must reject the bid.

BIDDER’S AFFIDAVIT

I swear under the pains and penalties of perjury that I am duly authorized by the bidder named below to sign and submit this Prime/General Contractor Update Statement on behalf of the bidder named below, that I have read this Prime/General Contractor Update Statement, and that all of the information provided by the bidder in this Prime/General Contractor Update Statement is true, accurate, and complete as of the bid date.

[Enter Bid Date Here] [Enter Name of Prime/General Contractor Here]
Bid Date Name of Prime/Generic Contractor

[Enter Project Number Here] [Enter Business Address Here]
Project Number (or Business Address
name if no number)

[Enter Name of Awarding Authority Here] [Enter Your Telephone Number Here]
Awarding Authority Telephone Number

SIGNATURE⇒
Bidder’s Authorized Representative

Division of Capital Asset Management
(Edited by UMass Amherst 1/19/2011)
• This form must be completed and submitted by all Prime/General contractors bidding on projects pursuant to M.G.L. c. 149, §44A and M.G.L. c. 149A.
• You must give complete and accurate answers to all questions and provide all of the information requested. MAKING A MATERIALLY FALSE STATEMENT IN THIS UPDATE STATEMENT IS GROUNDS FOR REJECTING YOUR BID AND FOR DEBARRING YOU FROM ALL PUBLIC CONTRACTING.
• Information is to cover the period from the date your most recent annual Certificate of Eligibility was issued (not extended) to the date of the bid.
• You must use this official form of Update Statement. Copies of this form may be obtained from the awarding authority and from the Asset Management Web Site: www.mass.gov/cam
• If additional space is needed, please copy the appropriate page of this Update Statement and attach it as an additional sheet.
• See the section entitled “Bidding Limits” in the Instructions to Awarding Authorities for important information concerning your bidding limits.

INSTRUCTIONS TO AWARDING AUTHORITIES

Determination of Bidder Qualifications
• It is the awarding authority’s responsibility to determine who is the lowest eligible and responsible bidder. You must consider all of the information in the low bidder’s Update Statement in making this determination. Remember: this information was not available to the Division of Capital Asset Management at the time of certification.
• The bidder’s performance on the projects listed in Parts 1 and 2 must be part of your review. Contact the project references.
• AWARDING AUTHORITIES ARE STRONGLY ENCOURAGED TO REVIEW THE LOW BIDDER’S ENTIRE CERTIFICATION FILE AT THE DIVISION OF CAPITAL ASSET MANAGEMENT. Telephone (617) 727-9320 for an appointment.

Bidding Limits

Single Project Limit: The total amount of the bid, including all alternates, may not exceed the bidder’s Single Project Limit.

Aggregate Work Limit: The annual value of the work to be performed on the contract for which the bid is submitted, when added to the annual cost to complete the bidder’s other currently held contracts, may not exceed the bidder’s Aggregate Work Limit. Use the following procedure to determine whether the low bidder is within its Aggregate Work Limit:

Step 1 Review Update Statement Question #2 to make sure that all requested information is provided and that the bidder has accurately calculated and totaled the annualized value of all incomplete work on its currently held contracts (column 9).

Step 2 Determine the annual dollar value of the work to be performed on your project. This is done as follows:

(i) If the project is to be completed in less than 12 months, the annual dollar value of the work is equal to the full amount of the bid.

(ii) If the project will take more than 12 months to complete, calculate the number of years given to complete the project by dividing the total number of months in the project schedule by 12 (calculate to 3 decimal places), then divide the amount of the bid by the calculated number of years to find the annual dollar value of the work.

Step 3 Add the annualized value of all of the bidder’s incomplete contract work (the total of column 9 on page 5) to the annual dollar value of the work to be performed on your project. The total may not exceed the bidder’s Aggregate Work Limit.

Correction of Errors and Omissions in Update Statements

Matters of Form: An awarding authority shall not reject a contractor’s bid because there are mistakes or omissions of form in the Update Statement submitted with the bid, provided the contractor promptly corrects those mistakes or omissions upon request of the awarding authority. [810 CMR 8.05(1)].

Correction of Other Defects: An awarding authority may, in its discretion, give a contractor notice of defects, other than mistakes or omissions of form, in the contractor’s Update Statement, and an opportunity to correct such defects, provided the correction of such defects is not prejudicial to fair competition. An awarding authority may reject a corrected Update Statement if it contains unfavorable information about the contractor that was omitted from the Update Statement filed with the contractor’s bid. [810 CMR 8.05(2)].
PART 1 - COMPLETED PROJECTS

LIST ALL PUBLIC AND PRIVATE BUILDING PROJECTS YOUR FIRM HAS COMPLETED SINCE THE DATE YOUR CURRENT CERTIFICATE OF ELIGIBILITY WAS ISSUED (NOT EXTENDED). *

<table>
<thead>
<tr>
<th>PROJECT TITLE &amp; LOCATION</th>
<th>WORK CATEGORY</th>
<th>CONTRACT PRICE</th>
<th>START DATE</th>
<th>DATE COMPLETED</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Enter Project Title &amp; Location Here]</td>
<td>[Enter Work Category]</td>
<td>[Enter Contract Price]</td>
<td>[Enter Start Date]</td>
<td>[Date Completed]</td>
</tr>
<tr>
<td>[Enter Project Title &amp; Location Here]</td>
<td>[Enter Work Category]</td>
<td>[Enter Contract Price]</td>
<td>[Enter Start Date]</td>
<td>[Date Completed]</td>
</tr>
<tr>
<td>[Enter Project Title &amp; Location Here]</td>
<td>[Enter Work Category]</td>
<td>[Enter Contract Price]</td>
<td>[Enter Start Date]</td>
<td>[Date Completed]</td>
</tr>
<tr>
<td>[Enter Project Title &amp; Location Here]</td>
<td>[Enter Work Category]</td>
<td>[Enter Contract Price]</td>
<td>[Enter Start Date]</td>
<td>[Date Completed]</td>
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<tr>
<td>[Enter Project Title &amp; Location Here]</td>
<td>[Enter Work Category]</td>
<td>[Enter Contract Price]</td>
<td>[Enter Start Date]</td>
<td>[Date Completed]</td>
</tr>
<tr>
<td>[Enter Project Title &amp; Location Here]</td>
<td>[Enter Work Category]</td>
<td>[Enter Contract Price]</td>
<td>[Enter Start Date]</td>
<td>[Date Completed]</td>
</tr>
<tr>
<td>[Enter Project Title &amp; Location Here]</td>
<td>[Enter Work Category]</td>
<td>[Enter Contract Price]</td>
<td>[Enter Start Date]</td>
<td>[Date Completed]</td>
</tr>
</tbody>
</table>

Attach additional sheets if necessary

* If your firm has been terminated from a project prior to completion of the work or has failed or refused to complete its work under any contract, full details and an explanation must be provided. See Part 3 of this Update Statement.
PROVIDE THE FOLLOWING REFERENCE INFORMATION FOR EACH COMPLETED PROJECT LISTED ON THE PREVIOUS PAGE.

<table>
<thead>
<tr>
<th>PROJECT TITLE</th>
<th>COMPANY NAME</th>
<th>CONTACT PERSON</th>
<th>TELEPHONE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OWNER:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DESIGNER:</td>
<td></td>
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<tr>
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<td>GC:</td>
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<td>OWNER:</td>
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<tr>
<td></td>
<td>DESIGNER:</td>
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<td>DESIGNER:</td>
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<td><strong>OWNER:</strong></td>
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<td><strong>DESIGNER:</strong></td>
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<tr>
<td><strong>GC:</strong></td>
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</tr>
</tbody>
</table>

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above, either through a business or family relationship?  

☐ YES  ☐ NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship?  

☐ YES  ☐ NO

If you have answered YES to either question, explain: _____

---

*Division of Capital Asset Management*  
Prime/General Contractor Update Statement Effective March 30, 2010  
Page 5 of 12
PART 2 - CURRENTLY HELD CONTRACTS

LIST ALL PUBLIC AND PRIVATE BUILDING AND NON-BUILDING CONSTRUCTION PROJECTS YOUR FIRM HAS UNDER CONTRACT ON THIS DATE REGARDLESS OF WHEN OR WHETHER THE WORK COMMENCED.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROJECT TITLE &amp; LOCATION</td>
<td>WORK CATEGORY</td>
<td>START AND END DATES</td>
<td>ON SCHEDULE (yes / no)</td>
<td>CONTRACT PRICE</td>
<td>% NOT COMPLETE</td>
<td>$ VALUE OF WORK NOT COMPLETE (col. 5 x col. 6)</td>
<td>NO. OF YEARS REMAINING (see note below)</td>
<td>ANNUALIZED VALUE OF INCOMPLETE WORK (col. 7 ÷ col. 8) (divided by)</td>
</tr>
</tbody>
</table>

ANNUALIZED VALUE OF ALL INCOMPLETE CONTRACT WORK (Total of Column 9) $_____

**Column 8**  • If less than one year is left in the project schedule, write 1.

• If more than 12 months are left in the project schedule, divide the number of months left in the project schedule by 12 (calculate to three decimal places).
<table>
<thead>
<tr>
<th>GC:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>OWNER:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DESIGNER:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GC:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above either through a business or family relationship?  □ YES  □ NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship?  □ YES  □ NO

If you have answered YES to either question, explain: _____
**PART 3 - PROJECT PERFORMANCE**

For Parts 3 and 4, if you answer YES to any question, please provide on a separate page a complete explanation. Information is to cover the period from the date your most recent annual Certificate of Eligibility was issued (not extended) to the date of the bid. Include all details [project name(s) and location(s), names of all parties involved, relevant dates, etc.]. IF YOU HAVE ANY DOUBT AS TO WHETHER TO ANSWER “YES” IT IS BETTER TO BE OVER INCLUSIVE AND TO PROVIDE A DETAILED EXPLANATION.

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Has your firm been terminated on any contract prior to completing a project or has any officer, partner or principal of your firm been an officer, partner or principal of another firm that was terminated or failed to complete a project?</td>
<td>☐️</td>
<td>☐️</td>
</tr>
<tr>
<td>2. Has your firm failed or refused either to perform or complete any of its work under any contract prior to substantial completion?</td>
<td>☐️</td>
<td>☐️</td>
</tr>
<tr>
<td>3. Has your firm failed or refused to complete any punch list work under any contract?</td>
<td>☐️</td>
<td>☐️</td>
</tr>
<tr>
<td>4. Has your firm filed for bankruptcy, or has any officer, principal or individual with a financial interest in your current firm been an officer, principal or individual with a financial interest in another firm that filed for bankruptcy?</td>
<td>☐️</td>
<td>☐️</td>
</tr>
<tr>
<td>5. Has your surety taken over or been asked to complete any of your work under any contract?</td>
<td>☐️</td>
<td>☐️</td>
</tr>
<tr>
<td>6. Has a payment or performance bond been invoked against your current firm, or has any officer, principal or individual with a financial interest in your current firm been an officer, principal or individual with a financial interest in another firm that had a payment or performance bond invoked?</td>
<td>☐️</td>
<td>☐️</td>
</tr>
<tr>
<td>7. Has your surety made payment to a materials supplier or other party under your payment bond on any contract?</td>
<td>☐️</td>
<td>☐️</td>
</tr>
<tr>
<td>8. Has any subcontractor filed a demand for direct payment with an awarding authority for a public project on any of your contracts?</td>
<td>☐️</td>
<td>☐️</td>
</tr>
<tr>
<td>9. Have any of your subcontractors or suppliers filed litigation to enforce a mechanic’s lien against property in connection with work performed or materials supplied under any of your contracts?</td>
<td>☐️</td>
<td>☐️</td>
</tr>
<tr>
<td>10. Have there been any deaths of an employee or others occurring in connection with any of your projects?</td>
<td>☐️</td>
<td>☐️</td>
</tr>
<tr>
<td>11. Has any employee or other person suffered an injury in connection with any of your projects resulting in their inability to return to work for a period in excess of one year?</td>
<td>☐️</td>
<td>☐️</td>
</tr>
</tbody>
</table>
PART 4 - Legal or Administrative Proceedings; Compliance with Laws

Please answer the following questions. Information is to cover all judicial and administrative proceedings involving bidder’s firm, which were instituted or concluded (adversely or otherwise) from the date your most recent annual Certificate of Eligibility was issued (not extended) to the date of the bid.

The term “administrative proceeding” as used in this Prime/General Contractor Update Statement includes (i) any action taken or proceeding brought by a governmental agency, department or officer to enforce any law, regulation, code, legal, or contractual requirement, except for those brought in state or federal courts, or (ii) any action taken by a governmental agency, department or officer imposing penalties, fines or other sanctions for failure to comply with any such legal or contractual requirement.

The term “anyone with a financial interest in your firm” as used in this Section “I”, shall mean any person and/or entity with a 5% or greater ownership interest in the applicant’s firm.

If you answer YES to any question, on a separate page provide a complete explanation of each proceeding or action and any judgment, decision, fine or other sanction or result. Include all details (name of court or administrative agency, title of case or proceeding, case number, date action was commenced, date judgment or decision was entered, fines or penalties imposed, etc.). IF YOU HAVE ANY DOUBT AS TO WHETHER TO ANSWER “YES” IT IS BETTER TO BE OVER INCLUSIVE AND TO PROVIDE A DETAILED EXPLANATION.

<table>
<thead>
<tr>
<th>NO</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Have any civil, judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to the procurement or performance of any construction contract, including but not limited to actions to obtain payment brought by subcontractors, suppliers or others?</td>
<td>☐ ☐</td>
</tr>
<tr>
<td>2. Have any criminal proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to the procurement or performance of any construction contract including, but not limited to, any of the following offenses: fraud, graft, embezzlement, forgery, bribery, falsification or destruction of records, or receipt of stolen property?</td>
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<tr>
<td>3. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of any state’s or federal procurement laws arising out of the submission of bids or proposals?</td>
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<td>4. Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of M.G.L. Chapter 268A, the State Ethics Law?</td>
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<td><strong>5.</strong> Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of any state or federal law regulating hours of labor, unemployment compensation, minimum wages, prevailing wages, overtime pay, equal pay, child labor or worker’s compensation?</td>
<td>YES</td>
</tr>
<tr>
<td><strong>6.</strong> Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of any state or federal law prohibiting discrimination in employment?</td>
<td>YES</td>
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<td><strong>7.</strong> Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a claim of repeated or aggravated violation of any state or federal law regulating labor relations?</td>
<td>YES</td>
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<td><strong>8.</strong> Have any proceedings by a municipal, state, or federal agency been brought, concluded, or settled relating to decertification, debarment, or suspension of your firm or any principal or officer or anyone with a financial interest in your firm from public contracting?</td>
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<td><strong>9.</strong> Have any judicial or administrative proceedings involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled relating to a violation of state or federal law regulating the environment?</td>
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<td><strong>10.</strong> Has your firm been fined by OSHA or any other state or federal agency for violations of any laws or regulations related to occupational health or safety? Note: this information may be obtained from OSHA’s Web Site at <a href="http://www.osha.gov">www.osha.gov</a></td>
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<td><strong>11.</strong> Has your firm been sanctioned for failure to achieve DBE/MBE/WBE goals, workforce goals, or failure to file certified payrolls on any public projects?</td>
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<td><strong>12.</strong> Other than previously reported in the above paragraphs of this Section I, have any administrative proceedings or investigations involving your firm or a principal or officer or anyone with a financial interest in your firm been brought, concluded, or settled by any local, state or federal agency relating to the procurement or performance of any construction contract?</td>
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PART 5 - SUPERVISORY PERSONNEL

List all supervisory personnel, such as project managers and superintendents, who will be assigned to the project if your firm is awarded the contract. **Attach the resume of each person listed below.**

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PART 6 - CHANGES IN BUSINESS ORGANIZATION OR FINANCIAL CONDITION

Have there been any changes in your firm’s business organization, financial condition or bonding capacity since the date your current Certificate of Eligibility was issued?  ☐ Yes  ☐ No

If YES, attach a separate page providing complete details.

PART 7 – LIST OF COMPLETED CONSTRUCTION PROJECTS SUBMITTED TO THE DIVISION OF CAPITAL ASSET MANAGEMENT.

Attach here a copy of the list of completed construction projects which was submitted with your firm’s DCAM application for your most recently issued (not extended or amended) DCAM Certificate of Eligibility. The Attachment must include a complete copy of the entire Section G – “Completed Projects” and the final page – “Certification” (Section J) containing the signature and date that the Completed Projects list (Section G) was submitted to the Division of Capital Asset Management.
SPECIAL NOTICE TO AWARDING AUTHORITY
SUB-BIDDERS’ UPDATE STATEMENTS ARE NOT PUBLIC RECORDS AND
ARE NOT OPEN TO PUBLIC INSPECTION (M.G.L. C.149, §44D)

Effective March 30, 2010
Commonwealth of Massachusetts
Division of Capital Asset Management

SUB-BIDDER
UPDATE STATEMENT

TO ALL SUB-BIDDERS, TRADE CONTRACTORS AND AWARDING AUTHORITIES
A COMPLETED AND SIGNED SUB-BIDDER UPDATE STATEMENT MUST BE SUBMITTED WITH
EVERY FILED SUB-BID PURSUANT TO M.G.L. c.149, §44F AND EVERY TRADE SUB-BID PURSUANT
TO M.G.L. c. 149A. ANY FILED SUB-BID OR TRADE SUB-BID SUBMITTED WITHOUT AN
APPROPRIATE SUB-BIDDER UPDATE STATEMENT IS INVALID AND MUST BE REJECTED.
Caution: This form is to be used for submitting Filed Sub-Bids and Trade Sub-Bids. It is not to
be used for submitting Prime/General Contract bids.

AWARDING AUTHORITIES
If the Awarding Authority determines that the sub-bidder is not competent to perform the work
as specified on the project, it should reject the bid.

SUB-BIDDER’S AFFIDAVIT
I swear under the pains and penalties of perjury that I am duly authorized by the bidder
named below to sign and submit this Sub-bidder Update Statement on behalf of the bidder
named below, that I have read this Sub-bidder Update Statement, and that all of the
information provided by the bidder in this Sub-bidder Update Statement is true, accurate,
and complete as of the bid date.

[Enter Bid Date Here] [Enter Name of Sub-bidder or Contractor]
Bid Date Print Name of Sub-bidder or Trade Contractor

[Project Number] [Enter Business Address]
Project Number (or Business Address
name if no number)

[Awarding Authority] [Contractor’s Telephone Number]
Awarding Authority Telephone Number

SIGNATURE⇒

Bidder’s Authorized Representative

Division of Capital Asset Management
(Edited by UMass Amherst 1/19/2011)
INSTRUCTIONS TO SUB-BIDDERS

- This form must be completed and submitted by all Filed Sub-Bidders bidding on projects pursuant to M.G.L. c. 149, §44F and Trade Contractors bidding on projects pursuant to M.G.L. c. 149A.
- You must give complete and accurate answers to all questions and provide all of the information requested. MAKING A MATERIALLY FALSE STATEMENT IN THIS SUB-BIDDER UPDATE STATEMENT IS GROUNDS FOR REJECTING YOUR BID AND FOR DEBARRING YOU FROM ALL PUBLIC CONTRACTING.
- Information is to cover the period from the date your most recent annual Sub-bidder Certificate of Eligibility was issued (not extended) to the date of the bid.
- You must use this official form of Sub-bidder Update Statement. Copies of this form may be obtained from the awarding authority and from the DCAM Web Site: www.mass.gov/cam
- If additional space is needed, please copy the appropriate page of this Sub-bidder Update Statement and attach it as an additional sheet.

INSTRUCTIONS TO AWARDING AUTHORITIES

Determination of Sub-Bidder Qualifications

It is the awarding authority’s responsibility to determine each responsible bidder. You must consider all of the information in the bidder’s Sub-bidder Update Statement in making this determination. Remember: this information was not available to the Division of Capital Asset Management at the time of certification.

- The sub-bidder’s performance on the projected listed in Parts 1 and 2 must be part of your review. Contact the project references.
- AWARDING AUTHORITIES ARE STRONGLY ENCOURAGED TO REVIEW THE SUB-BIDDER’S ENTIRE CERTIFICATION FILE AT THE DIVISION OF CAPITAL ASSET MANAGEMENT. Telephone (617) 727-9320 for an appointment.

Correction of Errors and Omissions in Sub-bidder Update Statements

Matters of Form: An awarding authority shall not reject a sub-bidder’s bid because there are mistakes or omissions of form in the Sub-bidder Update Statement submitted with the bid pursuant to M.G.L. c.149, §44D, provided the sub-bidder promptly corrects those mistakes or omissions upon request of the awarding authority. [810 CMR 8.13(1)].

Correction of Other Defects: An awarding authority may, in its discretion, give a sub-bidder notice of minor defects and omissions as to form in the Sub-bidder’s Update Statement and provide an opportunity to correct its Sub-bidder Update Statement. However, the sub-bidder shall not be allowed to make corrections to a Sub-bidder Update Statement if material information about the sub-bidder was omitted from the Sub-bidder Update Statement filed with the sub-bidder’s bid. The Awarding Authority shall advise DCAM of any material omissions in a Sub-bidder’s Update Statement.. [810 CMR 8.13(2)].
PART 1 - COMPLETED PROJECTS

LIST ALL PUBLIC AND PRIVATE PROJECTS OF $20,000 OR MORE THAT YOUR FIRM HAS COMPLETED SINCE THE DATE YOUR CURRENT SUB-BIDDER CERTIFICATE OF ELIGIBILITY WAS ISSUED (NOT EXTENDED). *

<table>
<thead>
<tr>
<th>PROJECT TITLE &amp; LOCATION</th>
<th>WORK CATEGORY</th>
<th>CONTRACT PRICE</th>
<th>START DATE</th>
<th>DATE COMPLETED</th>
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</table>

Attach additional sheets if necessary

* If your firm has been terminated from a project prior to completion of the work or has failed or refused to complete its work under any contract, full details and an explanation must be provided. See Part 3 of this Sub-bidder Update Statement.
PROVIDE THE FOLLOWING REFERENCE INFORMATION FOR EACH COMPLETED PROJECT LISTED ON THE PREVIOUS PAGE.

<table>
<thead>
<tr>
<th>PROJECT TITLE</th>
<th>COMPANY NAME</th>
<th>CONTACT PERSON</th>
<th>TELEPHONE</th>
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<tbody>
<tr>
<td>OWNER:</td>
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<td>GC:</td>
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</table>

Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above, either through a business or family relationship?  □ YES □ NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship? □ YES □ NO If you have answered YES to either question, explain: ________
PART 2 - CURRENTLY HELD CONTRACTS

LIST ALL PUBLIC AND PRIVATE PROJECTS OF $20,000 OR MORE THAT YOUR FIRM HAS UNDER CONTRACT ON THIS DATE REGARDLESS OF WHEN OR WHETHER THE WORK COMMENCED.

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<thead>
<tr>
<th>1</th>
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<th>7</th>
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<tbody>
<tr>
<td>PROJECT TITLE &amp; LOCATION</td>
<td>WORK CATEGORY</td>
<td>START AND END DATES</td>
<td>ON SCHEDULE (yes / no)</td>
<td>CONTRACT PRICE</td>
<td>% NOT COMPLETE</td>
<td>$ VALUE OF WORK NOT COMPLETE (col. 5 x. col. 6)</td>
</tr>
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</table>
Provide the following reference information for each incomplete project listed on the previous page.

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<thead>
<tr>
<th>PROJECT TITLE</th>
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</tbody>
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Is your company or any individual who owns, manages or controls your company affiliated with any owner, designer or general contractor named above either through a business or family relationship? □ YES □ NO

Are any of the contact persons named above affiliated with your company or any individual who owns, manages or control your company, either through a business or family relationship? □ YES □ NO

If you have answered YES to either question, explain: ______
PART 3 - PROJECT PERFORMANCE

For Parts 3 and 4, if you answer YES to any question, please provide on a separate page a complete explanation. Information is to cover the period from the date your most recent annual Sub-Bidder Certificate of Eligibility was issued (not extended) to the date of the bid. Include all details [project name(s) and location(s), names of all parties involved, relevant dates, etc.]. IF YOU HAVE ANY DOUBT AS TO WHETHER TO ANSWER “YES” IT IS BETTER TO BE OVER INCLUSIVE AND TO PROVIDE A DETAILED EXPLANATION.

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
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<tbody>
<tr>
<td>1. Has your firm been terminated on any contract prior to completing a project or has any officer, partner or principal of your firm been an officer, partner or principal of another firm that was terminated or failed to complete a project?</td>
<td></td>
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<tr>
<td>2. Has your firm failed or refused either to perform or complete any of its work under any contract prior to substantial completion?</td>
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<tr>
<td>3. Has your firm failed or refused to complete any punch list work under any contract?</td>
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<tr>
<td>4. Has your firm filed for bankruptcy, or has any officer, principal or individual with a financial interest in your current firm been an officer, principal or individual with a financial interest in another firm that filed for bankruptcy?</td>
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<tr>
<td>5. Has your surety taken over or been asked to complete any of your work under any contract?</td>
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<tr>
<td>6. Has a payment or performance bond been invoked against your current firm, or has any officer, principal or individual with a financial interest in your current firm been an officer, principal or individual with a financial interest in another firm that had a payment or performance bond invoked?</td>
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<tr>
<td>7. Has your surety made payment to a materials supplier or other party under your payment bond on any contract?</td>
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<tr>
<td>8. Has any subcontractor filed a demand for direct payment with an awarding authority for a public project on any of your contracts?</td>
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<tr>
<td>9. Have any of your subcontractors or suppliers filed litigation to enforce a mechanic’s lien against property in connection with work performed or materials supplied under any of your contracts?</td>
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<tr>
<td>10. Have there been any deaths of an employee or others occurring in connection with any of your projects?</td>
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<tr>
<td>11. Has any employee or other person suffered an injury in connection with any of your projects resulting in their inability to return to work for a period in excess of one year?</td>
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PART 4 - Legal or Administrative Proceedings; Compliance with Laws

Please answer the following questions. Information is to cover all judicial and administrative proceedings involving bidder’s firm, which were instituted or concluded (adversely or otherwise) from the date your most recent annual Sub-Bidder Certificate of Eligibility was issued (not extended) to the date of the bid.

The term “administrative proceeding” as used in this Sub-Bidder Update Statement includes (i) any action taken or proceeding brought by a governmental agency, department or officer to enforce any law, regulation, code, legal, or contractual requirement, except for those brought in state or federal courts, or (ii) any action taken by a governmental agency, department or officer imposing penalties, fines or other sanctions for failure to comply with any such legal or contractual requirement.

The term “anyone with a financial interest in your firm” as used in this Section “I”, shall mean any person and/or entity with a 5% or greater ownership interest in the applicant’s firm.

If you answer YES to any question, on a separate page provide a complete explanation of each proceeding or action and any judgment, decision, fine or other sanction or result. Include all details (name of court or administrative agency, title of case or proceeding, case number, date action was commenced, date judgment or decision was entered, fines or penalties imposed, etc.). IF YOU HAVE ANY DOUBT AS TO WHETHER TO ANSWER “YES” IT IS BETTER TO BE OVER INCLUSIVE AND TO PROVIDE A DETAILED EXPLANATION.

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<td>Are there any other issues that you are aware which may affect your firm’s responsibility and integrity as a building contractor?</td>
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PART 6 - CHANGES IN BUSINESS ORGANIZATION OR FINANCIAL CONDITION
Have there been any changes in your firm’s business organization, financial condition or bonding capacity since the date your current Certificate of Eligibility was issued? ☐ Yes ☐ No If YES, attach a separate page providing complete details.

PART 7 – LIST OF COMPLETED CONSTRUCTION PROJECTS SUBMITTED TO THE DIVISION OF CAPITAL ASSET MANAGEMENT ALONG WITH CERTIFICATION PAGE.

Attach here a copy of the list of completed construction projects which was submitted with your firm’s Application for your most recently issued (not extended or amended) Sub-Bidder Certificate of Eligibility. The Attachment must include a complete copy of the entire Section F – “Completed Projects” (Section G – “Completed Projects” for firms certified based upon their Prime/General Application), and the final page – “Certification Page”, (Section I in the Sub-bidder Application or Section J in Prime/General Application) containing the signature and date that the Completed Projects list (Section F or G) was submitted to the Division of Capital Asset Management.
UNIVERSITY OF MASSACHUSETTS AMHERST
FORM FOR GENERAL BID

M.G.L. c. 149, s. 44E as amended

The following must be attached to or inserted into this Bid:

1. Current Bidder's Certificate of Eligibility issued by the Division of Capital Asset Management and Maintenance showing the Bidder is certified in the category of work specified in the advertisement and the bid documents for this project.

2. Completed current Contractor Update Statement (Form CQ3). NOTE: All information and the documents called for in the update statement must be supplied. All information provided must be complete and accurate. A defect or omission in the Update Statement may result in the rejection of the Bid. Part 5 MUST list the NAMES of all supervisory personnel for this project.

3. Bid deposit meeting the requirements of Section 5.13 and 5.14 of the Instructions to Bidders.
FORM FOR GENERAL BID

To the Awarding Authority:

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

UMA No. 17-16 Project No. 1010301

Project Name: Bowditch Hall, Roof Replacement

in Amherst, Massachusetts, in accordance with the accompanying plans and specifications prepared by ____________________________

__________________________ (name of architect or engineer) for the contract price specified below, subject to additions and deductions according to the terms of the specifications.

B. This bid includes addenda numbered (list all addenda) ____________________.

C. The proposed contract price is

________________________________________

(total bid in words)
dollars ($__________________________).

For Alternate No. 1: Add $__________ Subtract $__________

For Alternate No. 2: Add $__________ Subtract $__________

For Alternate No. 3: Add $__________ Subtract $__________

For Alternate No. 4: Add $__________ Subtract $__________

For Alternate No. 5: Add $__________ Subtract $__________

Name of General Bidder __________________________________________
D. The subdivision of the proposed contract price is as follows:

Item 1. The work of the general contractor, being all work other than that covered by Item 2.  
____________________________________________________ dollars ($_______)  
(total bid in words)

**Item 2. Sub-bids as follows:**

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<tr>
<th>Section #</th>
<th>Subtrade</th>
<th>Name of Sub-Bidder</th>
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<th>Bonds required, indicated by &quot;Yes&quot; or &quot;No&quot;</th>
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The undersigned agrees that each of the above-named sub-bidders will be used for the work indicated at the amount stated, unless a substitution is made. The undersigned further agrees to pay the premiums for the performance and payment bonds furnished by sub-bidders as requested herein and that all of the cost of all such premiums is included in the amount set forth in Item 1 of this bid.

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

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

The undersigned hereby certifies that it is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work; that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for
each employee; and that it will comply fully with all laws and regulations applicable to awards made subject to section forty-four A of Chapter 149 of the General Laws.

The undersigned further certifies under the penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this subsection the word "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity.

The undersigned further certifies under penalty of perjury that the said undersigned is not presently debarred from doing public construction work in the Commonwealth under the provisions of section twenty-nine F of chapter twenty-nine, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated thereunder.

The undersigned further certifies under penalties of perjury that the undersigned is not debarred from doing public construction work under any law, rule or regulation of the federal government.

The undersigned hereby declares that the undersigned has carefully examined the Advertisement, Instructions to Bidders, Owner - Contractor Agreement, General Conditions of the Contract, Special Conditions (if any), Plans and Specifications, all other Contract Documents, and also the Site upon which the proposed work is to be performed. The undersigned further declares that in regard to the conditions affecting the work to be done and the labor and materials needed, this proposal is based solely on the undersigned's own investigation and research and not in reliance upon any representation of any employee, officer or agent of the Commonwealth.
The undersigned further certifies under the penalties of perjury that:
-- this bid is in all respects bona fide, fair and made without collusion or fraud with any other person;
-- we are the only persons interested in this proposal;
-- that it is made without any connection with any other person making any bid for the same work and without directly or indirectly influencing or attempting to influence any other person to bid or to refrain from bidding or to influence the amount of the bid of any other person or corporation;
-- that no person acting for, or employed by, the Commonwealth of Massachusetts is directly or indirectly interested in this proposal, or in any contract which be made under it, or in expected profits to arise therefrom.

As used above the word "person" shall mean natural person, joint venture, partnership, corporation or other business or legal entity.

The undersigned certifies that it shall comply with the provisions of the Equal Employment Opportunity, Non-Discrimination, and Affirmative Action Program set forth in Article XII of the General Conditions of the Contract.

Should the Contract Documents require submission of special data to accompany the bid, the Awarding Authority reserves the right to rule the bidder's failure to submit such data an informality and to receive said data subsequently within a reasonable time as set by the Awarding Authority.

Date __________________, 20__.

____________________________________
(Name of General Bidder)

By_________________________________
(Print Name/Title of Person Signing Bid)

____________________________________
(Signature)

____________________________________
(Business Address)

____________________________________
(City and State)

____________________________________
(Telephone Number) __________ (Facsimile Number)
The following information is furnished by the Bidder for the information of the University of Massachusetts Amherst.

Is Bidder a corporation? ____ If so, incorporated in what state?__________________________

President__________________________________________________________

Secretary or Clerk____________________________________________________

Treasurer____________________________________________________________

If Bidder is a foreign corporation, is it registered to do business in Massachusetts?____

If Bidder is a foreign corporation and is selected, Bidder is required under M.G.L. c. 30, s. 39L to obtain from the Massachusetts Secretary of State, One Ashburton Place, 17th floor, a certificate stating that the corporation is registered to do business in Massachusetts, and to furnish said certificate to the awarding authority prior to the award.

Is Bidder a general partnership or joint venture? ____ If so, name each partner or venturer________________________________________________________

Is Bidder a limited partnership?__________________________________________

Is Bidder registered in Massachusetts? ____ If so, name each general partner __________

If Bidder is a foreign limited partnership and is selected, Bidder is required under M.G.L. c. 30, s. 39L to obtain from the Massachusetts Secretary of State, One Ashburton Place, 17th floor, a certificate stating that the partnership is registered to do business in Massachusetts, and to furnish said certificate to the awarding authority prior to the award.

For each general partner or venturer that is a corporation, provide the following information (use additional sheets if necessary):

Name of corporation_____________________________________________________

State of incorporation_____________________________________________________

President_____________________________________________________________

Secretary or Clerk_____________________________________________________

56
Treasurer

Name of corporation

State of incorporation

President

Secretary or Clerk

Treasurer

Is Bidder an individual?

Residence Address

Name under which Bidder does business

Business Address

If selected Bidder is an individual doing business under a different name then Bidder must furnish evidence of any required DBA filing.

University of Massachusetts Amherst

Facilities Planning

Physical Plant Building

360 Campus Center Way

Amherst, MA 01003-9248

Telephone: (413) 545-1383
The following must be attached to or inserted into this Sub-Bid or Trade Bid:

1. Current Sub-Bidder Certificate of Eligibility issued by the Division of Capital Asset Management and Maintenance showing the Sub-Bidder or Trade Contractor is certified in the category of work for which this Sub-Bid is submitted.

2. Completed Sub-Bidder Update Statement. NOTE: All information and the documents called for in the update statement must be supplied. All information provided must be complete and accurate. A defect or omission in the Update Statement may result in the rejection of the Bid. Part 5 MUST list the NAMES of all supervisory personnel for this project.

3. Bid deposit meeting the requirements of Section 5.13 and 5.14 of the Instructions to Bidders.
To all General Bidders except those excluded:

A. The undersigned proposes to furnish all labor and materials required for completing, in accordance with the hereinafter described Plans, Specifications and addenda, all the work specified in Section No. ________________ of the Specifications and in any Plans specified in such section, prepared by ___________________________ for

(name of architect or engineer)

____________________________

(project number) (project name)

in ____________________________, Massachusetts, for the Contract sum of

(city/town)

____________________________
dollars

($__________________________).

For Alternate No. 1: Add $____________ Subtract $____________

For Alternate No. 2: Add $____________ Subtract $____________

For Alternate No. 3: Add $____________ Subtract $____________

For Alternate No. 4: Add $____________ Subtract $____________

For Alternate No. 5: Add $____________ Subtract $____________

B. This sub-bid includes addenda numbered (list all addenda) ________________

Name of Sub-bidder ________________________________
C. This sub-bid

☐ May be used by any general bidder except: ______________________

☐ May only be used by the following general bidders: ______________________

(To exclude general bidders, insert “X” in one box only and fill in blank following that box. Do not answer C if no general bidders are excluded.)

D. The undersigned agrees that, if it is selected as a sub-bidder, it will, within five days, Saturdays, Sundays, and legal holidays excluded, after presentation of a subcontract by the general bidder selected as the general contractor, execute with such general bidder a subcontract in accordance with the terms of this sub-bid, and contingent upon the execution of the general contract, and if requested so to do in the general bid by such general bidder, who shall pay the premiums therefore, or if prequalification is required pursuant to section 44D3/4, furnish a performance and payment bond of a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the awarding authority in the full sum of the subcontract price.

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

<table>
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<tr>
<th>NAME</th>
<th>CLASS OF WORK</th>
<th>BID PRICE</th>
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(Do not give bid price for any class or part thereof furnished by undersigned).
F. The undersigned agrees that the above list of bids to the undersigned represents bona fide bids based on the hereinbefore described Plans, Specifications and addenda and that, if the undersigned is awarded the contract, they will be used for the work indicated at the amounts stated, if satisfactory to the awarding authority.

G. The undersigned further agrees to be bound to the general Contractor by the terms of the hereinbefore describe Plans, Specifications, including all general conditions stated therein, and addenda, and to assume toward the general Contractor all the obligations and responsibilities that the general Contractor, by those documents, assumes toward the Commonwealth.

H. The undersigned offers the following information as evidence of its qualifications to perform the work as bid upon according to all the requirements of the Plans and specification:

1. Have been in business under present business name ______ years.

2. Ever failed to complete any work awarded? ____________________.

3. List one or more recent buildings with names of the general Contractor and Designer on which you served as a subcontractor for work of similar character as required for the above named building.

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<tr>
<th>Building</th>
<th>Designer</th>
<th>General Contractor</th>
<th>Amount of Contract</th>
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<td>(c)</td>
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</table>

4. Bank reference ____________________________________________

I. The undersigned hereby certifies that it is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work; that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and that it will comply fully with all laws and regulations applicable to awards of subcontracts subject to section forty-four F of Chapter 149 of the General Laws.

The undersigned further certifies under 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 any natural person, joint venture, partnership, corporation or other business or legal entity.
The undersigned further certifies under penalties of perjury that the said undersigned is not presently debarred from doing public construction work in the Commonwealth under the provisions of section twenty-nine F of chapter twenty-nine, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated thereunder.

Date: ________________________________

____________________________________
(Name of Sub-Bidder)

By: ________________________________

____________________________________
(Title and Name of Person Signing Bid)

____________________________________
(Business Address)

____________________________________
(Business Telephone No.)
BID PACKAGE

PART II

OWNER - CONTRACTOR AGREEMENT

Owner - Contractor Agreement
Exhibit A: Additional Insurance Requirements, if any.
Exhibit B: Forms Used During Contract Award and Execution:
  Payment Bond
  Performance Bond
  Schedule for Participation by Minority/Women Business Enterprises
  Letter of Intent
  Certificate of Corporate Vote
  Certificate of Joint Venture
  Certificate of Compliance with State Tax Laws
  Form of Subcontract

Document ID: ____________
Contractor’s DCAM Certification Number: ____________
Contractor’s Vendor Code Number: ____________
UNIVERSITY OF MASSACHUSETTS AMHERST

STANDARD VERTICAL CONSTRUCTION CONTRACT
For Projects Over $25,000 Subject to M.G.L. 149, s. 44A -F

OWNER - CONTRACTOR AGREEMENT

Awarding Authority: ____________________________________________
Department Code: __ __ __

This agreement ("Contract") is made as of the ____ day of __________, 20___, by and between the
Commonwealth of Massachusetts acting by and through the Awarding Authority identified above with a
principal place of business at
______________________________________________________________
and__________________________________________________________, a
_________________ with a principal place of business at
______________________________________________________________
______________________________________________________________, hereinafter called the "Contractor".

Terms used in this Owner - Contractor Agreement which are defined in the General Conditions of the
Contract shall have the meanings designated therein.

The Awarding Authority and the Contractor agree as follows:

64
Article 1. Scope of Work. The Work under this Contract is defined as all work required by the Contract Documents for the construction of ________________________________.

UMA Number ________________________________.

Project Number ________________________________, in accordance with and as described in the Plans and Specifications dated ____________, 20___, prepared by ________________________________, (“Designer”), as modified by Addenda Nos. ______________________ dated ____________, 20____.

Article 2. Time for Completion. The Contractor shall commence the Work under this Contract on the date specified in the written "Notice to Proceed," and shall, within ________________ days after such date, bring the Work to Substantial Completion and to the point at which a Certificate of Agency Use and Occupancy may be issued, and shall bring the Work to Final Acceptance within 30 days after the date specified for Substantial Completion.

Article 3. Contract Price. The Awarding Authority shall pay the Contractor, in current funds, for the performance of the Work, subject to additions and deductions by Approved Change Order(s), the Contract Price of ________________________________ dollars ($ ______________________). The Unit Prices, if any, approved by the Awarding Authority are those included in the Contractor's General Bid. The following Alternates have been accepted and their costs are included in the Contract Price:

Alternate No(s): ________________________________

Article 4. Approved Subcontractors. The filed Subcontractors listed in the Contractor's General Bid submitted by the Contractor have been approved for the performance of the specified portions of the Work subject to the Commonwealth's verification that they have complied with state corporation and partnership registration laws. No other filed Subcontractors and no non-filed Subcontractors shall be used for these or any other portions of the Work without the prior written approval of the Awarding Authority.

Article 5. Certifications. Pursuant to M.G.L. c. 62(c), s.49A, the individual signing this Contract on behalf of the Contractor hereby certifies, under the penalties of perjury, that to the best of his or her knowledge and belief the Contractor has complied with any and all applicable state and federal tax laws. The individual signing this Contract on behalf of the Contractor further certifies under penalties of perjury that the Contractor is not presently debarred from doing public construction work in the Commonwealth under the provisions of M.G.L. c. 29, s. 29F, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated thereunder and is not presently debarred from doing public construction work by any agency of the United States.
Article 6. The Contract Documents: The following documents from the Contract, are incorporated by reference herein, and are referred to as the "Contract Documents:"

- The Instructions to Bidders
- The General Bid submitted by the Contractor
- This Owner – Contractor Agreement, including Exhibit A, if any.
- The General Conditions of the Contract
  - The Supplementary General Conditions [Note: the term “Supplementary General Conditions” may also refer to Division 1 of the Specifications.]
- The Plans and Specifications, including Addenda identified in Article 1 above
- All Approved Change Orders issued after execution of this Owner - Contractor Agreement

Article 7. Minority Business Enterprise and Women Business Enterprise Participation Goals and Minority/Women Workforce Utilization Percentages: The applicable goals, if any, for minority business enterprise and woman business enterprise participation established for this Contract are as follows:

The combined participation goal for Minority/Women Business Enterprise for this Contract is 5.0%.
The applicable minority workforce utilization percentage, if any is ____________.
The applicable women workforce utilization percentage, if any is ____________.

The MBE/WBE participation goal must include a reasonable representation of both MBE and WBE firms that meet or exceed the combined goal. MBE/WBE participation plans that consist solely of either a MBE or WBE representing 100% of the overall combined goals will not be considered reasonable or responsive. Firms submitting MBE/WBE participation plans which do not provide reasonable participation by both MBE/WBE firms shall be provided an opportunity to revise and resubmit their plans within the time frame set by the awarding authority; however, no price adjustments shall be permitted as a result of the revised plan. Firms failing to submit an MBE/WBE participation plan deemed reasonable, and accepted by the awarding authority, shall not be awarded the contract.

Article 8. Liquidated Damages. For the purposes of Article VI of the General Conditions of the Contract, liquidated damages for delay shall be as follows:

$1,000.00 per day

Article 9. Additional Insurance Provisions. The insurance requirements set forth in Article XIV of the General Conditions of the Contract are supplemented by the provisions, if any, appearing in Exhibit A attached hereto and incorporated herein.

In witness whereof, the parties hereto have caused this instrument to be executed in triplicate under seal as of the date set forth above.
CONTRACTOR:

By: _______________________________________

Name: ______________________________________

Title: ______________________________________

Date: ______________________________________

AWARDING AUTHORITY:

By executing this Agreement, the undersigned authorized signatory of the Awarding Authority, who incurs no personal liability by reason of the execution hereof or anything herein contained, hereby certifies under penalties of perjury that this Contract is executed in accordance with a prior approval of the University of Massachusetts Amherst and further certifies under the penalties of perjury that all the applicable provisions of M.G.L. c. 149, s. 44J, have been complied with.

Application of Executive Orders: This agreement is funded by state appropriation; and, accordingly, the University of Massachusetts is using the State Standard Contract terms and conditions for the purposes of this agreement. Chapter 75 of the Massachusetts General Laws, empowers the Board of Trustees of the University of Massachusetts with the authority to govern and manage its affairs without supervision or subject to the control of any other entity of the Commonwealth unless specifically set forth in the Massachusetts General Laws. Therefore the provisions of the State Executive Orders included in this agreement are not applicable to the University of Massachusetts.

All Contracts

By: _______________________________________

Name: ______________________________________

Title: _____Vice Chancellor for Administration & Finance____

Date: ______________________________________
EXHIBIT A
Additional Insurance Provisions

(Insert provision specifying deductible amounts if any)
Exhibit B

Forms Used During Contract Award and Execution

Payment Bond
Performance Bond
Certificate of Corporate Vote
Certificate of Joint Venture
Certificate of Compliance with State Tax Laws
Form for Subcontract
PAYMENT BOND

Know all men by these presents, that

as principal, and ______________________________________________________________

as surety, are held and firmly bound unto the University of Massachusetts Amherst in the sum of

________________________________________________________________________________

in lawful money of the United States of America, to be paid to the University of Massachusetts Amherst, for which payments, well and truly to be made, we bind ourselves, our respective heirs, executors,administrators, successors and assigns, jointly and severally, firmly by these presents.

Whereas, the said principal has made a Contract with the University of Massachusetts Amherst ("Awarding Authority")

Bearing date of ___________________________ , 20____, for construction of

UMA Number _______________________________________________________________________

Project Name _______________________________________________________________________

Now the condition of this obligation is such that if the principal shall pay for all labor performed or furnished and for all materials used or employed in said Contract and in any and all duly authorized modifications, alterations, extensions of time, changes or additions to said Contract that may hereafter be made, notice to the surety of such the foregoing to include any other purpose or items set out in, and to be subject to, provisions of Massachusetts General Laws Chapter 30, section 39A, and Chapter 149 section29, as amended , then this obligation shall become null and void; otherwise it shall remain in full force and virtue.

In witness whereof we hereunto set our hand and seals this ____________ day of

________________________________________, 20__.  

________________________________________ (Seal)  ___________________________________ (Seal)
(Print Name of General Contractor)  (Print Name of Surety)

By ____________________________________  _________________________________________

(Signature – Title)  (Signature – Title)

Surety Address ________________________________________________________________

________________________________________________________________________________
PERFORMANCE BOND

Know all men by these presents, that

as principal, and __________________________________________________________

as surety, are held and firmly bound unto the University of Massachusetts Amherst in the sum of

______________________________________________________________

in lawful money of the United States of America, to be paid to the University of Massachusetts Amherst, for which payments, well and truly to be made, we bind ourselves, our respective heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

Whereas, the said principal has made a Contract with the University of Massachusetts Amherst (“Awarding Authority”)
bearing date of ______________________, 20____, for construction of

UMA Number __________________________________________________________

Project Name __________________________________________________________

Now the condition of this obligation is such that if the principal shall well and truly keep and perform all the undertakings, covenants, agreements, terms and conditions of said Contract and any extensions thereof that may be granted by the University of Massachusetts Amherst, with or without notice to the surety, and during the life of any guarantee required under the Contract, and shall also well and truly keep and perform all the undertakings, covenants, agreements, terms and conditions of any and all duly authorized modifications, alterations, changes or additions to said Contract that may hereafter be made, notice to the surety of such modifications, alterations, changes or additions being hereby waived, then this obligation shall become null and void; otherwise it shall remain in full force and virtue.

In the event that the Contract is abandoned by the Contractor, or is terminated by the University of Massachusetts Amherst under the provisions of said Contract, said surety shall, if requested in writing by the University of Massachusetts Amherst, take such action is necessary to complete the Contract.

In witness whereof we hereunto set our hand and seals this ____________ day of

______________________________, 20__. 
(Print Name of General Contractor)  (Print Name of Surety)

By ________________________________  ________________________________

(Signature – Title)  (Signature – Title)

Surety Address ________________________________

______________________________

Countersigned Mass. Resident Agent By: ________________________________

Agent’s Address: ________________________________

Telephone Number: ________________________________
SCHEDULE FOR PARTICIPATION
BY MINORITY/WOMEN BUSINESS ENTERPRISES
UNIVERSITY OF MASSACHUSETTS AMHERST

UMA Number 17-16  Project Location

Project Name

----------------------------------------

This form must be submitted by the General Contractor within five (5) working days of the opening of the General Bids. A Letter of Intent and SOMWBA certification letter for each M/WBE must be submitted with this Schedule of M/WBE participation.

BIDDER CERTIFICATION:

The undersigned General Contractor firm agrees that it will subcontract with the following listed firms for the work described and for the dollar amounts listed below. For purposes of this commitment, the MBE and WBE designation means that a business has been certified by SOMWBA as either a MBE, WBE or M/WBE. The General Contractor must indicate the MBE/WBE firms it intends to utilize on the project as follows (attach additional sheets if necessary):

<table>
<thead>
<tr>
<th>Company Name &amp; Address</th>
<th>MBE or WBE</th>
<th>Describe MBE/WBE Scopes of Work</th>
<th>Total Dollar Value of Participation</th>
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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 General Contractor to the commitment set forth above.

Name of General Contractor __________________________________________________________

Business Address_____________________________________________________________________

Name (print) _______________________________________________________________________

Title______________________________________________________________________________

Authorized Signature________________________________________________________________

Telephone No.________________________ Fax No.________________________________________

Date ______________________________________________________________________________
LETTER OF INTENT
MINORITY/WOMEN BUSINESS ENTERPRISES PARTICIPATION
UNIVERSITY OF MASSACHUSETTS AMHERST

(To be completed by MBE/WBE, and submitted by the General Bidder within five (5) working days of the opening of General Bids or byFiled Sub-bidder with its bid.)

UMA Number ________________________________ 17-16

Indicate SOMWBA Certification:

☐ MBE

☐ WBE

☐ M/WBE

Project Name ________________________________

Project Location ________________________________

To ____________________________________________

Name of General Bidder/ Sub-bidder

1. This firm intends to perform work in connection with the above project.

2. This firm is currently certified by SOMWBA to perform the work identified below, and has not changed its minority/women ownership, control, or management without notifying SOMWBA within thirty (30) days of such a change.

3. This firm understands that if the General Bidder/Sub-bidder referenced above is awarded the contract, the Bidder intends to enter into an agreement with this firm to perform the activity described below for the prices indicated. This firm also understands that the above-referenced firm, as General Bidder/Sub-bidder, will make substitutions only as allowed by Article XIII of the Contract.

4. This firm understands that under the terms of Article XIII of the contract, only work actually performed by an MBE/WBE will be credited toward MBE/WBE participation goals, and this firm cannot assign or subcontract out any of its work without prior written approval of the DCAM Compliance Office, and that any such assignment or subcontracting will not be credited toward MBE/WBE participation goals.
## MBE/WBE PARTICIPATION

<table>
<thead>
<tr>
<th>Section/Item Number (if applicable)</th>
<th>Describe MBE/WBE Scopes of Work (clarify “Labor Only”, “Material Only” or “Labor and Material”)</th>
<th>If Supplier, Indicate Total Value of Supplies (10% of total counts toward Participation)</th>
<th>Dollar Value of Participation</th>
</tr>
</thead>
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</tbody>
</table>

Total Dollar Value:

$______________________________

Name of MBE/WBE Firm______________________________

Authorized Signature______________________________

Business Address______________________________

Print Name______________________________

Title______________________________

Telephone No________________ Fax No________________

Date______________________________

Letter of Intent – Revised 10/01
CERTIFICATE OF CORPORATE VOTE

____________________________________, 20_____

I hereby certify that I am the ______________ clerk, ______________________, assistant clerk, of
____________________________________ (the “Corporation”) and that at a
duly authorized meeting of the Board of Directors of the Corporation held on
____________________________________ in ______________________ a which a quorum
(Date) ______________________ (Location)
was present and voting it was voted to authorize ______________________
(Name)
____________________________________ of the Corporation to execute
(Officer Title)
and deliver on behalf of the Corporation the following contract and to act as principal to execute bonds
in connection therewith, which contract and bonds were presented to and made a part of the records of
said meeting:

UMA Number ________________

Project Title: ______________________

I further certify that ______________________ is duly qualified and acting
(Name of Corporate Officer)
____________________________________ of the Corporation and that said vote
(Officer Title)
has not been repealed, rescinded or amended.

____________________________________

Name

____________________________________

Date

(CORPORATE SEAL)

SUBSCRIBED AND SWORN TO THIS _____ DAY OF ________, 20______ BEFORE ME

____________________________________

Notary Public

My Commission Expires: ______________________
CERTIFICATE OF JOINT VENTURE  
(INCLUDING SIGNATURE AUTHORITY)

This certificate is being given in connection with the execution by  

___________________________________________________(the “Joint Venture”) of the following construction contract with  

the University of Massachusetts Amherst:  

___________________________________________________  

___________________________________________________  

___________________________________________________  

In connection with the execution of the contract (the “Contract”) the parties to the Joint Venture represent and warrant as follows:  

1. Exhibit A attached hereto is a true and complete copy of the Joint Venture Agreement between  

the parties dated _________________. Said Joint Venture Agreement is in full force and effect  

and has not been modified, amended, revoked, or terminated.  

2. The principal place of business of the Joint Venture is as follows:  

___________________________________________________  

___________________________________________________  

3. The Management Committee of the Joint Venture described in  

Section_____________________________ of the Joint Venture Agreement continues to  

consist of ___________________________________________  

___________________________________________________  

who together have the power to bind the Joint Venture and the parties thereto.  

4. The Management Committee of the Joint Venture hereby appoints ________________  

___________________________________________________ as an authorized representative of the Joint Venture who  

shall have the power, individually, to execute any and all documents in connection with the  

Contract and whose signature shall be binding upon the Joint Venture. The Management  

Committee may modify or revoke such appointment, and may appoint additional authorized  

representative(s), only with the consent of the Director of Facilities Planning, University of  

Massachusetts Amherst and only by a written document executed by the members of the  

Management Committee.
5. No changes in the Management Committee of the Joint Venture shall be effective without the written consent of the Director of Facilities Planning, University of Massachusetts Amherst.

6. No amendments to the Joint Venture Agreement shall be effective without the written consent of the Director of Facilities Planning, University of Massachusetts Amherst.

7. By executing this certificate

acknowledge that they are jointly and severally liable to the University of Massachusetts Amherst for all obligations of the Joint Venture.

This certificate is executed under seal as of the dates set forth opposite the last signature below:

By: ____________________________, a Massachusetts joint venture

By: ____________________________, a Massachusetts corporation having a principal place of business at ____________________________

By: ____________________________, its general partner

By: ____________________________, a Massachusetts corporation having a principal place of business at ____________________________

By: ____________________________, its general partner

(Note: This certificate may have to be modified depending upon the terms of the joint venture agreement.)
CERTIFICATE OF COMPLIANCE WITH STATE LAWS AND WITH UNEMPLOYMENT COMPENSATION CONTRIBUTION REQUIREMENTS

Pursuant to M.G.L. c. 62C, s. 49A and M.G.L., c. 151A, s. 19A,

I, ____________________________________________________ authorized signatory for
________________________________________________________ whose principal place of business is at
________________________________________________________
________________________________________________________

do hereby certify under penalties of perjury that ___________________________ has filed all
state tax returns and paid all taxes as required by law and has complied with all state laws pertaining to
carriances to the unemployment compensation fund and to payments in lieu of contributions.

The Business Organization Social Security Number or Federal Identification Number is

________________________________________________________.

Signed under the penalties of perjury the _____________ day of _____________, 20____.

Signature: ________________________________________________

Name: ____________________________________________________

Title: _____________________________________________________
CERTIFICATE OF COMPLIANCE WITH EMPLOYMENT ELIGIBILITY VERIFICATION REQUIREMENTS (I-9 CERTIFICATE)

Applicable to all UMA Construction Projects
To Be Executed by GC/CMGC/All Subcontractors

Company Name: ____________________________________________________________

I, ____________________________________________________________ authorized signatory for

( Print Name)

Company whose principal place of business is at

________________________________________________________

(Address)

do hereby certify under penalties of perjury that Company shall comply with Federal Department of Homeland Security Requirements in hiring any and all “Employees” to be employed in the Project who are required to be listed in the certified payroll reports for the Project. Such compliance shall include, but not be limited to the faithful completion of the Federal Department of Homeland Security Form I-9 process by company for each of its Employees. Company shall require each of its subcontractors to execute and provide to Company a Certificate of Compliance with Employment Eligibility Verification Requirements (I-9 Certificate) with the execution of each subcontract, and Company shall forward a copy of each such I-9 Certificate to the General Contractor for filing with the University of Massachusetts Amherst. In addition, Company is aware that the weekly workforce report form contained in the contract documents, which must be submitted by the Company on a weekly basis, contains a statement that the Form I-9 process was faithfully completed for all employees listed on the weekly certified payroll report. Company therefore acknowledges that the Company and all of its subcontractors will be required to certify that the Form I-9 process was faithfully completed for all Employees listed on each certified payroll report when submitted.

By the signature of the Contractor’s Authorized Signatory below, the contractor certifies under the pains and penalties of perjury that the Contractor shall not knowingly use undocumented workers in connection with the performance of this contract; that pursuant to federal requirements, the Contractor shall verify the immigration status of all workers assigned to the contract without engaging in unlawful discrimination; and that the Contractor shall not knowingly or recklessly alter, falsify, or accept altered or falsified documents from any such worker. The Contractor understands and agrees that breach of any of these terms during the period of a contract may be regarded as a material breach, subjecting the Contractor to sanctions, including but not limited to monetary penalties, withholding of payments, contract suspension or termination.

UMA Project Number: ________________ Project Number: ________________

Project Title: ____________________________________________________________________

The Company Social Security No. or Federal Identification No. is: __________________________

Signed under pains and penalties of perjury the __________ day of ____________, 20____

Signature: _________________________________________________________________________

Name and Title: ____________________________________________________________________
THIS AGREEMENT made this __________ day of ___________ 20___, by and between

__________________________________________

a corporation organized and existing under the law of ____________________________

a partnership consisting of _____________________________________________

an individual doing business as ____________________________________________

hereinafter called the “Contractor” and _______________________________________

__________________________

a corporation organized and existing under the law of ____________________________

a partnership consisting of _____________________________________________

an individual doing business as ____________________________________________

hereinafter called the “Subcontractor”.

WITNESSETH that the Contractor and the Subcontractor for the considerations hereafter named, agree
as follows:

1. The Subcontractor agrees to furnish all labor and materials required for the completion of all work
specified in Section No. ____________________________

of the Specifications for ____________________________________________

(Name of Sub-trade)

and the Plans referred to therein and addenda No. ______, ________, ________, and
____________ for the ____________________________________________

__________________________________________

(complete title of the project and project no. taken from the title page of the Specifications)
all as prepared by ______________________________________________

(Name of Architect or Engineer)

for the sum of ______________________________________________ ($__________)

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) __________, __________, __________, __________, __________,

and the Contractor agrees to the terms of the hereinbefore described Plans, Specifications (including all general conditions stated herein) and addenda No. __________, and __________, and __________, and to assume to the Contractor all the obligations and responsibilities that the Contractor by those documents assumes to the ______________ hereinafter called the “Awarding Authority”, except to the extent that provisions contained herein 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. The 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 with a reasonable time after the execution of this subcontract, evidence of workers’ 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: ________________________________

SEAL ATTEST

________________________________________  ________________________________________

(Name of Contractor)

By: ________________________________

________________________________________

(City and State)
BID PACKAGE

PART III

GENERAL CONDITIONS OF THE CONTRACT

General Conditions of the Contract
Appendix A: -- Equal Employment Opportunity, Non-Discrimination and Affirmative Action Program
Appendix B: -- Goals for Participation by Minority Business Enterprises and Women Business Enterprises
Appendix C: -- Commonly Used Forms
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  Request and Agreement for a Change in the Plans, Specifications and/or Contract (UMA Form 5)
  Instructions Regarding Change Orders and Contract Modifications (DCAM Form 13)
  Contractor's Weekly Workforce Report
  Minorities/Women in Contractor's Weekly Workforce Report
  Weekly Payroll Report Form and Statement of Compliance
  Quarterly Projected Workforce Table
  Certification of Payment by Contractor to MBE/WBE and Instructions
  Certificate of Completion by Minority/Women Business Enterprise
  Form for Transfer of Title (Work Not Incorporated, UMA Form 16)
  Certificate of Agency Use and Occupancy – E-1
  Certificate of Final Inspection, Release and Acceptance – E-2
  Form ST-5C
UNIVERSITY OF MASSACHUSETTS AMHERST
STANDARD VERTICAL CONSTRUCTION CONTRACT
For Projects over $100,000 Subject to M.G.L. c. 149, s. 44A-F

GENERAL CONDITIONS OF THE CONTRACT

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Request and Agreement for a Change in the Plans,
Specifications and/or Contract (DCAM Form 5)
Notice of Intent
Contractor’s Weekly Workforce Report
Minorities/Women in Contractor’s Weekly Workforce Report

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Weekly Payroll Report Form and Statement of Compliance
Quarterly Projected Workforce Table
Certification of Payment by Contractor to MBE/WBE and Instructions
Certificate of Completion by Minority/Women Business Enterprise
Form for Transfer of Title (Work Not Incorporated, DCAM Form 16)
Certificate of Agency Use and Occupancy - E-1
Certificate of Final Inspection, Release and Acceptance - E-2
ARTICLE I: DEFINITION OF TERMS

The following words shall have the following meanings as used in this Contract:

**Advertisement:** The Advertisement or Notice Inviting Bids or Proposals for the Work identified in Article 6 of the Owner - Contractor Agreement.

**Approval:** (or Approved): An approval in writing signed by the authorized signatory of the Awarding Authority.

**Architect:** The architect identified as the Designer in Article 1 of the Owner - Contractor Agreement.

**As directed (As permitted, as required, as determined or words of like effect):** The direction, permission, requirement or determination of the Designer or the Awarding Authority. Similarly, approved, acceptable, satisfactory or words of like import shall mean approved by or acceptable or satisfactory to the Designer, except as may be otherwise determined by the Awarding Authority.

**Awarding Authority:** The public agency awarding and administering this Contract identified as the Awarding Authority in the Owner - Contractor Agreement. Where the Awarding Authority is an agency of the Commonwealth, references to the Awarding Authority shall also include the Commonwealth and its agencies.

**Building Code:** All applicable rules and regulations to which the Awarding Authority is subject and which are contained or referenced in the code authorized by M.G.L. c. 143, s. 93 et seq., including all amendments thereto.

**Certificate of Agency Use and Occupancy:** A certificate signed by the Designer and the Awarding Authority pursuant to the requirements of Article VI of these General Conditions of the Contract, indicating that the Awarding Authority has determined that (1) the Work has been completed in accordance with the Contract Documents, except for Punch List items, (2) certificates of inspection, testing and/or approval (including a certificate of occupancy under the Building Code), operating permits for any mechanical apparatus which may be required to permit full use and occupancy of the Work by its intended users (which in a Subcontractor’s case may include the Contractor) have been delivered to the Awarding Authority, (3) any applicable written warranties, operating instructions and related materials have been delivered to the Awarding Authority, and (4) the Work may be used for its intended purpose without substantial inconvenience or interference.

**Change Order:** (1) A written order not requiring the consent of the Contractor, signed by the Project Manager and designated as a Change Order, directing the Contractor to make changes in the Work within the general scope of the Contract, or (2) any written or oral order from the Project Manager that causes any change in the Work, provided that the Contractor has given the Awarding Authority written notice stating the date, circumstances, and source of the order and that the Contractor regards the order as a Change Order.

**Contract:** The Contract formed by the Contract Documents as defined in Article 6 of the Owner - Contractor Agreement.

**Contract Documents:** The documents listed in Article 6 of the Owner - Contractor Agreement.
**Contract Modification:** Any alteration of the Contract Documents accomplished by a written agreement properly executed by the parties to this Contract.

**Contract Price:** The Contract Price stated in Article 3 of the Owner - Contractor Agreement which is the total sum owed to the Contractor for all of the Work.

**Days:** Represents calendar days, excluding weekend and holidays, unless otherwise specified.

**DCAM:** The Division of Capital Asset Management and Maintenance of the Commonwealth of Massachusetts.

**Designer:** The architect or engineer identified as the Designer in Article 1 of the Owner - Contractor Agreement, subject to the provisions of Article III, Section 1 of these General Conditions of the Contract.

**Gale Associates**

**Dispute Review Board:** A panel of three experienced impartial reviewers organized and agreed upon by the Owner and Contractor. The Board members are provided with plans and specifications, become familiar with project procedures and participants and meet on the job site regularly to encourage the resolution of disputes at the job level and renders non-binding recommendations on the resolution of the dispute.

**Engineer:** The Designer, except that the term "Resident Engineer" shall have the meaning otherwise specified herein.

**Drawings:** The Drawings are the graphic and pictorial portions of the Contract Documents, wherever located and whenever issued, showing the design, location and dimensions of the Work, generally including Plans, elevations, sections, details, schedules, and diagrams.

**Final Acceptance:** The written determination by the Designer and by the Awarding Authority that the Work has been 100% completed, except for the Contractor's indemnification obligations, warranty obligations, obligations to continue to maintain insurance coverage for the time periods provided in the Contract Documents, and any other obligations which are intended to survive Final Acceptance and/or the termination of the Contract.

**General Bid:** The completed bid form submitted by the Contractor in accordance with the requirements of M.G.L. c. 149.

**Laws:** All applicable statutes, regulations, ordinances, codes, laws, orders, decrees, approvals, certificates and requirements of governmental and quasi-governmental authorities.

**Neutral:** An impartial third party not having an interest in the Owner, the Designer, the Contractor or the Project.

**Notice to Proceed:** The written notice provided by the Awarding Authority to the Contractor which authorizes the Contractor to commence the Work as of a date specified therein, from which date the time of completion specified in Article 2 of the Owner - Contractor Agreement is measured.

**Or equal (or words of like import):** Equal in the opinion of the Awarding Authority determined pursuant to the provisions of M.G.L. c.30, s. 39M and the provisions of these General Conditions of the Contract.
Owner: The University of Massachusetts Amherst, or other instrumentality that will own the Work, including but not limited to the following: UMBA and the Commonwealth.

Plan(s): Drawing(s).

Product Data: Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor or its Subcontractors and suppliers to illustrate materials or equipment for some portion of the Work. Product data also include any such information or instructions produced by the manufacturer or distributor of such materials or equipment and made readily available by said manufacturer or distributor.

Progress Schedule: The progress schedule Approved by the Designer and the Awarding Authority in accordance with Article VI of these General Conditions of the Contract.

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 or by separate contractors.

Project Manager: The Awarding Authority’s representative assigned to the Project.
Cleve Carrens 413-326-1660

Punch List: A list of items determined by the Awarding Authority to be minor incomplete or unsatisfactory work items that do not materially impair the usefulness of the Work for its intended purpose.

Resident Engineer: The on-Site representative of the Awarding Authority.

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

Schedule of Values: The schedule Approved by the Awarding Authority pursuant to Article VIII of these General Conditions of the Contract which allocates the Contract Price to the various portions of the Work and is used as a basis for payments to the Contractor.

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

Site: The land and, if any, building(s) or space within any such building(s) on which or in which the Contractor is to perform the Work.

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

Subcontractor: Person or entity with whom the Contractor contracts in order to perform the Work, except as otherwise specifically provided or required herein or by Law.

Substantial Completion: For work subject to M.G.L. c. 30 s. 39K, "substantial completion" shall occur when (1) 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 (2) the Contractor substantially completes the work and the Awarding Authority takes possession for occupancy, whichever
occurs first. For work subject to M.G.L. c. 30 s. 39G "substantial completion" shall mean either that the work required by the Contract has been fully completed, completed except for work having a Contract Price of less than one percent of the then adjusted total Contract Price, or substantially all of the Work has been completed and opened to public use except for minor incomplete or unsatisfactory work items that do not materially impair the usefulness of the Work.

**Superintendent:** The licensed construction supervisor who is an employee of the Contractor designated to be in full-time attendance at the Site throughout the prosecution and progress of the Work and who shall have complete authority to act for the Contractor.

**User Agency:** The department, county, commission, board, agency or other instrumentality of the Commonwealth of Massachusetts or political subdivision thereof which operates or which will operate the facility at which the Work is undertaken or which comprises the completed Work.

**Work:** The Work defined in Article 1 of the Owner - Contractor Agreement, Article II, Section 2 of these General Conditions of the Contract and otherwise in the Contract Documents.

**Working Hours:** 7:00 a.m. to 5:00 p.m., but not more than eight hours per day, Monday through Friday, unless otherwise specified by applicable Laws.

All terms that this Contract defines may be used with or without initial capital letters. Other terms, abbreviations and references are defined as they appear herein. Words and abbreviations that are not defined in the Contract Documents but which have recognized technical or trade meanings are used in accordance with those meanings. For additional definitions of terms, abbreviations and references refer to the *Supplementary General Conditions, or Specifications.*

**ARTICLE II: EXECUTION OF THE CONTRACT, SCOPE OF WORK, INTERPRETATION OF CONTRACT DOCUMENTS**

1. **Execution.**
   The execution of the Owner – Contractor Agreement by the Contractor is a representation that the Contractor has visited the Site, has become familiar with local conditions under which the Work is to be performed and has correlated personal observations with requirements of the Contract Documents.

2. **Scope of Work.**
   The Work consists of the Work identified in the Contract Documents. The Work comprises the completed construction required by the Contract Documents and includes all labor, tools, materials, supplies, equipment, permits, approvals, paperwork, calculations, submittals, and certificates necessary to develop, construct and complete the Work in accordance with all Laws, and all construction and other services required to be supervised, overseen, performed or furnished by Contractor or that the Contract Documents require the Contractor to cause to be
supervised, overseen, performed or furnished. The Contractor shall provide and perform for the Contract Price all of the duties and obligations set forth in the Contract Documents.

3. **Interpretation.**
   A. The Plans and Specifications and other Contract Documents are to be considered together and are intended to be mutually complementary, so that any work shown on the Plans though not specified in the Specifications, and any work specified in the Specifications though not shown on the Plans, is to be executed by the Contractor as a part of this Contract.
   B. All things that in the opinion of the Designer may be reasonably inferred from the Plans, Specifications and other Contract Documents are to be executed by the Contractor. The Designer shall determine whether the detail Plans conform to the general Plans and Contract Documents, except as may be otherwise determined by the Awarding Authority.
   C. The tables of contents, titles, headings and marginal notes or sub-scripts contained herein are solely to facilitate references, are not intended to be construed as provisions of the Contract, and in no way affect the interpretation of the provisions to which they refer.
   D. Where reference is made in the Contract Documents to publications, standards, or codes issued by associations or societies, such reference shall be interpreted to mean the current edition of such publications, standards, or codes, including revisions in effect on the date of the Advertisement, notwithstanding any reference to a particular date. The foregoing sentence shall not apply to the dates, if any, specified with respect to insurance policy endorsement forms.
   E. In case of any conflict among the Contract Documents, unless the context clearly otherwise requires, the Contract Documents shall be construed according to the following priorities:
      First Priority: Contract Modifications
      Second Priority: Owner - Contractor Agreement
      Third Priority: General Conditions of the Contract
      Fourth Priority: Drawings and Specifications – the most stringent shall apply

4. **Distribution of Work.**
The distribution of the Work is intended to be described under the appropriate trades and, except for filed sub-bid work, may be redistributed, except as directed herein, provided that such redistribution shall cause no controversy among the trades and no delay in the progress of the Work.

5. **Contract Price.**
The Contract Price constitutes full compensation to the Contractor for everything to be performed and furnished in connection with the Work and for all damages arising out of the performance of the Work and/or the action of the elements, and constitutes the maximum compensation regardless of any difficulty incurred by the Contractor in connection with the Work or in consequence of any suspension or discontinuance of the Work.
ARTICLE III: CONTROL OF WORK / ADMINISTRATION OF THE CONTRACT

1. **Designer.**
   Notwithstanding anything to the contrary expressed or implied in this Contract, any of the powers, rights, and duties of the Designer may be exercised by the Awarding Authority, provided that the Awarding Authority shall be under no obligation to do so. The Awarding Authority may rely on the Designer for the performance and exercise of its rights and obligations hereunder and shall be presumed to so rely on the Designer in the absence of an explicit written assumption by the Awarding Authority of any such rights and obligations, except that any Approval required to be obtained from the Awarding Authority hereunder shall not be valid without the signature of the Awarding Authority. The Awarding Authority may explicitly overrule in writing any action, determination or decision of the Designer should the Awarding Authority choose to do so, except to the extent that the same would violate applicable law. Subject to the foregoing, the Designer shall be responsible for the general administration of the Contract and shall perform the duties and exercise the rights herein conferred on the Designer. Except as otherwise specifically provided herein, the Designer shall decide all questions which may arise as to the conduct, quantity, quality, equality, acceptability, fitness, and rate of progress of the several kinds of work and materials to be performed and furnished under this Contract, and shall decide all questions which may arise as to the interpretation of the Plans and Specifications and as to the fulfillment of this Contract on the part of the Contractor. In the case of the death, resignation, inability or refusal of the Designer to act, or the termination of his or her or its employment, the Awarding Authority may appoint another person to act as Designer for the purposes of this Contract. The Awarding Authority shall give written notice to the Contractor of any such appointment.

2. **Right of Access to Work.**
   The Awarding Authority, the User Agency and the Designer (and persons designated by them) may for any purpose enter upon the Work, the Site, and premises used by the Contractor, and the Contractor shall provide safe facilities therefore. Other contractors of the Awarding Authority may also enter upon the same for the purposes which may be required by their contracts or work. Any differences or conflicts which may arise between the Contractor and other contractors of the Awarding Authority with respect to their work shall be initially resolved by the Designer.

3. **Inspection No Waiver.**
   No inspection by the Awarding Authority or the Designer or employees or agents of either of them, and no order, measurement, certificate, approval, payment order, payment, acceptance or any other action or inaction of any of them, shall operate as a waiver by the Awarding Authority of any provision of this Contract.
ARTICLE IV: GENERAL PERFORMANCE OBLIGATIONS OF THE CONTRACTOR

The Contractor shall complete for the Contract Price all of the Work in a proper, thorough, and workmanlike manner in accordance with the Contract Documents. Without limiting the foregoing and without limiting the Contractor’s obligations under any other provision of the Contract Documents, the Contractor shall for the Contract Price perform the following general obligations:

   A. Before commencing the Work, the Contractor shall carefully study the Contract Documents and carefully compare all Specifications, Plans, Drawings, figures, dimensions, lines, marks, scales, directions of the Designer, and any other information provided by the Awarding Authority and shall at once report to the Designer any questions, errors, inconsistencies, or omissions.
   B. Before commencing the Work, the Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents and shall at once report to the Designer any questions, errors, inconsistencies, or omissions.

2. Supervision and Construction Procedures; Coordination; Cutting, and Patching.
   A. The Contractor shall supervise and direct the Work, using the Contractor’s best skill and attention. The Contractor shall be solely responsible for, and shall have control over, construction means, methods, techniques, sequences and procedures, and shall be responsible for coordinating all portions of the Work under the Contract.
   B. The Contractor shall be responsible for the proper fitting of all Work and the coordination of the operations of all trades, Subcontractors, and material men engaged upon the Work. The Contractor shall guarantee to each of its Subcontractors all dimensions which they may require for the fitting of their work to all surrounding work.
   C. All necessary cutting, coring, drilling, grouting, and patching required to fit together the several parts of the Work shall be done by the Contractor, except as may be specifically noted otherwise under any particular filed sub-bid section of the Specifications.
   D. The Contractor shall be responsible to the Awarding Authority for the acts and omissions of the Contractor's employees, agents and Subcontractors, and their agents and respective contractors employees, and other persons performing portions of the Work or supplying materials therefore.
   E. The Contractor shall be responsible for the inspection of portions of the Work already performed under this Contract to determine that such portions are in proper condition to receive subsequent Work.
   F. The Contractor shall employ a registered land surveyor to perform any engineering required for establishing grades, lines, levels, dimensions, layouts, and reference points for the trades. The Contractor shall be responsible for maintaining benchmarks and other survey marks and shall replace any benchmarks or survey marks that may have become disturbed or destroyed. The Contractor shall verify the materials shown on the Drawings before laying out the Work and shall be responsible for any error resulting from its failure to exercise this precaution.
G. Unless otherwise required by the Supplementary General Conditions or the Plans and Specifications, or directed in writing by the Designer, Work shall be performed during regular Working Hours. However, if the Contractor desires to carry on the Work outside of regular Working Hours or on Saturdays, Sundays, or Massachusetts or federal holidays then the Contractor shall allow ample time to allow satisfactory arrangements to be made for inspecting Work in progress and shall bear the costs of such inspection. The Awarding Authority shall bill the Contractor directly for such costs.

H. Work performed outside of regular Working Hours without the consent or knowledge of the Designer and/or the Awarding Authority shall be subject to additional inspection and testing as directed by the Designer. The cost of this inspection and testing shall be borne by the Contractor whether the Work is found to be acceptable or not. The Awarding Authority at its election shall be entitled either to issue a credit Change Order to cover such cost or to withhold such cost from any further payments due the Contractor and/or to receive a payment from the Contractor of the amount of such cost.

3. Superintendent.
   A. The Contractor shall employ a Superintendent whose appointment shall be subject to the Approval of the Awarding Authority. The Superintendent shall be in attendance at the Site full-time during the performance of the Work. The Superintendent shall represent the Contractor. Communications given to and from the Superintendent shall be deemed given to and from the Contractor. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed upon written request in each case. The Superintendent shall attend each job meeting. The Superintendent shall be responsible for coordinating all of the Work of the Contractor and the Subcontractors.

   B. The Superintendent shall be a competent employee regularly employed by the Contractor. The Superintendent shall be licensed in accordance with the Building Code and shall have satisfactorily performed similar duties on previous construction projects similar in type, complexity and scale to the Project. The Superintendent's resume shall be submitted to the Awarding Authority prior to commencement of construction together with such other information as the Awarding Authority may reasonably require in order to determine whether or not to Approve of his or her appointment. Any change in the Superintendent shall require the prior consent of the Awarding Authority. The Contractor shall establish an emergency telephone line by which the Awarding Authority, the Designer, or their respective agents may contact the Superintendent during non-working hours.

4. Labor.
   A. The Contractor shall employ only competent workers. The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall certify and insure 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 the Contractor and each of its subcontractors and others working on the Project shall furnish documentation of successful completion of said course by employees working with the first certified payroll report for each employee. The
Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned
to them. Whenever the Designer shall notify the Contractor in writing that any worker is, in the
Designer's opinion, incompetent, unfaithful, disorderly, or otherwise unsatisfactory, such
employee shall be discharged from the Work and shall not again be employed on the Project
except with the consent of the Designer.

B. The Contractor shall employ a sufficient number of workers to carry on the Work with
all proper speed in accordance with Laws, the requirements of the Contract Documents, and
the Progress Schedule.

C. The Contractor shall procure materials from such sources and shall manage its own
forces and the forces of its Subcontractors and any sub-subcontractors in such a manner as will
result in harmonious labor relations on the Project Site. If union and nonunion workers are
employed to perform any part of the Work, the Contractor shall establish and maintain
separate entrances to the Site for the use of union and nonunion workers. The Contractor shall
cause persons to be employed in the Work who will work in harmony with others so employed.
Should the Work be stopped or materially delayed in the Awarding Authority's reasonable
judgment due to a labor dispute, the Awarding Authority shall have the right to require the
Contractor to employ substitutes acceptable to the Awarding Authority.

A. The Contractor at its sole cost shall take out and pay for all approvals, permits,
certificates and licenses required by Laws, pay all charges and fees, and pay for (or cause the
appropriate Subcontractor to pay for) all utilities required for the proper execution of the Work.

B. The Contractor shall comply with all Laws and shall give all notices required thereby.

C. Except as otherwise specified in this Contract, it is not the Contractor's responsibility to
ascertain that the Contract Documents are in accordance with applicable Laws. However, if the
Contractor observes that portions of the Contract Documents are at variance with the
requirements of Laws, the Contractor shall promptly notify the Designer and Awarding Authority
in writing, and necessary changes shall be accomplished by an appropriate Contract Modification.

D. If the Contractor performs Work knowing it to be contrary to Laws without giving such
notice to the Designer and Awarding Authority, the Contractor shall bear full responsibility for
such Work and all costs attributable thereto, including, without limitation, corrections to the
Work.

6. Lines, Marks etc.
The Contractor shall furnish batter boards and stakes and shall cause to be placed and
maintained thereon so as to be easily read, such lines, marks and directions relating to the
Work as the Designer shall from time to time direct. The Designer shall establish base lines and
benchmarks on the Drawings for the locations of the Work but all other lines and grades shall
be determined by the Contractor.
7. **Excavation.**
The Contractor shall prevent by sheeting and shoring or bracing, if necessary, any caving or bulging of the sides of any excavation made by the Contractor, leaving sheeting and shoring in place, or if any is removed, filling solid the spaces left thereby.

8. **Dewatering/Hoisting/Staging.**
The Contractor shall provide pumping, drainage, and disposal of all water and other flows so that no puddle, nuisance, or damage will be caused by water or flooding. The Contractor shall provide all hoisting equipment and machinery required for the proper execution of the Work. The Contractor shall provide all exterior and interior staging required to be over eight feet in height, except as may be otherwise provided in the Contract Documents.

9. **Corrections to the Work; Inspection No Bar to Subsequent Corrections.**
The Designer's inspection of the Work shall not relieve the Contractor of its responsibilities to fulfill the Contract obligations. Defective work may be rejected by the Designer whether or not such work and/or materials have been previously overlooked or misjudged by the Designer and accepted for payment. If the Work or any part thereof shall be found defective at any time before the Final Acceptance of the whole Work, the Contractor shall forthwith cease the performance of any defective work in progress and, whether or not such work is still in progress, shall forthwith correct such defect in a manner satisfactory to the Designer. If any material brought upon the Site for use in the Work, or selected for the same, shall be rejected by the Designer as unsuitable or not in conformity with the Contract Documents, or as damaged by casualty or deteriorated due to improper storage at the Site or to any other factor, the Contractor shall forthwith remove such materials from the Site. The Contractor shall pay for the cost of making good all work or property of other contractors or of the Owner destroyed or damaged by such removal or replacement; repair any injury, defect, omission or mistake in the Work as soon as it is discovered; finish and immediately make good any defect, omission or mistake in the Work; and complete and leave the Work in perfect condition.

10. **Sanitary Facilities.**
Except as otherwise specified in the Supplementary General Conditions or Specifications, the Contractor shall provide and maintain sanitary facilities for all persons employed on the Work, beginning with the first worker at the Site. Said facilities shall meet the following requirements unless otherwise specified in the Supplementary General Conditions or Specifications.

   A. There shall be no fewer facilities than the number required by applicable Laws;
   B. Facilities shall be kept in a clean sanitary condition at all times and shall be adequately screened to be inaccessible to flies.

(Note: If existing sanitary facilities at the Site are to be used by the Contractor, this requirement will be modified accordingly in the Supplementary General Conditions or Specifications.)
11. **Contract Documents and Samples at the Site.**
A reasonable number of sets of Contract Documents, as defined by the Awarding Authority, will be furnished to the Contractor by the Awarding Authority immediately after signing of the Contract, one of which shall be maintained at the Site for reference by authorized representatives of the Awarding Authority. The Contractor shall maintain at the Site for the use and information of the Awarding Authority one record copy of the Drawings, Specifications, Addenda, Change Orders, Approved Shop Drawings, Product Data, Samples, updated Progress Schedule, and all other submittals, all in good order and marked currently to record changes and selections made during construction. These shall be available to the Designer and the Awarding Authority and shall be delivered to the Designer for submittal to the Awarding Authority upon completion of the Work.

12. **Telephones.**
The Contractor shall provide and maintain separate individual telephone service and pay for all calls relating to the Work. Service and equipment shall meet the requirements, if any, of the Supplementary General Conditions and Specifications and shall include provisions for incoming and outgoing calls: (1) in the Contractor’s field office for the use of its authorized agents and (2) in the Resident Engineer's office for the use of the Designer and authorized agents of the Owner.
13. **Health, Safety, and Accident Prevention**

**A.** In performing the Work, the Contractor shall:

1. Ensure that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his/her health and/or safety as determined under construction safety and health standards promulgated by the U.S. Secretary of Labor by regulation;

2. Protect the lives, health, and safety of other persons; and

3. Prevent damage to property, materials, supplies, and equipment.

**B.** For these purposes, the Contractor shall:

1. Comply with 84 Stat. 1590, the "Occupational Safety and Health Act of 1970" (OSHA) and with regulations and standards issued by the U.S. Secretary of Labor at 29 CFR Part 1926; and

2. Include the terms of this Section 14 in every subcontract so that such terms will be binding on each subcontractor.

3. Designate by notice to the Awarding Authority a responsible member of its organization at the Site whose duties shall include ensuring safety, implementation of Contractor’s Safety Plan referenced below and preventing accidents.

**C.** The Contractor shall maintain an accurate record of exposure data on all accidents incident to the Work resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies, or equipment, and shall report this data in the manner prescribed by 29 CFR Part 1904. Without limiting the foregoing, the Contractor shall submit to the Awarding Authority without delay verbal and written reports of all accidents involving bodily injury or property damage arising in connection with the Work.

**D.** In any emergency affecting the safety of persons or property the Contractor shall immediately act in the exercise of reasonable judgment to prevent threatened damage, injury, or loss. The Contractor shall immediately notify the Awarding Authority of such emergency.

**E.** The Contractor shall be responsible for its Subcontractors’ compliance with the provisions of this Section 14.

**F.** Before commencing any portion of the Work the Contractor shall submit a written Project-specific plan for implementing this Section 14. The plan shall include an analysis of the significant hazards to life, limb and property inherent in the performance of the Work and a plan for controlling these hazards.

**G.** Without limiting the foregoing provisions of this Section 14, the Contractor shall comply with all health and safety Laws applicable to the Work. Without limitation,

1. If the Contractor uses, stores or encounters toxic or hazardous substances it shall comply with M.G.L. c. 111F, s. 2, the "Right to Know" law and regulations promulgated by the Department of Public Health, 105 CMR 670, the Department of Environmental Protection, 310 CMR 33, and the Department of Labor and Workforce Development, 441 CMR 21; and shall post a Workplace Notice obtainable from the Department of Labor and Workforce Development.

2. The Contractor shall comply with the Federal Resource Conservation and Recovery Act, the Federal Comprehensive Environmental Response, Compensation and Liability Act, M.G.L. c. 21C, M.G. L. c. 21E, and any other Laws affecting toxic or
hazardous materials, solid, special or hazardous waste (collectively "Hazardous Materials Laws). Should the Contractor discover unforeseen materials subject to Hazardous Materials Laws at the Site, the Contractor shall immediately comply with any and all requirements for dealing with such materials and notify all required governmental authorities and the Awarding Authority of such discovery.

(3) The Contractor shall be responsible for the location of all utilities in connection with the Work. Without limiting the foregoing, the Contractor shall comply with Dig-Safe Laws. Dig-Safe is the Utility Underground Plant Damage Prevention System, 331 Montvale Road, Woburn, MA, 01801, 1-888-344-7233. The Contractor shall notify Dig-Safe of contemplated excavation, demolition, or explosive work in public or private ways, and in any utility company right of way or easement, by calling 811 or online at http://www.digsafe.com.

(4) The Contractor shall comply with M.G.L. c. 149, s. 129A, relative to shoring and bracing of trenches.

H. Without limiting the Contractor’s responsibilities described above, the Contractor shall take all reasonable precautions for the safety of, and the prevention of injury or damage to (1) all agents and employees and contractors on the Work and all other persons who may be affected thereby including the general public, (2) all the Work and all materials and equipment to be incorporated therein, whether in storage on or off the Site, under the care custody or control of the Contractor or any of its Subcontractors or any contractors directly or indirectly contracting through any of them, and (3) other property at the Site or adjacent thereto, including but not limited to trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of the Work. The Contractor shall promptly remedy all damage or loss to any such property caused in whole or in part by the Contractor, any Subcontractor, or anyone directly or indirectly contracted or employed by any of them or by anyone for whose acts any of them may be liable. Without limiting the foregoing, the Contractor shall:

(1) post and maintain adequate danger signs and other warnings against hazards;
(2) promulgate safety regulations and give appropriate notices to the Awarding Authority and users of adjacent utilities and property;
(3) insure the adequate strength and safety of all scaffolding, staging and hoisting equipment, temporary shoring, bracing and tying;
(4) protect adjoining private or public property;
(5) provide barricades, temporary fences, and covered walkways required by prudent construction practices, Laws and/or the Contract Documents;
(6) furnish approved hard hats and other personal protective equipment, furnish approved first aid supplies, furnish the name of the first aid attendant, and maintain a posted list of emergency facilities;
(7) provide proper means of access to property where the existing access is cut off by the Contractor;
(8) maintain from the beginning of any darkness or twilight through the whole of every night sufficient lights on or near any obstruction so as to guard and protect travelers from injury from such obstruction;
(9) maintain adequate security at the Site so as not to expose the Work and surrounding property to vandalism or malicious mischief;
(10) provide adequate fire protection procedures during the use of cutting torches, welding equipment, plumbers' torches and other flame and spark producing apparatus;
(11) take prompt action to correct any dangerous or hazardous conditions.

I. The Contractor shall not use or store explosives in the performance of the Work unless the Contractor first obtains the Awarding Authority's prior written specific Approval. If the Awarding Authority Approves the use or storage of explosives during the performance of the Work, the Contractor shall first comply with all Laws and obtain all permits, approvals, and certificates required in connection with the same and shall exercise best efforts, including but not limited to the employment and supervision of properly qualified personnel, to prevent damage, injuries, and accidents involving said explosives.

J. The Contractor shall not permit cutting or welding in or immediately adjacent to existing property of the Owner, Awarding Authority or of anyone else without the Awarding Authority's prior Approval in each instance.


A. The Contractor shall not permit the accumulation of interior or exterior debris. The Contractor shall keep the Work area clean at all times. Without limitation, garbage shall be removed daily.

B. The Contractor shall properly classify and remove debris and waste from the Site and transport and dispose of it, all in accordance with Laws, employing a qualified and properly licensed transporter, at any landfill, disposal or recycling facility licensed under applicable Laws, including without limitation, hazardous materials laws. The Contractor shall make all arrangements and give and obtain all notices, communications, documentation, permits, certificates, and approvals necessary for said disposal from the owner or officials in charge of such landfills, disposal or recycling facilities. The Contractor shall bear all fees and costs in connection with such classification, removal, transportation, disposal and storage. The Contractor shall not permit any storage of debris or waste except in accordance with Laws.

C. The Contractor shall not permit any open fire on the Site.

D. Chemical Waste: Chemical waste shall be stored in corrosion resistant containers, removed from the Site, and disposed of not less frequently than monthly unless more frequently required by Laws, including without limitation hazardous materials laws, or by the Supplementary General Conditions or Specifications. Disposal of chemical waste shall be performed in accordance with requirements of the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (DEP). Fueling and lubricating of vehicles and equipment shall be conducted in a manner that affords the maximum protection against spills and evaporation. Lubricants shall be disposed of in accordance with procedures meeting all applicable Laws. The Contractor shall immediately notify the Designer of any hazardous materials release large enough to require reporting under applicable Laws. The Contractor shall be responsible for immediately cleaning up in accordance with Laws any oil or hazardous materials releases resulting from its operations. Any costs incurred in cleaning up any such releases shall be borne by the Contractor.
15. **Weather Protection (M.G.L. c. 149, s. 44G and 44F(1)).**

The Contractor shall furnish and install "weather protection," which means temporary protection of that Work adversely affected by moisture, wind and cold. Weather protection shall be achieved by covering, enclosing and/or heating working areas such that a minimum temperature of 40 degrees Fahrenheit is maintained at the working surface during the months of November through March in order to permit construction to be carried on during such period in accordance with the Progress Schedule. After the building or portion thereof is completely enclosed by either permanent construction or substantial temporary materials having a resistance comparable to the specified permanent construction, the Contractor shall provide heat therein of not less than 55 degrees F. nor more than 75 degrees F. The foregoing provisions do not supersede any specific requirements for methods of construction, curing of materials and the like. Such weather protection shall be consistent with the Progress Schedule, shall permit the continuous progress of the Work necessary to maintain an orderly and efficient sequence of construction operations, shall include one thermometer for every 2,000 square feet of floor space or fraction thereof, shall be subject to the Approval of the Awarding Authority, and shall meet such additional requirements as may be set forth in the Supplementary General Conditions or the Specifications.

16. **Furnishings and Equipment.**

When, in the opinion of the Designer, any portion of the Work is in a reasonable condition to receive fittings, furniture, or other property of the Owner not covered by this Contract, the Contractor shall allow the Awarding Authority to bring such fittings, furniture, and/or other property into such portions of the Work and shall provide all reasonable facilities and protection thereof. No such occupancy shall be construed as interfering with the provisions relating to time of completion, or as constituting an acceptance of the whole or any part of the Work. Any furniture or fittings so installed shall be placed in the Work at the risk of the Awarding Authority except that the Contractor shall be liable for damages or losses to such furniture or fittings to the extent such damages or losses arise in whole or in part from the negligence or intentional misconduct of Contractor, Subcontractors, their agents and/or employees, or anyone for whose acts Contractor is responsible.

17. **Form for Sub-contract.**

The Contractor when subcontracting with sub-bidders filed pursuant to M.G.L. c. 149, s.44F shall use the form for sub-Contract in M.G.L. c. 149, s. 44F(4) (c). The Contractor shall not interpret paragraph 3 of the statutory form of Subcontract to require such sub-bidders to provide insurance with limits higher than the limits that are required by Article XIV of these General Conditions of the Contract assuming that the term “Contractor” refers to the sub-bidder and that the term “Contract Price” refers to the sub-bidder’s price stated in paragraph 1 of the statutory form of Subcontract.

18. **Sales Tax Exemption and Other Taxes.**

All building materials and supplies as well as the rental charges for construction vehicles, equipment and machinery rented exclusively for use on the Site, or while being used exclusively for the transportation of materials for the Work are entitled to an exemption from sales taxes under M.G.L. c. 64H, s. 6(f). The Contractor shall take all action required to obtain the benefit of
such sales tax exemption under the University of Massachusetts Amherst Form ST-5C Contractor’s Sales Tax Exemption, Purchase Certificate, E 043-167-352. The Contractor shall bear the cost of any sales taxes that Contractor incurs in connection with the Work and the Awarding Authority shall not reimburse the Contractor for any such taxes. A copy of the Form ST-5C is provided with this contract.

19. **Final Cleaning.**
At the completion of the Work, the Contractor shall remove all waste materials, rubbish, tools, equipment, machinery and surplus materials, and professionally clean all sight-exposed surfaces so that the Work is clean and ready for occupancy. Subsequent to installation of User Agency furniture, telephones, and equipment, the Contractor shall provide such additional cleaning as may be necessary to remove any soil resulting from installation of such furniture, telephones and equipment.

20. **Maintenance Data.**
Subject to such additional requirements as may be provided in the Supplementary General Conditions or Specifications, the Contractor shall compile 3 complete and identical binders of operating and maintenance data for the entire Work. The Contractor shall submit record maintenance data to the Designer for approval, shall submit approved maintenance data to the Awarding Authority, and shall instruct and train the User Agency’s personnel in proper inspection and maintenance procedures.
21. **Closeout Procedures.**
The Contractor shall take all actions and submit all items required for the issuance of the Certificate of Agency Use and Occupancy and Final Acceptance as specified in the Contract Documents.

22. **Risk of Loss.**
The Contractor shall bear all risk of loss to the Work during the term of the Contract except for any portion of the Work as to which the Certificate of Agency Use and Occupancy has been issued pursuant to Article VI of these General Conditions of the Contract. Nothing herein shall limit the Contractor's responsibilities under Article IX or XV of these General Conditions of the Contract.

23. **LEED Requirements**
Contractor understands that, pursuant to Executive Order No. 484, all new construction and renovation projects over 20,000 square feet must, at a minimum, meet a Massachusetts LEED Plus building standard, and that smaller projects must meet the minimum energy performance standards for advanced buildings established by the Commonwealth of Massachusetts Sustainable Design Roundtable. Furthermore, Contractor understands that the Massachusetts LEED silver standard or a higher LEED standard applies to all projects overseen by the University of Massachusetts Amherst, as well as all projects built on state land for use by state agencies. Contractor must document compliance with this executive order and Project LEED certification standards as described in the project specifications.

**ARTICLE V: MATERIALS AND EQUIPMENT**

1. **Materials Generally.**
   
   A. Unless otherwise specifically provided in the Contract Documents, the Contractor shall provide and pay for 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.

   B. Materials and equipment to be installed as part of the Work (both or either of which are hereinafter referred to as "materials") shall be new, unused, of recent manufacture, assembled, and used in accordance with the best construction practices. The Contractor shall inform himself as to, and shall comply with, the provisions of M.G.L. c. 7, s. 23A, as amended, and shall abide by the same and all applicable rules, regulations and orders made thereunder in relation to the purchase of supplies and materials in the execution of the Work, including the provisions of M.G.L. c.7, s. 22, paragraph 17 which provides that there be "a preference in the purchase of supplies and materials, other considerations being equal, in favor, first, of supplies and materials manufactured and sold within the Commonwealth, and, second, of supplies and materials manufactured and sold elsewhere within the United States."
2. **Shop Drawings, Product Data, and Samples.**

A. The Contractor shall furnish to the Designer all samples of the materials to be used in the execution of the Work as required by the Contract Documents. The Contractor shall furnish to the Designer in a timely manner all coordination Drawings, shop details, Shop Drawings, and setting diagrams which may be necessary for acquiring and installing materials. These shall be reviewed as required by the Designer. A minimum of six (6) copies shall be submitted for final approval, one of which shall be returned to the Contractor, one to the Resident Engineer, one to the Awarding Authority and one filed with the Designer. The inspection and approval by the Designer of Shop Drawings, etc. shall be general and shall in no way relieve the Contractor from responsibility for proper fitting, coordinating, construction, and construction sequencing. The Contractor shall furnish to the Designer such information and vouchers relative to the Work, the materials therefore, and the persons employed thereon, as the Designer shall from time to time request.

B. Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. The purpose of their submission is to demonstrate for those portions of the Work for which submittals are required the way the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents.

C. The Contractor shall review, approve, and submit to the Designer, Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Awarding Authority or of separate contractors. Submittals made by the Contractor which are not required by the Contract Documents or which do not comply with the Contract Documents may be returned without action. The Contractor’s attention is directed to the provisions of Section 4 of this Article V and to the Specifications.

D. The Contractor shall prepare and keep current for the Designer’s approval a schedule of submittals which is coordinated with the Progress Schedule and allows the Designer reasonable time to review submittals.

E. The Contractor shall perform no portion of the Work requiring submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Designer. Such Work shall be in accordance with Approved submittals.

F. By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements, and field construction criteria related thereto and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

G. The Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Designer’s approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Designer in writing of such deviation at the time of submittal and the Awarding Authority has given explicit written approval to the specific deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals by the Designer’s or the Awarding Authority’s actions.
H. 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 Designer on previous submittals.

I. Informational submittals upon which the Designer is not expected to take responsive action may be so identified in the Contract Documents.

J. When professional certification of performance criteria of materials, systems or equipment is required by the Contract Documents, such certification must be stamped by a registered Massachusetts professional in the discipline required. The Designer shall be entitled to rely upon the accuracy and completeness of such calculations and certifications.

K. Materials furnished or used or employed under the Contract must be equal in quality to the samples furnished and be satisfactory to the Designer.

3. Tests.

A. Any material to be used in the Work may be tested or inspected at any time by the Designer with the prior Approval of the Awarding Authority and may be rejected if it fails to comply with specified tests. The Awarding Authority shall pay for all testing of specified material. If the Contractor requests permission to use a material that was not specified, then the Contractor shall pay for such testing. The cost of testing of materials that fail the testing criteria shall be borne by the Contractor.

B. The Contractor shall notify the Designer and the Awarding Authority of the proposed sources of materials in time to permit all required testing and inspection before the material is needed for incorporation into the Work. The Contractor shall have no claim arising from Contractor's failure to designate the proposed source or to order the material in time for adequate testing and inspection. Necessary arrangements shall be made to permit the Designer to make factory, shop or other inspection of materials or equipment ordered for the Work in process of manufacture or fabrication, or in storage elsewhere than the Site.

4. "Or Equal" Submissions.

A. Where products or materials are prescribed by manufacturer name, trade name, or catalog reference, the words "or Approved equal" shall be understood to follow. An item shall be considered equal to the item so named or described if in the opinion of the Awarding Authority (a) it is at least equal in quality, durability, appearance, strength and design, (b) it performs at least equally the function imposed in the general design for the Work, and (c) it conforms substantially, even with deviations, to the detailed requirements for the items as indicated by the Specifications. Any structural or mechanical changes made necessary to accommodate products or materials substituted as an "or equal" shall be at the expense of the Contractor. "Approved equal" shall mean an item with respect to which the Awarding Authority shall have issued a written statement to the Contractor to the effect that the item is, in the Awarding Authority's opinion, equal within the meaning of this paragraph to that prescribed in the Contract Documents.

B. The Contractor shall be responsible for providing the Designer with any information and test results that the Designer reasonably requires to determine whether or not a material is equal to a material named or described in the Contract Documents.
C. Whenever the Contractor submits a material for approval as a substitute for a material named or described in the Contract Documents, such submission shall be made at least one hundred twenty (120) days prior to the date the materials will be used in the Work. In no event shall the Contractor maintain a claim for delays based upon the Designer's review of such substituted materials if the Contractor has failed to comply with the one hundred twenty (120) day submission requirement.

D. The Contractor shall save the written calculations, pricing information, and other data that the Contractor used to calculate the General Bid (the "Bid Pricing Materials") for at least six years after the Awarding Authority makes Final Payment under this Contract. No increase in the Contract Price shall be allowed for any material later found to have been improperly rejected as not being equal unless the Contractor can show persuasive evidence that the rejection increased the Contractor's costs over those provided for in the Bid Pricing Materials, net of all savings the Contractor obtained by substituting other "or-equal" items. Without limiting the foregoing, if the Awarding Authority rejects a proposed substitution on the basis that the item is not equal and if after the Contractor complies with the appeal procedures required by law, DCAM regulation, and by the Contract Documents, the appropriate authority finds that the proposed substitution was equal, the Contract Price may be increased only to the extent that (1) the item that the Contract Documents specifically require costs more than the item later approved as equal, (2) the Bid Pricing Materials prove that the Contractor calculated its bid using the cost of the item later found as equal, (3) any increase is reduced by any cost that the Contractor would have incurred for structural or mechanical changes necessary to accommodate the substitute item, (4) the Contractor shall not be entitled to any adjustment for overhead and profit, (5) any increase must exceed the aggregate amount that the Contractor saved using products or materials that the Awarding Authority approved as equal under this Contract. In calculating the Contractor's aggregate saving under the preceding clause (5), the Contractor shall provide the Awarding Authority with the Bid Pricing Materials and a calculation based on the Bid Pricing Materials that compare the price (stated in the Bid Pricing Materials) of each item replaced with an "or equal" item, with the cost of the approved equal item, specifically describes all costs that Contractor would have incurred making structural or mechanical changes to include within the Work the item later found to have been improperly rejected and copies of all plans, specifications, shop Drawings, and other design documents that the Awarding Authority deems necessary or desirable.

5. Delivery and Storage of Materials; Inspection.

A. Materials and equipment shall be progressively delivered to the Site so that there will be neither delay in the progress of the Work nor an undue accumulation of materials that are not to be used within a reasonable time and so that their security, quality, and fitness of the materials for the Work is preserved.

B. Materials stored off Site shall be insured and stored at the expense of the Contractor so as to guarantee the preservation of their security, quality and fitness for the Work. Without derogating from the Contractor's responsibilities in the previous sentence, when necessary to avoid deterioration or damage, material (on or off Site) shall be placed on wooden platforms or other hard clean surfaces and not on the ground and shall be properly protected.
C. Expenses for inspection of material by the Designer and/or the Awarding Authority personnel including travel, quarters, and subsistence shall be borne by the Contractor requesting the inspection of material stored outside the Commonwealth of Massachusetts as part of the Contract Price. The policy of the Awarding Authority precludes the payment for material stored outside the boundaries of Massachusetts except in extremely limited circumstances with the express written consent of the Awarding Authority. If the Contractor requests an inspection of material stored outside the Commonwealth of Massachusetts, the Awarding Authority will initially pay for all expenses of inspecting the material incurred by the Designer and/or Awarding Authority’s personnel including travel, quarters, and subsistence. The Awarding Authority will then give Contractor an invoice for those costs and the Contractor shall submit a credit Change Order for the amount of those expenses.

D. Stored materials either at the Site or at some other location agreed upon in writing shall be so located as to facilitate prompt inspection and even though approved before storage, may again be inspected prior to their use in the Work.

E. All storage sites shall be restored to their original condition by the Contractor at the Contractor’s expense.

F. The Contractor shall take charge of and be liable for any loss of or injury to the materials for his use delivered to or in the vicinity of the place where the Work is being done, whether furnished by the Owner or otherwise; the Contractor shall notify the Designer as soon as any such materials are so delivered, allow them to be examined by the Designer, and furnish workers to assist therewith.

6. **Defective, Damaged, or Deteriorated Materials and Rejection Thereof.**
The Designer may reject materials if the Designer reasonably determines that such materials do not conform to the Contract Documents in any manner, including but not limited to materials that have become damaged or deteriorated from improper storage whether or not such materials have previously been accepted. The Contractor at its own expense shall remove rejected materials from the Work. No rejected material, the defects of which have been subsequently corrected, shall be used except with the written permission of the Designer. Should the Contractor fail to remove rejected material within a reasonable time, the Designer and/or Awarding Authority may, in addition to any other available remedies, remove and/or replace the rejected material, and to deduct the cost of such removal and/or replacement from any moneys due or to become due the Contractor. No extra time shall be allowed for completion of Work by reason of such rejection. The inspection of the Work shall not relieve the Contractor of any of its obligations herein prescribed, and any defective Work shall be corrected. Work not conforming to the Contract Documents may be rejected notwithstanding that such Work and materials have been previously overlooked or misjudged by the Designer and accepted for payment. If the Work or any part thereof shall be found defective at any time before Final Acceptance of the whole Work, the Contractor shall forthwith make good such defect in a manner satisfactory to the Designer. Nothing in the Contract shall be construed as vesting in the Contractor any property rights in the materials used after they have been attached or affixed to the Work or the Site; but all such materials shall upon being so attached or affixed become a property of the Owner.
ARTICLE VI: PROSECUTION AND PROGRESS

1. **Beginning, Progress Schedule, and Completion of Work.**
   
   **A.** The Contract time shall commence upon the date specified in the Notice to Proceed. The Contractor shall begin Work at the Site within ten days of said date unless otherwise ordered in writing by the Awarding Authority.
   
   **B.** Within ten days after the Work has commenced, the Contractor shall submit to the Designer and to the Awarding Authority, a progress schedule, detailed and computer generated for the term of the Contract as required by the Contract Documents, showing in detail his proposed progress for the construction of the various parts of the Work and the proposed times for receiving required materials. Upon Approval by the Awarding Authority, said schedule shall constitute the Progress Schedule. The Contractor shall at the end of each month, or more often if required, furnish to the Designer and to the Awarding Authority a schedule meeting the requirements of the Specifications showing the actual progress of the parts of the Work in comparison with the Progress Schedule.
   
   **C.** Time is of the essence of this Contract. The Work shall be completed within the time specified in Article 2 of the Owner - Contractor Agreement. Should the Contractor require additional time to complete the Work, the Contractor shall document the reasons therefore and submit a written request for an extension of time within 20 days of the occurrence of the event alleged to be the cause of the delay, as provided in this Article and in Article VII of these General Conditions of the Contract. Failure to submit said written request within the time required by the preceding sentence shall preclude the Contractor from subsequently claiming any time extension due to said delay.
   
   **D.** If, in the opinion of the Designer or the Awarding Authority, the Contractor fails to comply with the Progress Schedule, the Awarding Authority may give the Contractor a notice specifying the time limits and performance standards that the Contractor is failing to meet whereupon (1) the Contractor shall, if the notice requires, discontinue all or any portion of the Work (which discontinuance shall neither terminate the Contract nor give the Contractor any claim for an increase in the Contract Price, damages, or an extension of any completion deadlines); or (2) at Contractor's sole cost increase the work force, equipment and plant, or any of them, employed on the whole or any part of the Work, to the extent required by such notice, and employ the same from day to day until the completion of the Work or such part thereof, or until the failure regarding the rate of progress, in the opinion of the Designer or the Awarding Authority, shall have been sufficiently corrected.
   
   **E.** If, in the opinion of the Awarding Authority, the Contractor fails to comply with the Progress Schedule, and whether or not the Awarding Authority shall have given the Contractor a notice described in D above, the Awarding Authority may (but shall not be required to) give the Contractor notice of such failure and five days to cure the same. Unless the Contractor shall within that five days take all necessary steps to do so (including, if the Awarding Authority requires, increasing its forces, equipment and plant) and continue to do so until in the opinion of the Awarding Authority the failure is corrected, the Awarding Authority may at the Contractor's expense and without terminating this Contract take exclusive or joint possession of all or a portion of the Site and employ and direct the labors of existing or such additional forces, equipment and plant as may in the Designer's or Awarding Authority's opinion be necessary to
insure the completion of the Work or such part thereof within the time specified in the Contract Documents or at the earliest possible date thereafter. The Awarding Authority may exercise its rights under this Article at any time and from time to time without waiving any of its rights under this Contract, at law or in equity, including, without limitation, the right to deem this Contract terminated or to order the Contractor to discontinue the Work at any time thereafter. The Contractor shall continue to perform the remaining Work under this Contract even if the Awarding Authority elects to have another contractor perform a portion of the Work under this Article.

F. The Awarding Authority shall deduct the cost of any actions the Awarding Authority takes under this Article from any amount then due or which might have become due to the Contractor under this Contract had the Contractor performed as required. On demand, the Contractor shall pay the Awarding Authority any amount by which the cost of completing all or any portion of the Work exceeds the amount attributable to that Work under the Contract Documents. The Awarding Authority's sole goal will be to complete the Work that it elects to complete within the time limits stated in the Contract or at the earliest possible date thereafter. Consequently, the Awarding Authority shall have no obligation to obtain competitive bids or the lowest cost for completing the Work or any part thereof. The Awarding Authority's election to complete all or part of the Work shall not release the Contractor from any liability for failure to complete the Work as the Contract Documents require, and shall not entitle the Contractor to a claim for an increase in the Contract Price or an extension of the time for completing the Work. If the cost that the Awarding Authority incurs in completing all or any portion of the Work is less than the amount that the Contract Documents attribute to that Work, the Awarding Authority will pay or credit the difference to the Contractor, less any other costs and expenses that the Awarding Authority incurs, including the cost of supervision, and the Designer’s and attorneys' fees and costs.

2. Failure to Complete Work on Time - Liquidated Damages.
   
   A. If liquidated damages are specified in the Owner - Contractor Agreement, the Awarding Authority has determined that its damages as a result of Contractor's failure to complete the Work to the point at which it qualifies for the issuance of a Certificate of Agency Use and Occupancy will be difficult or impracticable to ascertain. Accordingly, if the Work is not completed to such a point by the date specified in this Contract, the Contractor shall pay to the Awarding Authority the sum designated as liquidated damages in the Contract for each and every calendar day that the Contractor is in default in completing the Work to such point. Such moneys shall be paid as liquidated damages, not as a penalty, to cover losses and expenses to the Awarding Authority and/or the User Agency resulting solely from the fact that the Work is not completed on time.

   B. Similarly, if the Contract states that by a specified date a designated portion of the Work shall be prosecuted to the point at which it qualifies for the issuance of a Certificate of Agency Use and Occupancy, and if such portion has not been prosecuted to such point by said date, the Contractor shall pay to the Awarding Authority the sum designated in the Contract for each calendar day that the Contractor is in default in completing such portion of the Work to such point. Such moneys shall also be paid as liquidated damages not as a penalty, to cover
losses and expenses to the Owner resulting solely from the fact that the Work is not completed on time.

C. The Awarding Authority may recover such liquidated damages by deducting the amount thereof from any moneys due or that might become due the Contractor, and if such moneys shall be insufficient to cover the liquidated damages, then the Contractor or the Surety shall pay to the Awarding Authority the amount due.

D. Permitting the Contractor to continue and finish the Work or any portion of it after the time fixed in the Contract for its completion shall not be deemed as a waiver of any of the Owner's rights hereunder, at law or in equity.

E. Liquidated damages or a portion thereof may be waived by the Awarding Authority if the Contractor submits evidence satisfactory to the Awarding Authority that the delay was caused solely by conditions beyond the control of the Contractor and that the Awarding Authority has not suffered any damages as a result of said delay.

F. Failure by the Awarding Authority to specify a sum as liquidated damages in the Owner - Contractor Agreement, or the insertion of "N/A" or "none" in the space provided therein for liquidated damages, shall not be deemed a waiver of the Awarding Authority's right to recover actual damages arising from the Contractor's failure to complete the Work on time.

G. During the period when the Awarding Authority is assessing any cost associated with the failure to meet the substantial completion end date, the University of Massachusetts Amherst may create a Unilateral Change Order for an extension of dates to allow for any contractual obligations it has in association with this UMA project. This Unilateral Change Order should not in any way be construed by the contractor to be an extension to the actual contract substantial completion date.

3. Delays; Statutory Provisions (M.G.L. c. 30, s. 390).

A. Notwithstanding any provision of this Contract to the contrary, except as otherwise provided by law as set forth in paragraph B below, the Contractor shall not be entitled to increase the Contract Price or to receive damages on account of any hindrances or delays, avoidable or unavoidable; but if any delay is caused in the opinion of the Designer by the Awarding Authority, the Contractor shall be entitled to an extension of time. The length of the extension shall be sufficient in the opinion of the Designer for the Contractor to complete the Work. Although no delay shall increase the Contract Price, the Awarding Authority may require that any change in the date by which the Contractor must complete all or any part of the Work be processed on a standard Change Order form.

B. If a suspension, delay, interruption or failure to act of the Awarding Authority increases the cost of performance to any Subcontractor, that Subcontractor shall have the same rights against the Contractor with respect to such increase as the Contractor shall have against the Awarding Authority by virtue of (a) and (b) of M.G.L. c. 30, s. 390 set forth below, but nothing in provisions (a) and (b) shall alter any other rights which the Contractor or the subcontractor may have against each other. As used in the statutory language of (a) and (b) below, "contract" means this Contract, "general contractor" means the Contractor and "awarding authority" means the Awarding Authority:

"(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 or 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."

4. Use and Occupancy Prior to Final Acceptance.
   A. The Contractor agrees to the use and occupancy of the Project or any portion thereof before Final Acceptance of the Work by the Awarding Authority.
   B. The Awarding Authority and the User Agency will cooperate with the Contractor with respect to the completion of the Work by taking such reasonable steps as may be possible to avoid interference with the Contractor’s Work provided that they do not interfere with the proper functioning of the facility.
   C. The Contractor shall not be responsible for wear and tear or damage resulting solely from temporary occupancy.
   D. Use and occupancy of any part of the Work prior to Final Acceptance by the Awarding Authority shall not relieve the Contractor from maintaining the required payment and performance bonds and insurance (to the extent that insurance is required to be maintained after Substantial Completion) required by this Contract.

   A. When the Work, or portion thereof which the Awarding Authority agrees to accept separately has reached the state of Substantial Completion as shown on Approved payment request, the Contractor shall develop, with the participation of the Designer and the Awarding Authority, the Punch List identifying those items of unfinished or unacceptable Work that remain to be performed or corrected under the Contract.
   B. Before the Work shall be deemed completed to the point where it is ready for the issuance of a Certificate of Agency Use and Occupancy, the Contractor shall:
      (1) Provide Contractor’s proposed Punch List containing a statement of the reason for each item listed thereon;
      (2) Advise the Awarding Authority of proposed changes in insurance in accordance with the provisions of this Contract, and provide to the Awarding Authority evidence of Contractor’s Completed Operations insurance coverage to the extent required by the Contract Documents;

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(3) Execute and submit a notarized warranty on a form provided by the Awarding Authority meeting the requirements of Article IX of these General Conditions of the Contract, to commence upon the date of the issuance of the Certificate of Agency Use and Occupancy for the Work or the designated portion thereof, unless otherwise provided in the Certificate of Agency Use and Occupancy;

(4) Submit signed special warranties and warranties of longer than one year as required by the Contract Documents;

(5) Submit signed maintenance agreements for all portions of the Work specified to receive maintenance after the issuance of the Certificate of Agency Use and Occupancy;

(6) Submit all preliminary record Drawings the Awarding Authority and Designer written acknowledgements from appropriate User and documents and framed data in the forms required by the Contract Documents;

(7) Complete all items required to be completed by the Department of Public Safety and obtain a Certificate of Occupancy from the Department of Public Safety (or, if the Awarding Authority is a municipality, the building department having jurisdiction) and similar releases which permit the User Agency and the Awarding Authority full and unrestricted use of the areas claimed to be ready for occupancy;

(8) Deliver specified maintenance stocks of materials, required spare parts, and all special tools furnished by manufacturers to persons designated by the Awarding Authority and obtain written receipts for same;

(9) Make final changes of lock cylinders or cores and advise the Awarding Authority of the change of project security responsibility;

(10) Complete start-up of systems and instruct User Agency personnel on proper operation and routine maintenance of all systems and equipment; obtain and submit to Agency personnel that start-up and instruction have been completed;

(11) Remove all remaining temporary facilities that are no longer needed, surplus materials, and debris; (the Contractor shall not remove construction offices and trailers without the prior Approval of the Awarding Authority);

(12) Submit final utility meter readings and similar information and advise the User Agency and the Awarding Authority of the change of responsibility for utility charges and payments upon the issuance of the Certificate of Agency Use and Occupancy;

(13) Complete final clean-up of all Work, restoration of damaged finishes, and replacement of all damaged and broken glass not listed on the Contractor's Punch List.

(14) Complete such other items as may be called for in the Supplementary General Conditions, if any, or in the Specifications.

C. After completing the items specified in subsection A above, the Contractor shall make a written request for the Designer's inspection for a Certificate of Agency Use and Occupancy in accordance with the Contract Documents. The Designer shall review the submittals and the Work and shall either 1) have a state building official sign a Certificate of Agency Use and Occupancy or 2) notify the Contractor of incomplete and/or incorrect Work that must be completed and corrected prior to the issuance of the Certificate of Agency Use and Occupancy. The Designer shall notify the Contractor of any additions to the Punch List. In connection with
the execution of the Certificate of Agency Use and Occupancy the Designer shall assign dollar values to each item on the Punch List. Failure to include any incomplete or defective item on the Punch List shall not relieve the Contractor of the obligation to complete all Work in accordance with the Contract Documents.


A. Prerequisites for Final Acceptance. After the issuance of a Certificate of Agency Use and Occupancy for the entire Work, and after the Contractor has completed all of the Work required by this Contract, including Change Orders and Punch List Items, the Contractor shall submit the following completed items to the Awarding Authority together with such additional items as may be specified in the Contract Documents:

1. A completed Final Application for Payment showing a final accounting of all changes in the Work, on the form provided by the Awarding Authority.
2. Certification and satisfactory evidence that all taxes, fees, and similar obligations have been paid.
3. Consent of the Surety to Final Payment executed by applicable bonding companies.
4. Certified copy of the Punch List stating that the Contractor has completed or corrected every item listed.
5. Evidence of Contractor's continuing Completed Operations Insurance coverage to the extent required by the Contract Documents.
6. All final record Drawings and documents in the forms specified by the Contract Documents.
7. A notarized certification that all purchases made under the tax exemption certificate were legitimate and entitled to exemption.
8. Written certifications from the Department of Public Safety (or if the Awarding Authority is a municipality, the building department having jurisdiction) and the Designer to the effect that: a) the Work has been inspected for compliance with the Contract Documents and has satisfied the Department of Public Safety; b) all equipment and systems included in the Work have been tested in the presence of the Designer and are operational and satisfactory; c) the Work is completed and ready for final inspection.
9. Such other items as may be required by the Contract Documents.

B. Reinspection; Final Acceptance. After notification from the Contractor that all remaining contract exceptions, omissions and incompletions have been completed (with the exception of Contractor's continuing warranty, insurance, indemnification, and such other obligations as are intended by the terms of the Contract Documents to extend beyond the date of Final Acceptance), the Awarding Authority and the Designer shall inspect the Work to verify the completion of the same. If the Work is satisfactory, the Awarding Authority shall prepare a Certificate of Final Acceptance or shall notify Contractor of items which remain to be completed prior to Final Acceptance.
7. One-Year Warranty Repair List and Inspection.
Approximately 30 days prior to the expiration of the comprehensive one-year warranty period, the Contractor shall schedule an appointment with the Awarding Authority for a re-inspection of the Work with the Awarding Authority, and shall thereafter inspect the work at the time scheduled. Based on this inspection and on prior inspections, the Awarding Authority shall issue a "Warranty Repair List" of items to be corrected by the Contractor. The Contractor shall make the repairs and/or replacements listed within 30 days of the issuance of the Warranty Repair List unless otherwise agreed by the Awarding Authority in writing.

ARTICLE VII: CHANGES IN THE WORK

   A. No changes in the Work shall be made in absence of a Change Order defined in Article I of these General Conditions of the Contract, directing the Contractor to perform such changes. A request for a change in the provisions of this Contract may be submitted to the Awarding Authority by the Contractor, Designer, Project Manager, Resident Engineer or User Agency. The request must be made in writing and in accordance with the provisions of this Contract, Laws, and the procedures of the Awarding Authority.
   B. A Change Order may be issued by the Awarding Authority for changes in the Work within the scope of the Contract, including but not limited to, changes in: (1) the Plans and Specifications; (2) the method or manner of performance of the Work; (3) the Owner-furnished facilities, equipment, materials, services or Site; (4) the schedule for performance of the Work.
   C. The Contractor shall immediately perform any Change Order work that is ordered by the Awarding Authority.
   D. Whenever a Change Order is issued and said Change Order will cause a change in the Contractor’s cost, the Contractor or the Awarding Authority may request an equitable adjustment in the Contract Price. A request for such an adjustment shall be in writing and shall be submitted by the party making such claim to the other party before commencement of the pertinent work or within 10 days, thereafter.
   E. The Awarding Authority and the Contractor shall negotiate in good faith an agreement on an equitable adjustment in the Contract Price, and/or time if appropriate, before commencement of the pertinent work or as soon thereafter as is possible. In the absence of an agreement for an equitable adjustment, the Awarding Authority shall unilaterally determine the costs attributable to the change and provide the Contractor with a written notice to that effect. The Contractor may appeal the decision of the Awarding Authority within thirty days of receipt of said notice, to the chief executive official of the Awarding Authority or his designee, and the Contractor shall have the right to such further appeal as is provided in M.G.L. c.30, s. 39Q set forth in Section 4.D of this Article VII. However, if the Contractor shall exercise its rights to appeal the decision of the Awarding Authority as aforesaid, the Contractor shall be required to engage in the mandatory mediation procedures set forth in Section 5 of this Article VII.
   F. During the negotiation of an equitable adjustment in the Contract Price, the Contractor shall, if requested, provide the Awarding Authority with all cost and pricing data used by him in computing the amount of the equitable adjustment, and the Contractor shall certify that the
pricing data used was accurate, complete and current. If the Awarding Authority subsequently determines that the data submitted by the Contractor was incomplete, incorrect or not current, the Awarding Authority may exclude such data from consideration under the equitable adjustment request.


   A. Equitable adjustments in the Contract Price shall be determined according to one of the following methods, or a combination thereof, as determined by the Awarding Authority: (1) fixed price basis, provided that the fixed price shall be inclusive of items (a) through (e) below and shall be computed in accordance with those provisions; (2) estimated lump sum basis to be adjusted in accordance with Contract unit prices or other agreed upon unit prices provided that the unit prices shall be inclusive of all costs related to such equitable adjustment; (3) time and materials basis to be subsequently adjusted on the basis of actual costs (but subject to a predetermined "not to exceed limit") calculated as follows:

      (a) the direct cost (or credit) for labor at the minimum wage rates established for this Contract pursuant to M.G.L. c. 149, s 26-27H, and the direct cost for material and use of equipment;

      (b) plus (or minus) the cost of Workmen’s Compensation Insurance, Liability Insurance, Federal Social Security and Massachusetts Unemployment Compensation, or as an alternative the Contractor may elect to use a flat 30% of the total labor rate computed in accordance with subparagraph (a) above;

      (c) plus an allowance equal to 20% of the amount of (a) above for overhead, superintendence and profit; (In the case of Item 1 work, which is the work of the Contractor and all his non-filed Subcontractors, said 20% allowance shall be paid to the Contractor and said non-filed Subcontractors shall agree upon the distribution of this amount as a matter of contract between them. In the case of Item 2 work, which is work performed by a Subcontractor filed pursuant to M.G.L. c. 149, s. 44F, said 20% allowance shall be paid to the filed Subcontractor, it being understood that this provision does not apply to other Subcontractors including sub-Subcontractors listed under paragraph E of the form for sub-Bid);

      (d) plus, for work performed by a Subcontractor filed pursuant to M.G.L. c. 149, s. 44F, an additional allowance equal to 7% of the sum of (a) through (c) above as full compensation to the Contractor for processing forms and assuming full responsibility for the faithful performance of such work by said filed Subcontractor(s);

      (e) plus (or minus) the actual direct additional premium costs and expenses incurred as a result of collective bargaining agreements or other agreements between organized labor and employers, and plus (or minus) the actual direct premium cost of payment and performance bonds required of Contractor and filed Subcontractors for this Contract.

   B. If the net change is an addition to the Contract Price, it shall include the Contractor’s overhead, superintendence and profit. On any change that involves a net credit, no allowance for overhead, superintendence and profits shall be included. For any change that does not include labor performed or materials installed in the project, there will be no markup for the Contractor’s overhead, superintendence, and profit, even though there may be a net increase
in the Contract Price. Charges for small tools known as “tools of the trade” are not to be computed in the amount of any change in the Contract Price.

C. Statutory Contract adjustments made under the provisions of M.G.L. c. 149, s.44F shall not be considered Change Orders and shall not entitle the Contractor to any adjustments for overhead, profit, and superintendence, although the Awarding Authority may require that such Contract adjustments be processed on standard Change Order and equitable adjustment forms.

3. **Work Performed Under Protest.**

The Contractor agrees to perform all Work as directed by the Awarding Authority, and if the Project Manager determines that certain Work that the Contractor believes to be or to warrant a Change Order under this Article does not represent a change in the Work, the Contractor shall perform said Work. The Contractor shall be deemed to have concurred with the Project Manager’s determination as aforesaid unless the Contractor shall perform Work under protest in compliance with the following sub-paragraphs (1) and (2) below:

1. If the Contractor claims compensation for a change in the Work that is not deemed by the Project Manager to be a change or to warrant additional compensation as claimed by the Contractor, the Contractor shall on or before the first working day following the commencement of any such work or the sustaining of any such damage submit to the Designer, Resident Engineer and the Awarding Authority a written statement of the nature of such work or claim. The Contractor shall not be entitled to additional compensation for any work performed or damage sustained for which written notice is not given within the time limit specified in the preceding sentence, even though similar in character to work or damage with respect to which notice is timely given.

2. On or before the second working day after the commencement of such work or the sustaining of such damage, and daily thereafter, the Contractor shall file to the extent possible with the Resident Engineer, the Designer, and the Awarding Authority, itemized statements of the details and costs of such work performed or damage sustained. The Contractor shall use the DCAM Daily Time and Materials Report found in DCAM Form 13 to record all labor and material used. If the Contractor shall fail to make such statements to the extent possible, then the Contractor shall not be entitled to additional compensation for any such work or damages.

4. **False Claims, Statutory Provisions Regarding Changes.**

A. Criminal Penalties: The Contractor’s attention is directed to M.G.L. c. 30, s. 39I which provides criminal penalties for unauthorized deviations from the Plans and Specifications, and to M.G.L. c. 30, s. 39J and M.G.L. c. 7, s. 42E-42I. The Contractor’s attention is also directed to M.G.L. 266, s. 67B which provides criminal penalties for false claims by Contractor under this Contract:

"Whoever makes or presents to any employee, department, agency or public instrumentality of the commonwealth, or of any political subdivision thereof, any claim upon or against any department, agency, or public instrumentality of the commonwealth, or any political subdivision thereof, knowing such claim to be false, fictitious, or fraudulent, shall be punished by a fine of not more than ten thousand dollars or by imprisonment in the state prison for not
more than five years, or in the house of correction for not more than two and one-half years, or both."

B. Differing Site Conditions (M.G.L. c. 30, s. 39N): "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."

C. Timely Decision By Awarding Authority (M.G.L. c. 30, s. 39P): "Every contract subject to section thirty-nine M of this chapter or section forty-four A of chapter one hundred forty-nine which requires the awarding authority, any official, its architect or engineer to make a decision on interpretation of the specifications, approval of equipment, material or any other approval, or progress of the work, shall require that the decision be made promptly and, in any event, no later than thirty days after the written submission for decision; but if such decision requires extended investigation and study, the awarding authority, the official, architect or engineer shall, within thirty days after the receipt of the submission, give the party making the submission written notice of the reasons why the decision cannot be made within the thirty day period and the date by which the decision will be made."

D. Change Order / Contract Interpretation Appeal Procedure (M.G.L. c. 30, s. 39Q): The following provisions apply to every contract awarded by any state agency as defined by M.G.L. c. 7, s. 39A for the construction, reconstruction, alteration, remodeling, repair or demolition of any capital facility as defined by the aforesaid section 39A:

"(a) Disputes regarding changes in and interpretations of the terms or scope of the contract and denials of or failures to act upon claims for payment for extra work or materials shall be resolved according to the following procedures, which shall constitute the exclusive method for resolving such disputes. Written notice of the matter in dispute shall be submitted promptly by the claimant to the chief executive official of the state agency which awarded the contract or his designee. No person or business entity having a contract with a state agency shall delay, suspend, or curtail performance under that contract as a result of any dispute subject to this section. Any disputed order, decision or action by the agency or its authorized representative shall be fully performed or complied with pending resolution of the dispute."
“(b) Within thirty days of submission of the dispute to the chief executive official of the state agency or his designee, he shall issue a written decision stating the reasons therefore, and shall notify the parties of their right of appeal under this section. If the official or his designee is unable to issue a decision within thirty days, he shall notify the parties to the dispute in writing of the reasons why a decision cannot be issued within thirty days and of the date by which the decision shall issue. Failure to issue a decision within the thirty-day period or within the additional time period specified in such written notice shall be deemed to constitute a denial of the claim and shall authorize resort to the appeal procedure described below. The decision of the chief executive official or his/her designee shall be final and conclusive unless an appeal is taken as provided below.

“(c) Within twenty-one calendar days of the receipt of a written decision or of the failure to issue a decision as stated in the preceding subparagraph, any aggrieved party may file a notice of claim for an adjudicatory hearing with the division of hearing officers or the aggrieved party may file an action directly in a court of competent jurisdiction and shall serve copies thereof upon all other parties in the form and manner prescribed by the rules governing the conduct of adjudicatory proceedings of the division of hearing officers. In the event an aggrieved party exercises his option to file an action directly in court as provided in the previous sentence, the twenty-one day period shall not apply to such filing and the period of filing such action shall be the same period otherwise applicable for filing a civil action in superior court. The appeal shall be referred to a hearing officer experienced in construction law and shall be prosecuted in accordance with the formal rules of procedure for the conduct of adjudicatory hearings of the division of hearing officers, except as provided below. The hearing officer shall issue a final decision as expeditiously as possible, but in no event more than one hundred and twenty calendar days after conclusion of the adjudicatory hearing, unless the decision is delayed by a request for extension of time for filing post-hearing briefs or other submissions assented to by all parties. Whenever, because an extension of time has been granted, the hearing officer is unable to issue a decision within one hundred and twenty days, s/he shall notify all parties of the reasons for the delay and the date when the decision will issue. Failure to issue a decision within the one hundred and twenty-day period or within the additional period specified in such written notice shall give the petitioner the right to pursue any legal remedies available to him without further delay.

“(d) When the amount in dispute is less than ten thousand dollars, a contractor who is party to the dispute may elect to submit the appeal to a hearing officer experienced in construction law for expedited hearing in accordance with the informal rules of practice and procedure of the division of hearing officers. An expedited hearing under this subparagraph shall be available at the sole option of the contractor. The hearing officer shall issue a decision no later than sixty days following the conclusion of any hearing conducted pursuant to this subparagraph. The hearing officer’s decision shall be final and conclusive, and shall not be set aside except in cases of fraud.”

5. Mandatory Mediation.
In the case of every dispute where the dollar amount in dispute (or the estimated dollar value of the extension of time in dispute) is $50,000 or more and the Contractor appeals the decision of the chief executive officer of the Awarding Authority or his designee described in Section 4.B above, the Awarding Authority and the Contractor shall engage in good faith in a non-binding
mediation process, which process shall be concluded within sixty days from the date that the Contractor files an appeal from said decision as provided in Section 4.B above. In the case of such disputes where the dollar amount in dispute (or the estimated dollar value of the extension of time in dispute) is $500,000 or more, the parties shall, if the mediation process fails, submit the dispute to a third-party Neutral or Dispute Review Board which shall within sixty days render a non-binding advisory opinion. Unless the parties have previously agreed in writing to a process for submitting disputes to mediation or a Dispute Review Board, the Awarding Authority shall determine in its reasonable discretion the procedures to be followed and shall give the Contractor notice of the same in writing within 7 days of the date that the Awarding Authority receives notice of the Contractor's appeal from the decision of the chief executive officer of the Awarding Authority or his designee. The cost of the services of any mediator selected by one party to this Contract shall be borne by the party making the selection. The cost of the services of any mediator selected jointly by the parties to this Contract or jointly by mediators selected by the parties to this Contract shall be borne equally by the Contractor and the Awarding Authority.

ARTICLE VIII: PAYMENT PROVISIONS

1. Schedule of Values.
Before the first application for payment the Contractor shall submit to the Designer and the Awarding Authority a schedule of values allocated to various portions of the Work in sufficient detail to reflect the various major components of each trade (with filed Subcontractors as well as MBE/WBE noted), including quantities when requested, aggregating the total Contract Price and divided so as to facilitate payments for work under each section of the Specifications. The schedule shall be prepared in such form and supported by such data to substantiate its accuracy as the Designer or the Awarding Authority may require. Each item in the schedule shall include its proper share of overhead and profit. When Approved by the Designer and the Awarding Authority, it shall constitute the Schedule of Values and shall be used only as a basis for the Contractor's requests for payments.

2. Payment Liabilities of Contractor.
   A. The Contractor shall pay to the Owner all expenses, losses and damages, as determined by the Awarding Authority or the Designer, incurred in consequence of any default, defect, omission or mistake of the Contractor or his employees or Subcontractors or the making good thereof.
   B. If the Work (or a portion thereof) is not completed to Substantial Completion and the Contractor has not satisfied the requirements for the issuance of a Certificate of Agency Use and Occupancy by the date specified in Article 2 of the Owner - Contractor Agreement, the Contractor shall pay to the Owner liquidated damages as provided in Article VI, Section 2 of these General Conditions of the Contract.
3. Retention of Moneys by Awarding Authority.

A. The Awarding Authority may keep any moneys which would otherwise be payable at any time hereunder, and apply the same, or so much as may be necessary therefore, to (1) the Owner's expenditures for the Contractor's account, (2) to secure the Awarding Authority's remedies against the Contractor for the Contractor's breach of its obligations under this Contract or the breach of any person performing any part of the Work and (3) the payment of any expenses, losses or damages incurred by the Awarding Authority or any agency of the Commonwealth as a result of the failure of the Contractor to perform its obligations hereunder. The Awarding Authority may retain, until all claims are settled, such moneys as the Awarding Authority estimates to be the fair value of the Awarding Authority's claims against the Contractor, and of all claims for labor performed or furnished and for materials used or employed in or in connection with the Work and for the rental of vehicles, appliances and equipment employed and for the employment of substitute contractors and labor in connection with the Work filed in accordance with M.G.L. c. 30, s. 39A and s. 39F. The Awarding Authority may make such settlements and apply there to any moneys retained under this Contract.

B. The Contractor shall each week examine all claims so filed, and if the same are in any respect incorrect or do not correctly show the amount due from the Contractor to the claimant for such labor and materials, the Contractor shall forthwith file with the Awarding Authority a separate written statement of all inaccuracies in each claim and of the correct amount due from the Contractor to each claimant therefore, and shall immediately file a statement of all payments thereafter made to such claimants. Each such statement shall be sworn to and contain a detailed breakdown required by M.G.L. c. 30 s. 39F(d) and (e). Unless such statements are so filed by the Contractor the amount shown by the claims filed shall at the option of the Awarding Authority be conclusively deemed to be the accurate amount due from the Contractor therefore in all accounting with the Awarding Authority. If the moneys retained under this Contract are insufficient to pay the sums found by the Awarding Authority to be due under the claims for labor and materials filed as aforesaid, the Awarding Authority may, at its discretion, pay the same, and the Contractor shall repay to the Awarding Authority all sums paid out. The Awarding Authority may also at its discretion use any moneys retained, due or to become due under this Contract, for the purpose of paying for both labor and materials used or employed in the Work for which claims have not been filed with the Awarding Authority.

C. No moneys retained under the provisions of this Article shall be held to be statutory security for the payment of claims filed in accordance with the provisions of M.G.L. c. 149, s. 29, as amended, for which security is provided by bond.

4. Applications for Payment.

A. The Contractor shall, once in each month for the preceding months, on the day of the month corresponding to the day of the month specified in the Notice to Proceed referenced in Article 2 of the Owner - Contractor Agreement, on forms provided and in the manner prescribed by the Awarding Authority, submit to the Awarding Authority a statement showing the total amount of Work done to the time of such estimate and the value thereof as approved by the Resident Engineer and the Designer. It shall be the sole responsibility of the Contractor to deliver or cause to be delivered to the Resident Engineer (the "designee" as
provided by M.G.L. c. 30, s. 39K), said periodic estimate in proper form, approved as provided above and arithmetically correct. All periodic estimates shall contain such certifications and other evidence supporting the Contractor’s right to payment as the Awarding Authority may require, including without limitation, lien waivers and other evidence, on such forms as the Awarding Authority may require, establishing that title to the equipment or materials is unencumbered and has been transferred to the Owner. If there is no Resident Engineer assigned to the Contract, the Designer shall be the designee. If there is neither a Resident Engineer nor a Designer the designee shall be a person designated by the Awarding Authority at the project field office or alternatively the home office of the Awarding Authority. The Contractor shall include in such periodic estimate only such materials as are incorporated in the Work, except as provided in paragraph C below. The Awarding Authority shall retain five percent of such estimated value as part security for the completion of the Work and shall pay to the Contractor while carrying on the Work the balance not retained as aforesaid, subject to the Approval of the Awarding Authority after deducting therefrom all previous payments and all sums to be kept under the provisions of this Contract.

B. Each periodic estimate shall constitute the Contractor’s representation that (1) the payment then requested to be disbursed has been incurred by the Contractor on account of the Work and is justly due to Subcontractors or, to the Contractor in the case of other Work performed by the Contractor on account thereof, (2) the materials, supplies and equipment for which Application for Payment is being submitted have been installed or incorporated into the Work or have been stored at the Site or at such off Site storage locations as the Awarding Authority shall have Approved, (3) the materials, supplies and equipment are insured in accordance with the provisions of this Contract, (4) the materials, supplies and equipment are owned by the Owner and are not subject to any liens or encumbrances, (5) the Work which is the subject of such periodic estimate has been performed in accordance with the Contract Documents and (6) that all due and payable bills with respect to the Work have been paid to date or shall be paid from the proceeds of such periodic estimate. The Contractor’s attention is directed to the criminal penalties for false claims referenced in paragraph A above.

C. The Contractor may include in a periodic estimate the value of materials or equipment delivered at the Site (or at some location agreed to in writing) only upon delivery to the Awarding Authority of: (1) an acceptable transfer of title on the form provided by the Awarding Authority; (2) written certification by the Contractor (or applicable subcontractor) on the form provided by the Awarding Authority that the Contractor (or the Subcontractor which executed the transfer of title) is the lawful owner and that the materials or equipment are free from all encumbrances, accompanied by receipted invoices or other acceptable proof of prior payment for such materials; (3) a stored materials insurance binder that covers the materials for which payment is requested, that names the Owner as an insured party should the stored materials be subjected to any casualty, loss, or theft prior to their inclusion in the Work. The material(s) or equipment must, in the judgment of the Designer (1) meet the requirements of the Contract, including prior shop drawing, product data, and sample approval, (2) be ready for use, and (3) be properly stored by the Contractor and be adequately protected until incorporated into the Work. See also Article V.5.C of these General Conditions of the Contract concerning the cost of inspections.

D. The Awarding Authority may make changes in any periodic estimate submitted by the Contractor in accordance with M.G.L. c.30, s. 39K (see below) and the payment due shall be
computed in accordance with the changes so made. The provisions of said section 39K shall govern payments on which the Awarding Authority has made changes.

E. No certificate for payment and no progress payment shall constitute acceptance of Work that is not in accordance with the Contract Documents.

F. The Contractor and all Subcontractors furnishing labor on this Contract agree to furnish certified payroll reports, at no additional expense to the Awarding Authority. The Awarding Authority may at all reasonable times audit such reports.

5. Periodic Payments (M.G. L. c. 30, s. 39K).
The Awarding Authority shall make payment to the Contractor in accordance with M.G.L. c. 30, s. 39K, which provides as follows:

"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 demands 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 than 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 period 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 change 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 and 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 sub-subtrade listed in sub-bid form as required by specifications and column listing the amount paid to each filed subcontractor as of the date of 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 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

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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."

6. Payment of Subcontractors (M.G.L. c. 30, s. 39F).
The Contractor shall make payments to Subcontractors in accordance with M.G.L c.30, s. 39F which is quoted in this section below. For the purposes of this Contract, the word "forthwith" appearing in paragraph (1)(a) of the quoted provision shall be deemed to mean "within five (5) business days."

"1(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 (1) and (2) 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 reply 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 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 deduction 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 (5) in an interest-bearing joint account in the names of the general contractor and the subcontractor in a bank in Massachusetts selected by the awarding authority or agreed upon by the general contractor and the subcontractor and shall notify the general contractor and the subcontractor of the date of the deposit and the bank receiving the deposit. The bank shall pay the amount in the account, including accrued interest, as provided in an agreement between the general contractor and the subcontractor or as determined by decree of a court of competent jurisdiction.

(g) All direct payments and all deductions from demands for direct payments deposited in an interest bearing account or accounts in a bank pursuant to subparagraph (6) 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 (6) 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 (1) or if the general contractor does not submit a periodic estimate for the value of the labor or materials performed or furnished by the subcontractor and the subcontractor does not receive payment for same when due less the deductions provided for in subparagraph (1), the subcontractor may demand direct payment by following the procedure in subparagraph (4) and the general contractor may file a sworn reply 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).

(2) Any assignment by a subcontractor of the rights under this section to a surety company furnishing a bond under the provisions of section twenty-nine of chapter one hundred forty-nine shall be invalid. The assignment and subrogation rights of the surety to amounts included in a demand for direct payment which are in the possession of the awarding authority or which are on deposit pursuant to subparagraph (6) shall be subordinate to the rights of all subcontractors who are entitled to be paid under this section and who have not been paid in full.

(3) "Subcontractor" as used in this section (I) for contracts awarded as provided in sections forty-four A to forty-four L, inclusive, of chapter one hundred forty-nine shall mean a person who files a sub-bid and received a subcontract as a result of that filed sub-bid or who is approved by the awarding authority in writing as a person performing labor or both performing labor and furnishing materials pursuant to a contract with the general contractor, (ii) for contracts awarded as provided in paragraph (1) of section thirty-nine M of chapter thirty shall mean a person approved by the awarding authority in writing as a person performing labor or both performing labor and furnishing materials pursuant to a contract with the general contractor, and (iii) for contracts with the commonwealth not awarded as provided in sections forty-four A to forty-four L, inclusive, of chapter one hundred forty-nine shall also mean a person contracting with the general contractor to supply materials used or employed in a public works project for a price in excess of five thousand dollars.

(4) A general contractor or a subcontractor shall enforce a claim to any portion of the amount of a demand for direct payment deposit as provided in subparagraph (6) by a petition in equity in the superior court against the other and the bank shall not be a necessary party. A subcontractor shall enforce a claim for direct payment or a right to require a deposit as provided in subparagraph (6) by a petition in equity in the superior court against the awarding authority and the general contractor shall not be a necessary party. Upon motion of any party the court shall advance for speedy trial any petition filed as provided in this paragraph. Sections fifty-nine and fifty-nine B of chapter two hundred thirty-one shall apply to such petitions. The court shall enter an interlocutory decree upon which execution shall issue for any part of a claim found due pursuant to sections fifty-nine and fifty-nine B and, upon motion of any party, shall advance for speedy trial the petition to collect the remainder of the claim. Any party aggrieved by such interlocutory decree shall have the right to appeal therefrom as from a final decree. The court shall not consolidate for trial the petition of any subcontractor with the petition of one or more subcontractors or the same general Contract unless the court finds that a substantial portion of the evidence of the same events during the course of construction (other than the fact that the claims sought to be consolidated arise under the same general contract) is applicable to the
petitions sought to be consolidated and that such consolidation will prevent unnecessary duplication of evidence. A decree in any such proceeding shall not include interest on the disputed amount deposited in excess of the interest earned for the period of any such deposit. No person except a subcontractor filing a demand for direct payment for which no funds due the general contractor are available for direct payment shall have a right to file a petition in court of equity against the awarding authority claiming a demand for direct payment is premature and such subcontractor must file the petition before the awarding authority has made a direct payment to the subcontractor and has made a deposit of the disputed portion as provided in part (iii) of subparagraph (5) and in subparagraph (6).

(5) In any petition to collect any claim for which a subcontractor has filed a demand for direct payment the court shall, upon motion of the general contractor, reduce by the amount of any deposit of a disputed amount by the awarding authority as provided in part (iii) of subparagraph (5) and in subparagraph (6) any amount held under a trustee writ or pursuant to a restraining order or injunction.”

7. Contracts for Public Works Governed by M.G.L. c. 30, s. 39G:
The following statutory provision applies only to contracts for public works governed by M.G.L. c. 30, s. 39G: “Upon substantial completion of the work required by a contract with the commonwealth, or any agency or political subdivision thereof, for the construction, reconstruction, alteration, remodeling, repair or improvement of public ways, including bridges and other highway structures, sewers and, water mains, airports and other public works, the contractor shall present in writing to the awarding authority its certification that the work has been substantially completed. Within twenty-one days thereafter, the awarding authority shall present to the contractor either a written declaration that the work has been substantially completed or an itemized list of incomplete or unsatisfactory work items required by the contract sufficient to demonstrate that the work has not been substantially completed. The awarding authority may include with such list a notice setting forth a reasonable time, which shall not in any event be prior to the contract completion date, within which the contractor must achieve substantial completion of the work. In the event that the awarding authority fails to respond, by presentation of a written declaration or itemized list as aforesaid, to the contractor’s certification within the twenty-one day period, the contractor’s certification shall take effect as the awarding authority’s declaration that the work has been substantially completed.
Within sixty-five days after the effective date of a declaration of a substantial completion, the awarding authority shall prepare and forthwith send to the contractor for acceptance a substantial completion estimate for the quantity and price of the work done and all but one percent retainage on that work, including quantity, price and all but one percent retainage for the undisputed part of each work item and extra work item in dispute but excluding the disputed part thereof, less the estimated cost of completing all incomplete and unsatisfactory work items and less the total periodic payments made to date for the work. The awarding authority also shall deduct from the substantial completion estimate an amount equal to the sum of all demands for direct payments filed by subcontractors and not yet paid to subcontractors or deposit d in joint accounts pursuant to section thirty-nine F, but no contract subject to said section thirty-nine F shall contain any other provision authorizing the awarding authority to deduct any amount by virtue of claims asserted against the Contract by subcontractors, material suppliers or others.

If the awarding authority fails to prepare and send to the contractor any substantial completion estimate required by this section on or before the date herein above set forth, the awarding authority shall pay to the contractor interest on the amount which would have been due to the
contractor pursuant to such substantial completion estimate at the rate of three percentage points above the rediscount rate then charged by the Federal Reserve Bank of Boston from such date to the date on which the awarding authority sends that substantial completion estimate to the contractor for acceptance or to the date of payment therefor, whichever occurs first. The awarding authority shall include the amount of such interest in the substantial completion estimate.

Within fifteen days after the effective date of the declaration of substantial completion, the awarding authority shall send to the contractor by certified mail, return receipt requested, a complete list of all incomplete or unsatisfactory work items, and, unless delayed by causes beyond his control, the contractor shall complete all such work items within forty-five days after the receipt of such list or before the then contract completion date, whichever is later. If the contractor fails to complete such work within such time, the awarding authority may, subsequent to seven days’ written notice to the contractor by certified mail, return receipt requested, terminate the contract and complete the incomplete or unsatisfactory work items and charge the cost of same to the contractor.

Within thirty days after receipt by the awarding authority of a notice from the contractor stating that all of the work required by the contract has been completed, the awarding authority shall prepare and forthwith send to the contractor for acceptance a final estimate for the quantity and price of the work done and all retainage on that work less all payments made to date, unless the awarding authority’s inspection shows that work items required by the contract remain incomplete or unsatisfactory, or that documentation required by the contract has not been completed. If the awarding authority fails to prepare and send to the contractor the final estimate within thirty days after receipt of notice of completion, the awarding authority shall pay to the contractor interest on the amount which would have been due to the contractor pursuant to such final estimate at the rate hereinabove provided from the thirtieth day after such completion until the date on which the awarding authority sends the final estimate to the contractor for acceptance or the date of payment therefore, whichever occurs first, provided that the awarding authority’s inspection shows that no work items required by the contract remain incomplete or unsatisfactory. Interest shall not be paid hereunder on amounts for which interest is required to be paid in connection with the substantial completion estimate as hereinabove provided. The awarding authority shall include the amount of the interest required to be paid hereunder in the final estimate.

The awarding authority shall pay the amount due pursuant to any substantial completion or final estimate within thirty-five days after receipt of written acceptance for such estimate from the contractor and shall pay interest on the amount due pursuant to such estimate at the rate hereinabove provided from that thirty-fifth day to the date of payment. Within 15 days, 30 days in the case of the commonwealth, after receipt from the contractor, at the place designated by the awarding authority, if such place is designated, of a periodic estimate requesting payment of the amount due for the preceding periodic estimate period, the awarding authority shall make a periodic payment to the contractor for the work performed during the preceding periodic estimate period 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. The awarding authority shall include with each such payment interest on the amount due pursuant to such periodic estimate at the rate herein above provided from the due date. In the case of periodic payments, the contracting authority may deduct from its payment a retention based on its estimate of the fair value of its claims against the contractor, a retention for direct payments to subcontractors based on demands for same in accordance with the provisions of section thirty-nine F, and a retention to secure satisfactory performance of the contractual work not exceeding five per cent of the approved amount of any periodic payment, and the same right to retention shall apply to bonded subcontractors entitled to direct payment under section thirty-nine F of chapter thirty; provided, that a five per cent value of all items that are planted in the ground shall be deducted from the periodic payments until final acceptance.

No periodic, substantial completion or final estimate or acceptance or payment thereof shall bar a contractor from reserving all rights to dispute the quantity and amount of, or the failure of the awarding authority to approve a quantity and amount of all or part of any work item or extra work item.

Substantial completion, for the purposes of this section, shall mean either that the work required by the contract has been completed except for work having a contract price of less than one percent of the then adjusted total contract price, or substantially all of the work has been completed and opened to public use except for minor incomplete or unsatisfactory work items that do not materially impair the usefulness of the work required by the contract.”

8. **Final Payment; Release of Claims by Contractor.**

Upon Final Acceptance of the Work the Contractor shall be entitled to payment of the balance of the Contract Price. Final payment shall be as provided in this Article above and in accordance with any process set forth in the Supplementary General Conditions. The Contractor agrees to execute a Certificate of Final Inspection, Release (with Contractor’s own exceptions listed thereon) and Acceptance as a condition precedent to Final Payment. The acceptance by the Contractor of the Final Payment made as aforesaid, or the execution of the Certificate of Final Acceptance by the Contractor, shall constitute a release of the Owner, the Awarding Authority, the Designer, and every member and agent of any of them, from all claims of and liability to the Contractor for anything done or furnished for or relating to the Work, or for any act or neglect of the Owner, the Designer, or of any person relating to or affecting the Work, except the claim against the Owner or the Designer for the remainder, if any there be, of the amounts set forth by the Contractor in the Certificate of Final Inspection, Release and Acceptance. Final Acceptance shall not relieve Contractor of the requirements of Articles IX, XIV, and XV of these General Conditions of the Contract, or of other provisions of this Contract, to the extent that the same are intended to survive Final Acceptance.

**ARTICLE IX. GUARANTEES AND WARRANTIES**
1. **General Warranty.**
If at any time during the period of one (1) year from the date of the issuance of the Certificate of Agency Use and Occupancy by the Awarding Authority or the date of Final Acceptance, whichever occurs first, any part of such Work shall in the reasonable opinion of the Awarding Authority be defective or require replacing or repairing, or damage to other property of the Owner is caused by any defect in the Work, the Awarding Authority shall notify the Contractor in writing to make the required repairs or replacements and repair such damage. If the Contractor shall neglect to commence such repairs or replacements to the satisfaction of the Awarding Authority within ten (10) days from the date of the giving of such notice, then the Awarding Authority may employ other persons to make the same. The Contractor agrees, upon demand, to pay to the Awarding Authority all amounts which it expends for such repairs, replacements, and/or damages. During this one-year guarantee period any corrective work shall be performed under all the applicable terms of this Contract, and if Change Orders are issued in accordance with the terms of this Contract, the Contractor shall be entitled to compensation for special insurance, as required. This one-year guarantee shall not limit any express guaranty or warranty provided elsewhere in the Contract.

2. **Special Guarantees and Warranties.**
   A. The Contractor's obligation to correct Work as set forth in paragraph 1 above is in addition to, and not in substitution of, such guarantees or warranties as may be required in the various sections of the Specifications.
   B. Guarantees and warranties required in the various sections of the Specifications must be delivered to the Designer before final payment to the Contractor may be made, or in the case of guarantees and warranties which originate with a subcontractor’s section of the Work, before final payment for the amount of that subtrade or for the phase of Work to which the guarantee or warranty relates.
   C. The failure to deliver a required guarantee or warranty shall constitute a failure to fully complete the Work in accordance with the Contract Documents.

**ARTICLE X: MISCELLANEOUS LEGAL REQUIREMENTS.**

1. **Contractor to be Informed.**
The Contractor shall inform itself of all existing and future Laws in any manner affecting those engaged or employed in the Work, or the materials used or employed in the Work, or in any way affecting the conduct of the Work, and of all orders and decrees of bodies or tribunals having any applicable jurisdiction or authority over the Work.

2. **Compliance with all Laws.**
The Contractor shall cause all persons employed in the performance of the Work to comply with, all existing and future Laws, including but not limited to those set forth below:
   A. **Corporate Disclosures.** The Contractor, if a foreign corporation, shall comply with M.G.L. c. 181, s. 3 and s. 5, and M.G.L. c. 30, s.39L.
A ¾. Employment Eligibility Verification. The Contractor shall comply with Federal Department of Homeland Security Requirements in hiring any and all “Employees” to be employed in the Project who are required to be listed in the certified payroll reports for the Project. Such compliance shall include, but not be limited to the faithful completion of the Federal Department of Homeland Security Form I-9 process by the Contractor for each of its Employees. The Contractor shall execute a Certificate of Compliance with Employment Eligibility Verification Requirements (I-9 Certificate) with the execution of its Contract. The Contractor shall require each of its subcontractors and sub subcontractors to execute and provide to Contractor an I-9 Certificate with the execution of each subcontract, and Contractor shall immediately provide a copy to Awarding Authority. Contractor acknowledges that the weekly workforce report form contained in the contract documents, which must be submitted by the Contractor on a weekly basis, contains a statement that the Form I-9 process was faithfully completed for all employees listed on the weekly certified payroll report. By the signature of the Contractor’s Authorized Signatory on the I-9 Certificate, the Contractor certifies under the pains and penalties of perjury that the Contractor shall not knowingly use undocumented workers in connection with the performance of this contract; that pursuant to federal requirements, the Contractor shall verify the immigration status of all workers assigned to the contract without engaging in unlawful discrimination; and that the Contractor shall not knowingly or recklessly alter, falsify, or accept altered or falsified documents from any such worker. The Contractor understands and agrees that breach of any of these terms during the period of a contract may be regarded as a material breach, subjecting the Contractor to sanctions, including but not limited to monetary penalties, withholding of payments, contract suspension or termination.

B. Veterans Preference. In the employment of mechanics and apprentices, teamsters, chauffeurs, and laborers in the performance of Work in the Commonwealth, 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 and who are veterans as defined M.G.L. c. 4, s. 7 (34), and who are qualified to perform the work to which the employment relates; 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.

C. Prevailing Wages. The Contractor shall comply with M.G.L. c. 149, s. 26-7H. The prevailing wage schedule is found in Exhibit A to the Instructions to Bidders, listing the prevailing minimum wage rates that must be paid to all workers employed in the Work. The Awarding Authority is not responsible for any errors, omissions, or misprints in the said schedule. Such Schedule shall continue to be the minimum rate wages payable to workers employed in the Work throughout the term of this Contract, subject to the exceptions provided in M.G.L c.149, s. 27 yearly review of wage rates. The Contractor shall not have any claim for extra compensation from the Owner if the actual wages paid to workers employed in the Work exceeds the rates listed on the schedule or as otherwise provided by law. The Contractor shall cause a copy of said Schedule to be kept in a conspicuous place at the Site during the term of the Contract. If reserve police officers are employed by the Contractor, they shall be paid the prevailing wage of regular police officers. (See M.G.L c.149, s. 34B).

D. Payroll Records and Statement of Compliance. The Contractor shall comply and shall cause its Subcontractors to comply with Massachusetts General Law c. 149, s. 27B, which requires that a true and accurate record be kept of all persons employed on the a project for
which the prevailing wage rates have been provided. The Contractor and all Subcontractors shall keep these records and preserve them for a period of three years from the date of completion of the Contract. Such records shall be open to inspection by any authorized representative of the Owner at any reasonable time, and as often as may be necessary. The Contractor shall, and shall cause its subcontractors to, submit weekly copies of their weekly payroll records to the Awarding Authority. In addition, the Contractor and each Subcontractor shall furnish to the Executive Department of Labor within fifteen days after completion of its portion of the Work a signed statement in the form required by the Awarding Authority.

E. **Vehicle operators.** If the Director of the Department of Labor and Workforce Development has established a Schedule of wage rates to be paid to the operators of trucks, vehicles or equipment for the Work, the Contractor shall be obligated to pay such operators at least the minimum wage rate contained on such Schedule. (See M.G.L. c.149, s. 26-27H).

F. **Eight-Hour Day.** The Contractor shall comply with M.G.L. c. 149, s. 30, 34 and 34A which provide that no laborer, workman, mechanic, foreman or inspector working within the Commonwealth in the employ of the Contractor, subcontractor or other person doing or contracting to do the whole or part of the Work 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 extraordinary emergency.

G. **Timely Payment of Wages.** The Contractor shall comply with, and shall cause its Subcontractors to comply with M.G.L. c. 149, s. 148 which requires the weekly or biweekly payment of employees within six days of the end of the pay period during which wages were earned if employed for five or six days of a calendar week, and within other periods of time under certain circumstances as set forth therein.

H. **Lodging, etc.** The Contractor shall comply with, and shall cause its Subcontractors to comply with, M.G.L. c. 149, s. 25 which provides that every employee under this Contract shall lodge, board and trade where and with whom he elects, and neither the Contractor nor his agents or employees shall, either directly or indirectly, require as a condition of the employment of any person that the employee shall lodge, board or trade at a particular place or with a particular person.

I. **Truck Rates.** The use by the Contractor of trucks or other motor vehicles hired from either common or contract motor carriers in the course of performance of this Contract is subject to such minimum rates and charges, and rules and regulations as may from time to time be promulgated by the Department of Public Utilities of the Commonwealth of Massachusetts or other agency of the State of Federal government which may be authorized by law to set rates or otherwise regulate the use of such vehicles. The Contractor expressly assumes the risk of any additional expense, inclusive of fuel charges for use of common or contract motor carrier and trucks owned that may arise by reason of any change in such minimum rates and charges, and rules and regulations, and shall be entitled to no additional compensation or reimbursement by reason thereof.

J. **Anti-Boycott Covenant (Executive Order #130).** The Contractor warrants, represents and agrees that during the time this Contract is in effect, neither it nor any affiliated company, as hereafter defined, participates in or cooperates with an international boycott, as defined in Section 999(b)(3) and (4) of the Internal Revenue Code of 1954, as amended, or engages in conduct declared to be unlawful by M.G.L. c. 151E, s. 2. If there shall be a breach in the
warranty, representation or agreement contained in this paragraph, then without limiting such other rights as it may have the Awarding Authority shall be entitled to rescind this contract. As used herein, an affiliated company shall be any business entity of which at least 51% of the ownership interests are directly or indirectly owned by the Contractor or by a person or persons or business entity or entities directly or indirectly owning at least 51% of the Ownership interests of the Contractor; or which directly or indirectly owns at least 51% of the Ownership interests of the Contractor.

K. Contractor's Agreements with Suppliers--Anti-Boycott Provisions.

(1) The Contractor shall not purchase or rent any materials, equipment, machinery, vehicles, or supplies for or in connection with the Work from any person or entity who does not sign, under pains and penalties of perjury, a certificate that recites: "The undersigned warrants, represents and agrees that during the time its agreement with {insert contractor's name} is in effect for materials, supplies or equipment to be used in connection with the {insert the name of the Awarding Authority} Project No. {insert project number}, neither the undersigned or any affiliated company, as hereafter defined, participates in or cooperates with an international boycott, as defined in Section 999(b)(3) and (4) of the Internal Revenue Code of 1954, as amended, or engages in conduct declared to be unlawful by Section 2 of Chapter 151E of the Massachusetts General Laws. As used herein, an affiliated company shall be any business entity of which at least 51% of the ownership interests are directly or indirectly owned by the undersigned or by a person or persons or business entity or entities directly or indirectly owning at least 51% of the ownership interests of the undersigned; or which directly or indirectly owns at least 51% of the ownership interests of the undersigned."

(2) The Awarding Authority shall not be obligated to pay the Contractor for the cost of any materials, supplies, or equipment purchased or rented from any individual or entity from whom the Contractor has not previously obtained and delivered to the Awarding Authority the certificate that the previous paragraph requires. The Contractor will immediately terminate its contract with any supplier who breaches the warranty, representation and agreement contained in the previous paragraph.

(3) The Contractor shall include in the Contractor's agreement with any person or entity from whom the Contractor intends to purchase or rent any materials, equipment, machinery, vehicles or supplies for or in connection with the Work, (a) a notice that this Contract obligates the Contractor to terminate the supply contract upon discovery of such breach of the sworn certificate delivered under subparagraph (1) and such termination shall be without liability to the Contractor or the Awarding Authority and (b) a provision which states: "The Governor or his designee, the secretary of administration and finance, and the state auditor or his designee shall have the right at reasonable times and upon reasonable notice to examine the books, records and other compilations of the undersigned vendor which pertain to the performance and requirements of this agreement to provide materials of any nature to the undersigned contractor in connection with State Project No. {insert project number}."

L. Access to Contractor's Records (Executive Order #195). The Governor or his designee, the secretary of administration and finance, and the state auditor or his designee shall have the right at reasonable times and upon reasonable notice to examine the books, records and other
compilations of data of the Contractor which pertain to the performance and requirements of this Contract.

M. Northern Ireland - M.G.L. c. 7 § 22C. Pursuant to G.L. c. 7 s. 22C for state agencies, state authorities, the House of Representatives or the state Senate, the Contractor certifies that it does not employ ten or more employees in an office or other facility in Northern Ireland and if the Contractor employs ten or more employees in an office or other facility located in Northern Ireland the Contractor certifies that it does not discriminate in employment, compensation, or the terms, conditions and privileges of employment on account of religious or political belief; and it promotes religious tolerance within the work place, and the eradication of any manifestations of religious and other illegal discrimination; and the Contractor is not engaged in the manufacture, distribution or sale of firearms, munitions, including rubber or plastic bullets, tear gas, armored vehicles or military aircraft for use or deployment in any activity in Northern Ireland.

ARTICLE XI: CONTRACTOR’S ACCOUNTING METHOD REQUIREMENTS (M.G.L. c. 30, s. 39R)

1. Definitions.
The words defined herein shall have the meaning stated below whenever they appear in this Article XI:

— "Contractor" means any person, corporation, partnership, joint venture, sole proprietorship, or other entity awarded a Contract pursuant to M.G.L. c. 30, s. 39M, M.G.L. c. 149, s. 44A-J, and M.G.L. c. 7, s. 30B-P.

— "Contract" means any Contract awarded or executed pursuant to M.G.L. c. 30, s. 39M, M.G.L. c. 149, s.44A-J, and M.G.L. c. 7, s. 30B-P, which is for an amount or estimated amount greater than one hundred thousand dollars.

— "Independent Certified Public Account" 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/her residence or principal office and who is in fact independent. In determining whether an accountant is independent with aspect 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.

— "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.

— "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 or other person or persons primarily responsible for the financial and operational policies and practices of the Contractor.
Accounting terms, unless otherwise defined herein, shall have a meaning in accordance with generally accepted accounting principles and auditing standards.

2. **Record Keeping.**
   
   A. The Contractor shall make, and keep for at least six years after final payment, books, records, and accounts that in reasonable detail accurately and fairly reflect the transactions and dispositions of the Contractor.
   
   B. Until the expiration of six years after final payment, the Inspector General, DCAM, and the Awarding Authority shall have the right to examine any books, documents, papers or records of the Contractor and Subcontractors that directly pertain to, and involve transactions relating to the Contractor and Subcontractors.
   
   C. The Contractor shall describe any change in the method of maintaining records or recording transactions which materially affects any statements filed with the Awarding Authority including the date of the change and reasons therefore, and shall accompany said description with a letter from the Contractor’s independent certified public accountant approving or otherwise commenting on the changes.
   
   D. The Contractor represents that it has, prior to the execution of the Contract, filed a statement of management on internal accounting controls as set forth in Section 3 below.
   
   E. The Contractor represents that it has, prior to the execution of the Contract, filed an audited financial statement for the most recent completed fiscal year as set forth in section 4 below and will continue to file such statement annually during the term of the Contract.

3. **Statement of Management Controls.**
   
   A. The Contractor shall file with the Awarding Authority a statement of management as to whether the system of internal accounting controls of the Contractor and its subsidiaries reasonably assures that:
      
      (1) transactions are executed in accordance with management's general and specific authorization;
      
      (2) transactions are recorded as necessary to: (a) to permit preparation of financial statements in conformity with generally accepted accounting principles, and (b) to 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.
   
   B. The Contractor shall file with the Awarding Authority a statement prepared and signed by an independent certified public accountant, stating that the accountant 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 subparagraph 3 above are consistent with the results of management’s evaluation of the system of internal accounting controls; and
(2) whether such representations of management are reasonable with respect to transactions and assets in amounts which would be material when measured in relation to the applicant's financial statement.

4. **Annual Financial Statement.**
   
   A. Every Contractor awarded a contract shall annually file with DCAM 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.
   
   B. The office of Inspector General and DCAM shall have the right to enforce the provisions of this Article. A Contractor's failure to satisfy any of the requirements of this section may be grounds for debarment pursuant to M.G.L. c. 149, s. 44C.

5. **Bid Pricing Materials.**

   The Contractor shall save the written calculations, pricing information, and other data that the Contractor used to calculate the bid that induced the Awarding Authority to enter into this Contract (the "Bid Pricing Materials") for at least six years after the Awarding Authority makes final payment under this Contract.
ARTICLE XII: EQUAL EMPLOYMENT OPPORTUNITY, NON-DISCRIMINATION AND AFFIRMATIVE ACTION PROGRAM.

This Contract includes the provisions of the Awarding Authority's "Equal Employment Opportunity, Non-Discrimination, and Affirmative Action Program" attached as Appendix A to these General Conditions of the Contract and incorporated herein by reference.

ARTICLE XIII: GOALS FOR PARTICIPATION BY MINORITY BUSINESS ENTERPRISES AND WOMEN BUSINESS ENTERPRISES

This Contract includes the provisions of the Awarding Authority's program relating to Goals for Participation by Minority Business Enterprises and Women Business Enterprises attached as Appendix B to these General Conditions of the Contract and incorporated herein by reference.

ARTICLE XIV: INSURANCE REQUIREMENTS

1. Insurance Generally.

A. The Contractor shall take out and maintain the insurance coverage listed in this Article with respect to the operations as well as the completed operations of this Contract. This insurance shall be provided at the Contractor's expense and shall be in full force and effect for the full term of the Contract or for such longer period as this Article requires.

B. All policies shall be written on an occurrence basis and be issued by companies authorized to write that type of insurance under the laws of the Commonwealth and rated in Best's Insurance Guide (or any successor thereto or replacement thereof) as having a general policy holder rating of "A" or better and a financial rating of at least "9" or otherwise acceptable to the Awarding Authority.

C. Contractor shall submit three originals of each certificate of insurance, acceptable to the Awarding Authority, simultaneously with the execution of this Contract. Certificates shall show the Awarding Authority and the Owner as an additional insured as to all policies of liability insurance and shall state that Contractor has paid all premiums and that none of the coverage shall be cancelled, terminated, or materially modified unless and until 30 days prior notice is given in writing to the Awarding Authority. The awarding authority is the University of Massachusetts, and the owner is the University of Massachusetts Amherst or other instrumentality that will own the work including but not limited to the following: UMBA and the Commonwealth. Contractor shall submit updated certificates prior to the expiration of any of the policies referenced in the certificates so that the Awarding Authority shall at all time possess certificates indicating current coverage. Certificates shall indicate that the contractual liability coverage, and Contractor's Protective Liability coverage is in force. Certificates shall include specific acknowledgment that the following coverage are included in the policies:

- Contractual liability
- Contractor's protective
- Owner as additional insured by form CG2010 (11/85 ed.) to the general liability
- Owner as additional insured to automobile liability, umbrella liability, and pollution liability
- General Liability is endorsed with CG2404, Waiver of Subrogation, in favor of the Owner
— Builder’s Risk or Installation Floater includes Owner, Contractor and subcontractors of any tier as named insured. Builder’s Risk or Installation floater is on an All Risk basis including earthquake and flood.

D. The Contractor shall file one certified copy of all policies with the Awarding Authority within sixty days after Contract award. If the Awarding Authority or the Owner is damaged by the Contractor's failure to maintain such insurance and to comply with the terms of this Article, then the Contractor shall be responsible for all costs and damages to the Owner attributable thereto.

E. Termination, cancellation, or material modification of any insurance required by this Contract, whether by the insurer or the insured, shall not be valid unless written notice thereof is given to the Awarding Authority at least thirty days prior to the effective date thereof, which shall be expressed in said notice.

2. Contractor’s Commercial General Liability.

A. The Contractor shall provide the following minimum general liability coverage with respect to the operations performed by Contractor and any employee, subcontractor, or supplier, unless a higher coverage is specified in Exhibit A to the Owner - Contractor Agreement, in which case the Contractor shall provide the additional coverage:

- Bodily Injury & Property Damage $1,000,000 each occurrence  
- $2,000,000 general aggregate, per project  
- Products & Completed Operations $1,000,000 annual aggregate  
- Personal & Advertising Injury $1,000,000 each occurrence  
- Medical Expenses $10,000

B. This policy shall include coverage relating to explosion, collapse, and underground property damage.

C. This policy shall include contractual liability coverage.

D. The completed operations coverage shall be maintained for a period of three (3) years after Substantial Completion.

E. If the Work includes work to be performed within 50 feet of a railroad, any exclusion for liability assumed under contract for work within 50 feet of a railroad shall be deleted.

F. This policy shall include endorsement CG2010 (10/85 edition), Owner as Additional Insured and CG2404 (11/85 edition) Waiver of Subrogation in Favor of Owner.


A. The Contractor shall provide the following minimum coverage with respect to the operations of any employee, including coverage for owned, non-owned, and hired vehicles, unless a higher coverage is specified in Exhibit A to the Owner - Contractor Agreement, in which case the Contractor shall provide the additional coverage:

- Combined Single Limit $1,000,000

B. The policy shall include a CA9948 Pollution Endorsement and shall name the Owner as an Additional Insured.
4. **Pollution Liability.**
The Contractor shall provide coverage for bodily injury and property damage resulting from liability arising out of pollution related exposures such as asbestos abatement, lead paint abatement, tank removal, removal of contaminated soil, etc. The Awarding Authority and the Owner shall be named as an additional insured and coverage must be on an occurrence basis. The amount of coverage shall be $1,000,000 per occurrence and $3,000,000 in the aggregate unless a higher amount is specified in Exhibit A to the Owner - Contractor Agreement, in which case the Contractor shall provide the additional coverage.

5. **Worker’s Compensation.**
   A. The Contractor shall provide the following coverage in accordance with M.G.L. c.149 §34A and c.152 as amended, unless a higher coverage is specified in Exhibit B to the Owner - Contractor Agreement, in which case the Contractor shall provide the higher coverage:
   - Worker's Compensation: Provide Statutory Minimum
   - Part One: $500,000 each accident
   - Employer's Liability: $500,000 disease per employee
   - Part Two: $500,000 disease policy aggregate
   B. If specified in Exhibit A to the Owner - Contractor Agreement the policy must be endorsed to cover United States Longshoremen & Harborworkers Act (USLHW), Maritime Liability for $1,000,000/$1,000,000, or Federal Employer’s Liability Act liability.

6. **Builder’s Risk/ Installation Floater/Stored Materials.**
   A. The Contractor shall provide coverage against loss or damage on all Work included in this Contract in an amount equal to the Contract Price. Such coverage shall be written on an all risks basis or equivalent form and shall include, without limitation, insurance against perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood (if the project is not in an "A" or a "V" flood Zone), windstorm, false work, 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. This policy and/or installation floater shall indicate if Stored Materials coverage is provided as required below.
   B. When Work will be completed on existing buildings owned by the Owner, the Contractor shall provide an installation floater, in the full amount of the Contract Price. Such coverage shall be written on an all risks basis or equivalent form and shall include, without limitation, insurance against perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood (if the project is not in an "A" or a "V" flood Zone), windstorm, false work, 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. This policy and/or installation floater shall indicate if Stored Materials coverage is provided as required below.
C. The Contractor shall maintain insurance on delivered and/or stored material designated to be incorporated in the Work against fire, theft or other hazards. Any loss or damage of whatever nature to such material while stored at some approved off-Site location shall be forthwith replaced by the Contractor at no expense to the Awarding Authority.

D. The policy or policies shall specifically state that they are for the benefit of and payable to the Awarding Authority, Owner, the Contractor, and all persons furnishing labor or labor and materials for the Contract Work, as their interests may appear. The policy or policies shall list the Awarding Authority, Owner, the Contractor, and Subcontractors of any tier as named insured.

E. Coverage shall include any costs for work performed by the Designer or any consultant as the result of a loss experienced during the term of this Contract.

F. Coverage shall include temporary occupancy and waiver of subrogation and shall waive all rights of recovery by subrogation against the University of Massachusetts Building Authority, the University, and the Commonwealth of Massachusetts.

7. **Umbrella Coverage.**

The Contractor shall provide Umbrella Coverage in form at least as broad as primary coverage required by Sections 2, 3 and 5 of this Article in the following amount unless a higher amount is specified in Exhibit A to the Owner - Contractor Agreement, in which case the Contractor shall provide the higher amount:

- Contract Price: Under $1,000,000
- $1,000,000 -- $5,000,000
- $5,000,001 -- $10,000,000
- $10,000,001 and over

Umbrella Coverage:
- $2,000,000
- $5,000,000
- $10,000,000
- $25,000,000

8. **Additional types of Insurance.**

The Contractor shall provide such other types of insurance as may be required by Exhibit A to the Owner - Contractor Agreement.

**ARTICLE XV: INDEMNIFICATION**

1. **Generally.**

To the fullest extent permitted by law, the Contractor shall indemnify, defend (with counsel subject to the supervision of the Attorney General of the Commonwealth of Massachusetts as required by M.G.L. c. 12, s. 3) and hold harmless the Owner, Awarding Authority and Designer and their officers, agents, divisions, agencies, employees, representatives, successors and assigns from and against all claims, damages, losses and expenses, including but not limited to court costs and attorneys’ fees, arising out of or resulting from the performance of the Work, including but not limited to those arising or resulting from:

- labor performed or furnished and/or materials used or employed in the performance of the Work;
- violations by Contractor, any Subcontractor, or by any person directly or indirectly employed or used by any of them in the performance of the Work or anyone for whose acts any of them may be liable (Contractor, subcontractor and all such persons herein collectively...
called "Contractor's Personnel") of any Laws;
— violations of any provision of this Contract by any of Contractor's Personnel;
— injuries to any persons or damage to any property in connection with the Work;
— any act, omission, or neglect of Contractor's Personnel.

The Contractor shall be obligated as provided above, regardless of whether or not such claims, damages, losses and/or expenses, are caused in whole or in part by the actions or inactions of a party indemnified hereunder. In any and all claims by Contractor's Personnel against parties indemnified hereunder, the Contractor's indemnification obligation set forth above shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this Article XV.

2. Designer's Actions.
The obligations of the Contractor under Section 1 above shall not extend to the liability of the Designer, its agents or employees, arising out of (i) the preparation or approval of maps, drawings, opinions, reports, surveys Change Orders, designs or specifications, or (ii) the giving of or the failure to give directions or instructions by the Designer, its agents to employees provided such giving or failure to give is the primary cause of the injury or damage.

The provisions of this Article XV are intended to survive Final Acceptance and/or any termination of this Contract.

ARTICLE XVI: PERFORMANCE AND PAYMENT BONDS

1. Contractor Bonds.
   A. The Contractor shall provide performance and payment (labor and materials) bonds in the form provided by the Awarding Authority, executed by a surety licensed by the Commonwealth of Massachusetts Division of Insurance. Each such bond shall be in the amount of the Contract Price.
   B. If at any time prior to final payment to the Contractor, the Surety:
      — is adjudged bankrupt or has made a general assignment for the benefit of its creditors;
      — has liquidated all assets and/or has made a general assignment for the benefit of its creditors;
      — is placed in receivership;
      — otherwise petitions a state or federal court for protection from its creditors; or
      — allows its license to do business in Massachusetts to lapse or be revoked;
then the Contractor shall, within 21 days of any such action listed above, provide the Awarding Authority with new performance and payment bonds as described in Paragraph A above. Such bonds shall be provided solely at the Contractor's expense.

2. **Subcontractor Bonds.**

   A. If the Contractor provided in its General Bid that any or all filed subcontractors shall provide the Contractor with payment and performance bonds for the full amount of their respective Subcontracts, then the costs for said bonds shall be the responsibility of the Contractor.

   B. If the Contractor provided in its General Bid that filed Subcontractors shall provide bonds, and subsequently waives the requirement, the Contractor shall give the Awarding Authority a written certification that the Contractor understands that if the filed Subcontractor defaults or is terminated, the Contractor shall have full responsibility for all costs and expenses related to said default or termination but shall be entitled to a credit adjustment to the Contract Price in an amount equal to the bond premium Contractor would have paid had Contractor required the filed Subcontractor to provide such bonds.

**ARTICLE XVII: TERMINATION OF CONTRACT**

1. **Termination for Cause.**

   A. The Awarding Authority may without prejudice to any other right or remedy deem this Contract terminated for cause if any of the following defaults shall occur and not be cured within three (3) days after the giving of notice thereof by the Awarding Authority to the Contractor and any surety that has given bonds in connection with this Contract:

   (1) The Contractor has filed a petition, or a petition has been filed against the Contractor with its consent, under any federal or state law concerning bankruptcy, reorganization, insolvency or relief from creditors, or if such a petition is filed against the Contractor without its consent and is not dismissed within sixty (60) days; or if the Contractor is generally not paying its debts as they become due; or if the Contractor becomes insolvent; or if the Contractor consents to the appointment of a receiver, trustee, liquidate, custodian or the like of the Contractor or of all or any substantial portion of its assets and such appointment or possession is not terminated within sixty (60) days; or if the Contractor makes an assignment for the benefit of creditors;

   (2) The Contractor refuses or fails, except in cases for which extension of time is provided under this Contract's express terms, to supply enough properly skilled workers or proper materials to perform its obligations under this Contract, or the Designer has determined that the rate of progress required for the timely completion of the Work is not being met;

   (3) The Contractor fails to make prompt payment to Subcontractors or for materials, equipment, or labor;

   (4) All or a part of the Work has been abandoned;

   (5) The Contractor has sublet or assigned all or any portion of the Work, the Contract, or claims thereunder, without the prior written consent of the Owner, except as expressly permitted in this Contract;
(6) The Contractor has failed to comply with Laws;
(7) The Contractor fails to maintain, or provide to the Awarding Authority evidence of the insurance or bonds required by this Contract, or
(8) The Contractor has failed to prosecute the Work or any portion thereof to the standards required under this Contract or has otherwise breached any material provision of this Contract.

B. The Awarding Authority shall give the Contractor and any surety notice of such termination for cause, but the giving of notice of such termination shall not be a condition precedent or subsequent to the termination's effectiveness. In the event of such termination, and without limiting any other available remedies, the Awarding Authority may, at its option:

(1) hold the Contractor and its sureties liable in damages for a breach of Contract;
(2) notify the Contractor to discontinue all work, or any part thereof, and the Contractor shall discontinue all work, or any part thereof, as the Owner may designate;
(3) complete the Work, or any part thereof, and charge the expense of completing the Work, or part thereof, to the Contractor;
(4) require the surety or sureties to complete the Work and perform all of the Contractor's obligations under this Contract.

If the Awarding Authority elects to complete all or any portion of the Work as specified in (3) above, it may take possession of all materials, equipment, tools, machinery, implements at or near the Site owned by the Contractor and finish the Work at the Contractor's expense by whatever means the Awarding Authority may deem expedient; and the Contractor shall cooperate at its expense in the orderly transfer of the same to a new contractor or to the Awarding Authority as directed by the Awarding Authority. In such case the Awarding Authority shall not make any further payments to the Contractor until the Work is completely finished. The Owner shall not be liable for any depreciation, loss or damage to said materials, machinery, implements or tools during said use and the Contractor shall be solely responsible for their removal from the Site after the Owner has no further use for them. Unless so removed within fifteen days after notice to the Contractor to do so, they may be sold at public auction, after publication of notice thereof at least twice in any newspaper published in the county where the Work is being performed, and the proceeds credited to the Contractor's account; or they may, at the option of the Awarding Authority, be stored at the Contractor’s expense subject to a lien for the storage charges.

C. Damages and expenses incurred under paragraph B above shall include, but not be limited to, costs for the Designer's extra services and Project Representative services required, in the opinion of the Awarding Authority, to successfully inspect and administer the construction contract through final completion of the Work.

D. Expenses charged under paragraph B above may be deducted and paid by the Awarding Authority out of any money then due or to become due to the Contractor under this Contract.

E. All sums damages, and expenses incurred by the Owner to complete the Work shall be charged to the Contractor. In case the damages and expenses charged are less than the sum that would have been payable under this Contract if the same had been completed by the Contractor, the Contractor shall be entitled to receive the difference. In case such expenses shall exceed the said sum, the Contractor shall pay the amount of the excess to the Owner.
2. Termination For Convenience.
   A. The Awarding Authority may terminate this Contract for convenience even though the Contractor is not in default by giving notice to the Contractor specifying in said notice the date of termination.
   B. In case of such termination without cause, the Contractor shall be paid:
      (1) all sums due and owing under this Contract through the date of termination, including any retainage withheld to the date of termination, less any amount which the Awarding Authority determines is necessary to correct or complete the Work performed to the date of termination; plus
      (2) a reasonable sum to cover the expenses which Contractor would not have incurred but for the early termination of the Contract, such as demobilization of the work force, restocking charges, termination fees payable to Subcontractors.
   C. The payment provided in paragraph B above shall be considered to fully compensate the Contractor for all claims and expenses and those of any consultants, Subcontractors, and suppliers, directly or indirectly attributable to the termination, including any claims for lost profits.

3. Contractor's Duties Upon Termination For Convenience.
Upon termination of this Contract for convenience as provided in Section 2 of this Article, the Contractor shall: (1) stop the Work; (2) stop placing orders and Subcontracts in connection with this Contract; (3) cancel all existing orders and Subcontracts; (4) surrender the Site to the Awarding Authority in a safe condition; (5) transfer to the Awarding Authority all materials, supplies, work in process, appliances, facilities, equipment and machinery of this Contract, and all plans, Drawings, specifications and other information and documents used in connection with this Contract.

ARTICLE XVIII: MISCELLANEOUS PROVISIONS

1. No Assignment by Contractor.
The Contractor shall not assign by power of attorney or otherwise, or sublet or subcontract, the Work or any part thereof, without the previous written consent of the Awarding Authority and shall not, either legally or equitably, assign any of the moneys payable under this Contract, or Contractor's claims hereunder, unless with the like consent of the Awarding Authority, whether said assignment is made before, at the time of, or after the execution of the Contract. The Contractor shall remain responsible for satisfactory performance of all Work sublet or assigned. Consent of the Awarding Authority shall not be deemed to constitute a representation or waiver of any right hereunder by the Awarding Authority as to the qualifications or the responsibility of the Contractor or Subcontractor(s).

2. Non-Appropriation.
If the Awarding Authority is unable to obtain an appropriation of funds sufficient to discharge its obligations under this Agreement for any fiscal year during the term of this Agreement, the Awarding Authority shall not be obligated to make any further payments, and this Agreement
may be terminated immediately by either the Awarding Authority or the Contractor, provided that the Awarding Authority shall make payment to the Contractor for obligations incurred during the period for which funding was included in an annual or supplemental appropriation. Delay by the General Court in enacting an annual or supplemental appropriation bill shall not be grounds for termination of this Agreement pursuant to this Section, unless such annual or supplemental appropriation bill as enacted and signed by the Governor contains insufficient funding for obligations pursuant to this Agreement.

3. **Claims by Others Not Valid.**

No person other than the Contractor shall acquire any interest in this Contract or claim against the Awarding Authority or Owner hereunder, and no claim by any other person shall be valid except as provided in M.G.L. c. 30, s. 39F of the General Laws.

4. **No Personal Liability of Public Officials.**

No public official, employee, or agent of the Awarding Authority or Owner shall have any personal liability for the obligations of the Awarding Authority or Owner set forth in this Contract.

5. **Severability.**

The provisions of this Contract are severable, and if any of these provisions shall be held unconstitutional or unenforceable by any court of competent jurisdiction, the decision of such court shall not affect or impair any of the other provisions of this Contract.

6. **Choice of Laws.**

This Contract shall be governed by the laws of the Commonwealth of Massachusetts for all purposes, without regard to its laws on choice of law. All proceedings under this Contract or related to the Project shall be brought in the courts of the Commonwealth of Massachusetts.

7. **Standard Forms.**

Unless directed otherwise in writing by the Awarding Authority, Contractor shall use the standard forms in use by the Awarding Authority and/or Division of Capital Asset Management and Maintenance appearing in Appendix C to these General Conditions of the Contract.

8. **No Waiver of Subsequent Breach.**

No waiver of any breach or obligation of this Contract shall constitute a waiver of any other or subsequent breach or obligation.

9. **Remedies Cumulative.**

All remedies of the Awarding Authority provided in this Contract shall be construed as cumulative and may be exercised simultaneously or in any order as determined by the Awarding Authority in its sole discretion. The Awarding Authority shall also be entitled as of right to specific performance and equitable relief including the right to an injunction against any breach of any of the provisions of this Contract.
10. **Notices.**

Notices to the Contractor shall be deemed given when hand delivered to the Contractor's temporary field office at or near the Site, or when deposited in the U.S. mail addressed to the Contractor at the Contractor's address specified in the Owner - Contractor Agreement, or when delivered by courier to either location. Unless otherwise specified in writing by the Awarding Authority, notices and deliveries to the Awarding Authority shall be effective only when delivered to the Awarding Authority at the address specified in the Owner - Contractor Agreement and date-stamped at the reception desk or for which a receipt has been signed by the agent or employee designated by the Awarding Authority to receive official notices.
APPENDIX A to General Conditions of the Contract

The following provisions form Article XII of the General Conditions of the Contract where the University of Massachusetts Amherst is the Awarding Authority.

EQUAL EMPLOYMENT OPPORTUNITY, NON-DISCRIMINATION AND AFFIRMATIVE ACTION PROGRAM.

1. Compliance Generally.
For purpose of this Article, "minority" refers to Asians, Blacks, Western Hemisphere Hispanics, Native Americans, and Cape Verdeans; "Commission" refers to the Massachusetts Commission Against Discrimination. During the performance of this Contract, the Contractor and all of its Subcontractors (hereinafter collectively referred to as the Contractor) shall comply with all applicable equal employment opportunity, non-discrimination and affirmative action requirements, including but not limited to the following:

   A. The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religious creed, national origin, age, handicap, sexual orientation, or sex. The aforesaid provision shall include, but not be limited to, the following: employment upgrading; demotion or transfer; recruitment advertising; recruitment layoff; termination; rates of pay or other forms of compensation; conditions or privileges of employment; and selection for apprenticeship. The Contractor shall comply with the provisions of M.G.L. c. 151B and all other applicable anti-discrimination and equal opportunity laws.
   B. The Contractor shall comply with the provisions of Executive Order 478, entitled Order Regarding Nondiscrimination, Diversity, Equal Opportunity and Affirmative Action, which prohibits unlawful discrimination based on race, color, age, gender, ethnicity, sexual orientation, religion, creed, ancestry, national origin, disability, veteran’s status (including Vietnam-era veterans), or background. Executive Order 478 is herein incorporated by reference and made a part of this Contract.

Pursuant to Executive Order 478 the Contractor and any subcontractors may not engage in discriminatory employment practices; and the Contractor must certify that it is in compliance with all applicable federal and state laws, rules, and regulations governing fair labor and employment practices; and commit to purchasing supplies and services from certified minority or women-owned businesses, small businesses, or businesses owned by socially or economically disadvantaged persons or persons with disabilities. These provisions shall be enforced through the contracting agency, the Operational Services Division, and/or the Massachusetts Commission Against Discrimination. Any breach shall be regarded as a material breach of Contract that may subject Contractor to appropriate sanctions. The Contractor shall comply with the provisions of Executive Order No. 246 entitled Revoking and Superseding Executive Orders Numbers 143 and 150, with respect to affirmative action programs for handicapped individuals, which is herein incorporated by reference and made a part of this Contract.
C. In connection with the performance of the Work, the Contractor shall undertake in good faith affirmative action measures designed to eliminate any discriminatory barriers in the terms and conditions of employment on the grounds of race, color, religious creed, national origin, age, sexual orientation, or sex, and to eliminate and remedy any effects of such discrimination in the past. Such affirmative action shall entail positive and aggressive measures to ensure equal opportunity in the areas of hiring, upgrading, demotion or transfer, recruitment, layoff or termination, rate of compensation, and in-service or apprenticeship training programs. This affirmative action shall include all action required to guarantee equal employment opportunity for all persons, regardless of race, color, religious creed, national origin, age, sexual orientation, or sex. A purpose of this provision is to ensure to the fullest extent possible an adequate supply of skilled tradesmen for future public construction projects.

D. If the Contractor shall use any subcontractor on any work performed under this Contract, the Contractor shall take affirmative steps to negotiate with qualified minority and women subcontractors. These affirmative steps shall cover both pre-bid and post-bid periods. It shall include notification to the State Office of Minority and Women Business Assistance or its designee, while bids are in preparation, of all products, work or services for which the Contractor intends to negotiate bids. In all solicitations either by competitive bidding or negotiation made by the Contractor either for work to be performed under a subcontract or for the procurement of materials or equipment, each potential subcontractor or supplier shall be notified in writing by the Contractor of the Contractor's obligations under this Contract relative to non-discrimination and affirmative action.

E. As part of its obligation of remedial action under this Article, the Contractor shall maintain on this project not less than the percent ratio set forth in the Owner - Contractor Agreement of minority employee worker hours to total worker hours in each job category including but not limited to bricklayers, carpenters, cement masons, electricians, ironworkers, operating engineers, and those "classes of work" enumerated in M.G. L. c. 149, s. 44F.

F. In the hiring of minority journeypersons, apprentices, trainees and advanced trainees, the Contractor shall rely on referrals from a multi-employer affirmative action program approved by the Commission, traditional referral methods utilized by the construction industry, and referrals from agencies, not more than three in number at any one time, designated by the Liaison Committee or the Awarding Authority.

3. Liaison Committee, Reports and Records.

A. At the option of the Awarding Authority, there may be established for the term of this Contract a body to be known as the Liaison Committee. The Liaison Committee shall be composed of one representative each from the Awarding Authority, the Commission and such other representatives as may be designated by the Commission in conjunction with the Awarding Authority. The Contractor (or his agent, if any, designated by him as the on-Site equal employment opportunity officer) shall recognize the Liaison Committee as an affirmative action body, and shall establish a continuing working relationship with the Liaison Committee, consulting with the Liaison Committee on all matters related to minority recruitment, referral, employment and training.

B. The Contractor shall prepare projected staffing tables on a quarterly basis. These shall be broken down into projections, by week, of workers required in each trade. Copies shall be
furnished one week in advance of the commencement of the period covered, and also when updated, to the Awarding Authority and Liaison Committee. The Contractor shall prepare weekly reports in a form approved by the Awarding Authority of hours worked in each trade by each employee, identified as minority or non-minority. Copies of these shall be provided at the end of each such week to the Awarding Authority and to the Liaison Committee.

C. Records of employment referral orders, prepared by the Contractor, shall be made available to the Awarding Authority and to the Liaison Committee on request.

D. A designee of the Awarding Authority and a designee of the Liaison Committee shall each have right to access to the Site.

E. The Contractor shall comply with the provisions of M.G.L. c. 151B as amended, of the Massachusetts General Laws, both of which are herein incorporated by reference and made a part of this Contract.

F. The Contractor shall provide all information and reports required by the Awarding Authority or the Commission on forms and in accordance with instructions issued by either of them and will permit access to its facilities and any books, records, accounts and other sources of information which may be determined by the Awarding Authority or the Commission to affect the employment of personnel. This provision shall apply only to information pertinent to the Owner's supplementary affirmative action Contract requirements. Where information required is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to the Awarding Authority or the Commission as appropriate and shall set forth what efforts he has made to obtain the information.


A. Whenever the Awarding Authority, the Commission, or the Liaison Committee believes the Contractor or any Subcontractor may not be operating in compliance with the terms of this Article, the Commission shall directly, or through its designated agent, conduct an appropriate investigation, and may confer with the parties, to determine if such Contractor is operating in compliance with the terms of this Article. If the Commission or its agent finds the Contractor or any Subcontractor not in compliance, it may make a preliminary report on non-compliance, and notify such Contractor in writing of such steps as will in the judgment of the Commission or its agent bring such Contractor into compliance. In the event that such Contractor fails or refuses to fully perform such steps, the Commission may make a final report of non-compliance, and recommend to the Awarding Authority the imposition of one or more of the sanctions listed below. If, however, the Commission believes the Contractor or any Subcontractor has taken or is taking every possible measure to achieve compliance, it shall not make a final report of non-compliance. Within fourteen days of the receipt of the recommendations of the Commission, the Awarding Authority shall move to impose one or more of the following sanctions, as it may deem appropriate to attain full and effective enforcement:

(1) The recovery by the Awarding Authority from the Contractor of 1/100 of 1% of the Contract award price or $1,000 whichever sum is greater, in the nature of liquidated damages or, if a Subcontractor is in non-compliance, the recovery by the Awarding Authority from the Contractor, to be assessed by the Contractor as a back charge against the subcontractor, of 1/10 of 1% of the sub-Contract Price, or $400 whichever
sum is greater, in the nature of liquidated damages, for each week that such party fails or refuses to comply;

(2) The suspension of any payment or part thereof due under the Contract until such time as the Contractor or any subcontractor is able to demonstrate his compliance with the terms of the Contract;

(3) The termination, or cancellation, of the Contract, in whole or in part, unless the Contractor or any Subcontractor is able to demonstrate, as approved by the Awarding Authority, within a specified time his compliance with the terms of the contract;

(4) The denial to the Contractor or any subcontractor of the right to participate in any future contracts awarded by the Awarding Authority for a period of up to three years.

B. If at any time after the imposition of one or more of the above sanctions a Contractor is able to demonstrate that it is in compliance with this Article, the Contractor may request the Awarding Authority, in consultation with the Commission, to suspend the sanctions conditionally, pending a final determination by the Commission as to whether the Contractor is in compliance. Upon final determination of the Commission, the Awarding Authority, based on the recommendation of the Commission, shall either lift the sanctions or impose them again.

C. Sanctions recommended by the Commission and enumerated under Section 4 above shall not be imposed by the Awarding Authority except after an adjudicatory proceeding, as that term is used M.G.L. c. 30A, has been conducted. No investigation by the Commission or its agent shall be initiated without prior notice to the Contractor.

D. Notwithstanding the provisions of 4A-4C above, if the Awarding Authority determines after investigation that the Contractor or any Subcontractor is not in compliance with the terms of this Article, it may suspend any payment or portion thereof due under the Contract until the contractor demonstrates to the satisfaction of the Awarding Authority compliance with the terms of this Article. This temporary suspension of payments by the Awarding Authority is separate from the sanctions set forth in Section 4A-4C of this Article above, which are determined by MCAD and recommend to the Awarding Authority. Payment may be suspended only after the Contractor and any other interested party shall have been given the opportunity to present evidence in support of its position at an informal hearing held by the Awarding Authority, and the Awarding Authority has concluded upon review of all the evidence that such penalty is justified. Payment shall not be suspended if the Awarding Authority finds that the Contractor made its best efforts to comply with this Article, or that some other justifiable reason exists for waiving the provisions of this Article in whole or in part.
APPENDIX B to General Conditions of the Contract

The following provisions form Article XIII of the General Conditions of the Contract where the University of Massachusetts Amherst is the Awarding Authority.

GOALS FOR PARTICIPATION BY MINORITY BUSINESS ENTERPRISES AND WOMEN BUSINESS ENTERPRISES (EXECUTIVE ORDER 390, M.G.L. c. 7, s. 40N)

1. Goals.
   A. The goals for minority business enterprise and woman business enterprise participation established for this Contract are as set forth in the Owner - Contractor Agreement.
   B. The Contractor and all Subcontractors, sub-subcontractors, and materials suppliers shall comply with all of the terms and conditions of this Article, which include the provisions pertaining to M/WBE participation set forth in the Owner - Contractor Agreement in order to meet the M/WBE participation goals established for this Contract.

2. M/WBE Participation Credit.
   A. If the Contractor is itself an MBE or WBE, M/WBE participation credit shall be given in an amount equal to the entire Contract Price. If the Contractor is not an MBE or WBE, then M/WBE participation credit will be given for the value of the Work that is actually performed by each MBE or WBE subcontractor or sub-subcontractor.
   B. If the Contractor is a joint venture with one or more M/WBE joint ventures’, M/WBE participation credit shall be given to the joint venture as follows:
      (1) If the joint venture is certified by SOMBWA as an MBE or WBE, M/WBE participation credit shall be given in an amount equal to the entire Contract Price.
      (2) If the joint venture is not certified by an MBE or WBE by SOMWBA, M/WBE participation credit shall be given to the joint venture for the value of the Work that is performed by the M/WBE joint ventures’, and for the value of the Work that is actually performed by each MBE or WBE subcontractor or sub-subcontractor.
   C. If an M/WBE supplies but does not install equipment or materials, M/WBE participation credit shall be given only if the M/WBE supplier is regularly engaged in sales of equipment or supplies to the construction industry from an established place of business. M/WBE participation credit shall be given the full amount of the purchase order only if the M/WBE supplier manufactures the goods or substantially alters them before resale. In all other cases, M/WBE participation credit shall be given for 10% of the purchase order.
   D. MBE participation credit shall be given for the work performed by MBEs only, and WBE participation credit shall be given for the work performed by WBEs only. MBE participation may not be substituted for WBE participation, nor may WBE participation be substituted for MBE participation.
3. Establishing M/WBE Status.
   A. A minority owned business shall be considered an MBE only if it has been certified as a minority business enterprise by the State Office of Minority and Women Business Assistance ("SOMWBA").
   B. A woman owned business shall be considered a WBE only if it has been certified as a woman business enterprise by SOMWBA.
   C. Certification as a disadvantaged business enterprise ("DBE"), certification as an M/WBE by any agency other than SOMWBA, or submission of an application to SOMWBA for certification as an M/WBE shall not confer M/WBE status on a firm for the purposes of this Contract.

4. Subcontracts With M/WBEs.
   Within thirty (30) days after the award of this Contract, the Contractor shall (i) execute a subcontract with each M/WBE Subcontractor which has executed a Letter of Intent Approved by the Awarding Authority, (ii) cause its Subcontractors to execute a sub-subcontract with each M/WBE sub-subcontractor, and (iii) furnish the Awarding Authority with a signed copy of each such subcontract and sub-subcontract.

5. Performance of Contract Work by M/WBEs.
   A. The Contractor shall not perform with its own organization or subcontract or assign to any other firm work designated to be performed by any W/MBE in the Letters of Intent or Schedule of M/WBE Participation without the prior Approval of the Awarding Authority, nor shall any M/WBE assign or subcontract to any other firm, or permit any other firm to perform any of its M/WBE Work without the prior Approval of the Awarding Authority. Any such unapproved assignment, subcontracting, sub-subcontracting, or performances of M/WBE Work by others shall be a change in the M/WBE Work for the purposes of this Contract. The Awarding Authority WILL NOT APPLY TO THE M/WBE PARTICIPATION GOAL(S) ANY SUMS ATTRIBUTABLE TO SUCH UNAPPROVED ASSIGNMENTS, SUB-CONTRACTS, SUB-SUBCONTRACTS, OR PERFORMANCE OF M/WBE WORK BY OTHERS.
   B. The Contractor shall be responsible for monitoring the performance of M/WBE Work to ensure that each scheduled M/WBE performs its own M/WBE Work with its own workforce.
   C. The Contractor and each M/WBE shall provide the Awarding Authority with all information and documentation that the Awarding Authority determines is necessary to ascertain whether or not an M/WBE has performed its own M/WBE Work. At the discretion of the Awarding Authority, failure to submit such documentation to the Awarding Authority shall establish conclusively for the purpose of giving M/WBE participation credit under this Contract that such M/WBE did not perform such work.

   A. If at any time during the performance of the Contract the Contractor determines or has reason to believe that a scheduled M/WMBE is unable or unwilling to perform its M/WBE Work, or that there has been or will be a change in any M/WMBE Work, or that the Contractor will be unable to meet the M/WBE participation goal(s) for this Contract for any reason, the
Contractor shall immediately notify the Awarding Authority Contract Compliance Office in writing of such circumstances.

B. Any notice of a change in M/WBE Work pursuant to subparagraph “A” above shall include a revised Schedule of M/WBE Participation, and additional or amended Letters of Intent and subcontracts, as the case may be.

7. Actions Required If There is a Reduction in M/WBE Participation.

A. In the event there is a change or reduction in any M/WBE Work which will result in the Contractor failing to meet the M/WBE participation goal(s) for this Contract, other than a reduction in M/WBE Work resulting from a Change Order initiated by the Awarding Authority, then the Contractor shall immediately undertake a diligent, good faith effort to make up the shortfall in M/WBE participation as follows:

1) The Contractor shall identify all items of the Work remaining to be performed under the Contract that may be made available for subcontracting to W/MBEs. The Contractor shall send a list of such items of work to the Awarding Authority, together with a list of the remaining items of the Work that was not made available to M/WBEs and the reason for not making such work available for subcontracting to M/WBEs.

2) The Contractor shall send written notices soliciting proposals to perform the items of the Work that may be made available for subcontracting to W/MBEs to all W/MBEs qualified to perform such work. The Contractor shall advise the Awarding Authority of (i) each W/MBE solicited, and (ii) each W/MBE listed in the SOMWBA directory under the applicable trade category who was not solicited and the reasons therefor. The Contractor shall also advise the Awarding Authority of the dates notices were mailed and provide a copy of the written notice(s) sent.

3) The Contractor shall make reasonable efforts to follow up the written notices sent to M/WBEs with telephone calls or personal visits in order to determine with certainty whether the M/WBEs were interested in performing the work. Phone logs or other documentation must be submitted to the Awarding Authority evidencing this effort.

4) The Contractor shall make reasonable efforts to assist M/WBEs that need assistance in obtaining insurance, bonds, or lines of credit in order to perform work under the Contract, and shall provide the Awarding Authority with evidence that such efforts were made.

5) The Contractor shall provide the Awarding Authority with a statement of the response received from each M/WBE solicited, including the reason for rejecting any M/WBE who submitted a proposal.

6) The Contractor shall take any additional measures reasonably requested by the Awarding Authority to meet the M/WBE participation goal(s) established for this Contract, including, without limitation, placing advertisements in appropriate media and trade association publications announcing the Contractor’s interest in obtaining proposals from M/WBEs, and/or sending written notification to M/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 M/WBEs.
B. If the Contractor is unable to meet the M/WBE participation goals for this Contract after complying fully with each of the requirements of paragraph “A” above, and the Contractor is otherwise in full compliance with the terms of this Article, the Awarding Authority may reduce the M/WBE participation goals for this Contract to the extent that such goals cannot be achieved.

8. Suspension of Payment and/or Performance for Noncompliance.

A. If at any time during the performance of this Contract, the Awarding Authority determines or has reason to believe that (1) there has been a change or reduction in any M/WBE Work which will result in the Contractor failing to meet the M/WBE participation goal(s) for this Contract, other than a reduction in M/WBE Work resulting from a change in the Contract work ordered by the Awarding Authority, and (2) the Contractor has failed to comply fully with all of the terms and conditions of paragraphs 1 through 7 above, the Awarding Authority may:

   (1) suspend payment to the Contractor of an amount equal to the value of the work which was to have been performed by an M/WBE pursuant to the Contractor’s Schedule of M/WBE Participation but which was not so performed, in order to ensure that sufficient Contract funds will be available if liquidated damages are assessed pursuant to paragraph 9, and/or
   (2) suspend the Contractor's performance of this Contract in whole or in part.

B. The Awarding Authority shall give the Contractor prompt written notice of any action taken pursuant to paragraph A above and shall give the Contractor and any other interested party, including any M/WBEs, an opportunity to present evidence to the Awarding Authority that the Contractor is in compliance with the requirements of this Article, or that there is some justifiable reason for waiving the requirements of this Article in whole or in part. The Awarding Authority may invite SOMWBA and the Massachusetts Commission Against Discrimination to participate in any proceedings undertaken pursuant to this paragraph.

C. Upon a showing that the Contractor is in full compliance with the requirements of this Article, or that the Contractor has met or will meet the M/WBE participation goals for this Contract, the Awarding Authority shall release any funds withheld pursuant to clause A(1) above, and lift any suspension of the Contractor’s performance under clause A(2) above.

9. Liquidated Damages; Termination.

A. If payment by the Awarding Authority or performance by the Contractor is suspended by the Awarding Authority as provided in paragraph 8 above, the Awarding Authority shall have the following rights and remedies if the Contractor thereafter fails to take all action necessary to bring the Contractor into full compliance with the requirements of this Article, or if full compliance is no longer possible because the default of the Contractor is no longer susceptible to cure, if the Contractor fails to take such other action as may be required by the Awarding Authority to meet the M/WBE participation goals set forth in this Contract:

   (1) the Awarding Authority may terminate this Contract, and/or
   (2) the Awarding Authority may retain from final payment to the Contractor, as liquidated damages, an amount equal to the difference between (x) the total of the M/WBE participation goals set forth in this Contract, and (y) the amount of M/WBE
participation credit earned by the Contractor for M/WBE Work performed under this Contract as determined by the Awarding Authority, the parties agreeing that the damages for failure to meet the M/WBE participation goals are difficult to determine and that the foregoing amount to be retained by the Awarding Authority represents the parties’ best estimate of such damages. Any liquidated damages will be assessed separately for MBE and WBE participation.

B. Before exercising its rights and remedies hereunder, the Awarding Authority may, but the Awarding Authority shall not be obligated to, give the Contractor and any other interested party another opportunity to present evidence to the Awarding Authority that the Contractor is in compliance with the requirements of this Article or that there is some justifiable reason for waiving the requirements of this Article in whole or in part. The Awarding Authority may invite SOMWBA and the Massachusetts Commission Against Discrimination to participate in any proceedings undertaken hereunder.

10. Reporting Requirements.
The Contractor shall submit to the Awarding Authority all information or documentation that is necessary in the judgment of the Awarding Authority to ascertain whether or not the Contractor has complied with any of the provisions of this Article.

11. Awarding Authority’s Right to Waive Provisions of this Article in Whole or In Part.
The Awarding Authority reserves the right to waive any provision or requirement of this Article if the Awarding Authority determines that such waiver is justified and in the public interest. No such waiver shall be effective unless in writing and signed by a representative of the Awarding Authority's Compliance/Procurement Office or the office of its General Counsel. No other action or inaction by the Awarding Authority shall be construed as a waiver of any provision of this Article.
APPENDIX C to the General Conditions of the Contract

INDEX OF COMMONLY-USED FORMS

(Forms used during bidding are located in Attachment B to the Instructions to Bidders)

Procedure for Payment to Contractors
Daily Time and Material Report for Change Orders
Notice of Intent
Request and Agreement for a Change in the Plans,
  Specifications and/or Contract (UMA Form 5)
Instructions Regarding Change Orders and Contract Modifications (UMA Form 13)
Contractor’s Weekly Workforce Report
Minorities/Women in Contractor’s Weekly Workforce Report
Weekly Payroll Report Form and Statement of Compliance
Quarterly Projected Workforce Table
Certification of Payment by Contractor to MBE/WBE and Instructions
Certificate of Completion by Minority/Women Business Enterprise
Form for Transfer of Title (Work Not Incorporated, UMA Form 16)
Certificate of Agency Use and Occupancy - E-1
Certificate of Final Inspection, Release and Acceptance - E-2
Form ST-SC
THE COMMONWEALTH OF MASSACHUSETTS
THE UNIVERSITY OF MASSACHUSETTS AMHERST
FACILITIES PLANNING
Physical Plant Building, 360 Campus Center Way, Amherst, MA 01003

PROCEDURE FOR PAYMENTS TO CONTRACTORS

I. APPLICATION AND DISTRIBUTION
This bulletin is effective on all construction projects Chapter 149 and Chapter 30 subject to the control of the University of Massachusetts Amherst Facilities Planning hereinafter referred to as the “Division”, as provided by Chapter 7 G.L. Section 39A through 43G as amended.

This form is available to all General Contractors: Sub-contractors, Designers, Resident Engineers, and on request to any party of interest.

This form constitutes a method of contractual procedure noted in the General Conditions of the Contract and is not a rule or regulation as defined by the STATE ADMINISTRATIVE PROCEDURE ACT, M.G.L. c. 30a, S. 5.

No deviation from the procedure set forth in this form may be made without the express authorization of the University of Massachusetts Amherst (“UMASS”).

II. STATUTORY REFERENCES, DEFINITIONS, ETC. M.G.L. c. 30, s. 39K
Non-Building Contracts); University of Massachusetts Amherst Standard Vertical Construction Contract as amended. All General Contractors, Sub-Contractors, Designers, and Resident Engineers, University of Massachusetts Amherst Project Managers should thoroughly familiarize themselves with said contract.

III. PREPARATION AND PROCESSING OR PERIODIC PAYMENT
Periodic payment requests shall be submitted monthly, for the preceding month, corresponding to the date of the contract. Submission in this manner stagger the receipt of invoices in the University of Massachusetts Amherst office and expedites processing contractor payments. All invoices must include:

1. The Contractor’s Name
2. The UMA Contract Number
3. The UMA Project Number
4. The Project Name
5. The Purchase Order Number
6. Must clearly state that the invoice/requisition is exactly that, not a statement
7. Invoice Number or Requisition Number
8. Invoice Date
9. Period for which the work was completed
10. Schedule of Values
11. Approved Original Signatures
12. Notary

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The General Contractor and his sub-contractors, the Designer and the Resident Engineer(s) and University of Massachusetts Amherst Project Manager(s) shall approve prior to the date of submission for each periodic payment request as to the percentage value of work completed.

All questions as to the value of the work performed and as to payment for materials not incorporated into the work should be resolved in advance of the submission of the formal request for periodic payment. It is suggested that a job meeting/conference is the most effective way of resolving any questions of matters of dispute. The General Contractor shall submit to the Resident Engineer (or in the absence of a Resident Engineer, the University of Massachusetts Amherst – Project Manager (PM)) for the Resident Engineer’s approval, well in advance of the submission of the first periodic estimate, a breakdown of the various items of work corresponding to the sections of the specification making up the lump sum for item 1, Work of the General Contractor; and each section under Item 2, Sub-bids, of the contract. In addition, the General Contractor; and each sub-contractor shall furnish the Resident Engineer with two (2) copies of any necessary sub-breakdowns of each section and such other detailed information as required by the Resident Engineer to evaluate properly the percentage of the work performed. The Resident Engineer shall submit one copy to the Division, as approved by the Resident Engineer upon request.

The General Contractor shall prepare its formal request for periodic payment on the standard AIA form G702-1992, Application and Certificate for payment or other periodic payment form approved by the Awarding Authority.

The General Contractor shall prepare sufficient copies of the request for periodic payment for submission to the University of Massachusetts Amherst Project Manager. To be distributed by the Awarding Authority as follows:

- **Original:** University of Massachusetts Amherst Accounts Payable
- **Copy 1:** Facilities Planning
- **Copy 2:** University of Massachusetts Amherst Project Manager
- **Copy 3:** Designer
- **Copy 4:** Resident Engineer
- **Copy 5:** Contractor
- **Copy 6,7:** Required on Federally Aided projects only

**IV. CERTIFICATION**

The General Contractor shall sign all copies of the invoice/requisition and present same to the University of Massachusetts Amherst Project Manager certifying the value of the work performed. In the event of any dispute as to the formal request for periodic payment, the Resident Engineer and/or the Designer shall in the absence of their certification on the AIA form attach to each copy a qualified certification and a recommendation as to the dollar value of the item or items in dispute to be retained by Awarding Authority in accordance with Chapter 30, Section 39K. In the signatory space write “See attached Letter”. Neither the Resident Engineer nor the Designer shall alter the AIA Form submitted with the formal request for payment in any manner. If the Division concurs with the Engineer and/or Designer’s recommendation, adjustment(s) shall be made to the AIA form by the Division. Attention of the General Contractor is directed to the statement to the effect that payments to all sub-contractors have been made in accordance with the provision of M.G.L. c. 30, s39F which statement must be signed under penalty of perjury on each copy by the General Contractor.
V. PROCESSING FOR PERIODIC PAYMENTS
It shall be the sole responsibility of the General Contractor to choose the delivery of the request for periodic payment in proper form and arithmetically correct to the Resident Engineer (the designee provided in M.G.L., c. 30, s 39K). In the event there is no Resident Engineer assigned to the contract the Designer shall be the designee. If there be neither a Resident Engineer nor a Designer, the designee shall be the University of Massachusetts Amherst Project Manager or alternatively the home office of the Division of Facilities Planning, University of Massachusetts Amherst, Physical Plant Building, 360 Campus Center Way, Amherst, MA 01003. Payment shall be due and payable within thirty (30) days after receipt by the designee. Request for periodic payment not in the required form containing arithmetical computations which are not correct will within seven (7) days be returned to the contractor and the prescribed period for payment shall commence upon the date which the corrected periodic estimate is received at the University of Massachusetts Amherst, Division of Facilities Planning. Attention is directed to the provision of M.G.L. c. 30, s. 39K which provides that the awarding authority may make changes in any periodic estimate submitted by the contractor.

VI. INQUIRY AS TO PERIODIC REQUESTS FOR PAYMENT – PAYMENT FLOW
All inquiries as to the value of the work performed, certified and due to the General Contractor, its Sub-Contractors and suppliers shall be directed to the Resident Engineer or University of Massachusetts Amherst Project Manager.

This invoice is public information and shall be requested via Public Records Requests to the business office of the Division.

VII. SPECIAL INSTRUCTION TO EMPLOYEES, PROJECT MANAGERS, RESIDENT ENGINEERS & DESIGNERS
The Resident Engineer, Project Managers and the Designer shall give their immediate attention to the certification of requests for periodic payments to contractors and under no circumstances are these requests to be delayed. The Resident Engineer, Project Managers and the Designer shall rigidly adhere to the instructions contained in this Bulletin and immediately expedite certification in order that the period payment requests may be delivered by the Contractor to Facilities Planning without delay. The Resident Engineer, Project Managers and the Designer shall process the payment expeditiously.
DAILY TIME AND MATERIAL REPORT FOR ALL CHANGE ORDER WORK OR WORK DONE UNDER PROTEST

UMA Project Number: ___________ Project Number: ___________ Date: ___________

Project Title: ________________

Contractor: ________________ Change Order No.: ________________

Or work under protest: ___________

Sheet _____ of ________________

Was any contract work performed today other than Change Order concerned (Y/N)? ________________

If Yes, list on Daily Progress Report.

Labor – Change Order or Alleged Extra Work Done Under Protest

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Submitted by Superintendent: 

Subcontractors:  

Resident Engineer/University of Massachusetts Project Manager (note any discrepancy in above Report):  

Resident Engineer/ University of Massachusetts Project Manager  

The signature of the Resident Engineer/Project Manager is for verification of labor listed above and does not constitute acknowledgement that such labor is for extra work or that additional monies are due for such work.  

1. Materials Used (Describe fully)  

2. Misc. Equipment, Etc. (Describe fully)  

Submitted by Superintendent: 

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Subcontractors:

Resident Engineer/University of Massachusetts Amherst Project Manager (note any discrepancy in above Report):

Resident Engineer/ University of Massachusetts Amherst Project Manager _________________

The signature of the Resident Engineer/Project Manager is for verification of materials listed above and does not constitute acknowledgement that such material is for extra work or that additional monies are due for such work.

Send one copy with Daily Report Each Day

Other copy to accompany Green Sheets to Designer when Change Order is completed
University of Massachusetts Amherst, Facilities Planning

Contract Modification/Authorization to Proceed

(For Change Authorization in the Contract Plans and/or Specifications)

Date: ____________________

UMA Number: ____________________ Project Number: ____________________

Project Name: _______________________________________________________________

Contractor: ____________________ Contract Start Date: ___________ Contract Award: $______________

NOI Request No. ____________ Change Order No: ____________ Requestor: _________________

Nature of Request:

G.C. PCO No. ____________

Date:

Reason for Request:

Designer’s CCR No. ____________

Date:

This change in work is to be performed according to ARTICLE VII of the General Conditions of the Contract. Change Orders will be in accordance with the contract and Form 13:

_____ Predetermined “LUMP SUM” total: $_______________.00
_____ (if checked) Additional Verification Backup Data Must Be Provided with Formal Change Order, See Attached

_____ Lump Sum “NOT TO EXCEED”: $_____________.00

(Maximum price based on contract unit prices or negotiated agreed unit prices)

_____ “TIME AND MATERIALS” Not to Exceed: $_____________.00

(Computed in accordance with Article VII of the General conditions)

________________________________________________________

Resident Engineer Date

________________________________________________________

Project Manager Date

________________________________________________________

Director Date

APPROVAL OF THIS NOTICE OF INTENT DOES NOT ADDRESS REQUESTS FOR ADDITIONAL TIME, EXTENSIONS OF CONTRACT TIME WILL BE ADDRESSED UPON SUBMITAL OF THE OFFICAL CHANGE ORDER. RECEIPT OF THIS REQUEST TO BE ACKNOWLEDGED IN WRITING TO UNIVERSITY OF MASSACHUSETTS AMHERST, FACILITIES PLANNING.

CERTIFICATION OF SUFFICIENT FUNDS BY: ________________________ SPEED CODE: ________

COPY: Project Manager, Resident Engineer,
DIVISION OF CAPITAL ASSET MANAGEMENT
DCAM CHANGE REQUEST NO. __________
THE COMMONWEALTH OF MASSACHUSETTS EXECUTIVE OFFICE FOR ADMINISTRATION & FINANCE
REQUEST AND AGREEMENT FOR A CHANGE IN THE PLANS AND/OR SPECIFICATIONS AND/OR CONTRACT
All signatures are affixed under the penalties of perjury.

Project No. ____________ Contract No. ____________ Title ____________

Location ______________________________________________________________________________________________________________________________________

I. REQUEST
(a) Requested by ____________________________ of ____________________________

(b) Requestor’s description of change _____________________________________________________________________________________________________________________________________________________________

II. GENERAL CONTRACTOR’S PROPOSAL REQUEST NO. ____________________________________________
For all costs involved in this change including extensions of time herein requested the undersigned general contractor proposes to perform
the work described above in accordance with the provisions of Article VII of the contract and certifies that the attached cost data is
accurate, complete and current and mathematically correct.

Payment shall be made on the basis of:
(a) Predetermined lump sum total of (add) (deduct) $ ____________________________

(b) Lump Sum not to exceed (add) (deduct) $ ____________________________
(max price based on contract unit prices or negotiated agreed unit prices)

(c) Time and Materials Basis not to exceed (add) (deduct) $ ____________________________
(Computed in accordance with Article VII of the contract) (Require authorization of Commissioner)

Place X beside selected proposal method and strike out either (add) or (deduct) whichever does not apply. Attach detailed estimates and break-
down for above in accordance with change order instructions. A claim for work performed under protest shall be submitted per (c) above.

An extension of contract time of ____________ calendar days is requested.

Contractor ____________________________ by ____________________________

Firm Name ____________________________ Authorized Signature ____________________________ Date ____________________________

III. APPROVAL RECOMMENDED BY:

The Designer and the Resident Engineer must attach their respective letters of recommendation with responses to questions listed in Form 13,
change order instructions. Adverse or altered recommendation must be delineated on the letters.

Resident Engineer ____________________________ Date ____________________________

Project Engineer ____________________________ Date ____________________________

Project Manager ____________________________ Date ____________________________

Deputy Director ____________________________ Date ____________________________

IV. APPROVED BY THE OFFICE
(a) Operating Agency Letter (attached) ________ (not req’d) ____________
(b) For the amount requested/or corrected to $ ____________________________

© Extended as requested/or corrected to ____________ Calendar Days.
(d) This change is in the best interest of the Commonwealth and constitutes an
equitable adjustment to the contract in compliance with Art. VII of the contract.

Authorized Signature ____________________________ Date ____________________________

Upon signature by the Office, this request becomes a formal change order for
Immediate distribution.

DCAM FORM #5
4/10/02

OFFICE COPY ___ COMPTROLLER ___ PROJECT ENGINEER ___ DESIGNER ___

Designer ____________________________ Date ____________________________

Don’t fill in this block

Contract Award $ ____________________________

Previous Addition $ ____________________________

Previous Net Total $ ____________________________

This Change $ ____________________________

Total To Date $ ____________________________

Contract Completion Date

Extended to ____________ Date ____________________________

If applicable to Phase ____________ Date ____________________________
of Contract

Office Change Order Approval # ____________________________
UNIVERSITY OF MASSACHUSETTS AMHERST

FACILITIES PLANNING

PHYSICAL PLANT BUILDING

360 CAMPUS CENTER WAY

AMHERST, MASSACHUSETTS 01003

INSTRUCTIONS REGARDING CHANGE ORDERS

AND

CONTRACT MODIFICATIONS

SECTION 1. STATUTORY AND CONTRACTUAL PROVISIONS

1.01. This instruction form supplements Article VII of the University of Massachusetts Amherst General Conditions of the Contract but is not intended to supersede or modify any of the provisions contained therein. It is available for general distribution and is applicable to all projects under the jurisdiction of the University of Massachusetts Amherst.

The Statutory authorities for a change in the plans, specifications and/or contract are provided in Mass. G.L. Chapter 7, Section 42E-421 and in Massachusetts G.L. Chapter 30, section 39, 39J, 39N, 39P, 39Q. (Refer to Article VII of the General Conditions of the Contract). All parties must keep themselves informed of any amendments affecting said statutes.

NO CHANGES (ADDITIONS, SUBSTITUTIONS OR ELIMINATIONS) IN THE PLANS, SPECIFICATIONS OR CONTRACT SHALL BE COMMENCED UNTIL RECEIPT BY THE CONTRACTOR OF: (a) AN APPROVED BY THE UNIVERSITY OF MASSACHUSETTS AMHERST PURCHASE ORDER.

All requests for changes increasing the contract price must be submitted on the UMA Form 5, prior to the final acceptance of the project. The Contractor waives all rights against the University of Massachusetts Amherst if it fails to comply with this requirement. The University of Massachusetts Amherst shall be under no obligation to process a request for change after final acceptance of the project.

The term “request for change” is used throughout these procedures and applies to every request to revise the contract requirements.

The request for change must be made in writing, and in accordance with the provisions of the Contract, the General laws, rules, regulations and other procedures of the University of Massachusetts Amherst.

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1.02. GENERAL, PURPOSE
The purpose of these procedures is to properly authorize necessary changes, provide satisfactory documentation supporting the nature and cost of each change, and all the change order work to be accomplished in a timely and efficient manner.

It is the intention of the University of Massachusetts Amherst and the applicable statutory provision that whenever possible the parties should agree upon an equitable adjustment in the contract price before commencement of the pertinent work.

All parties shall negotiate in a professional manner and agree upon the particulars associated with the change in the work, thereby facilitating an approved change order.

It is the responsibility of the Contractor to substantiate clearly the costs associated with all changes.

If the Contractor refuses to provide the project manager, within ten (10) days of proposed requests for change, cost estimates for a proposed change in the work, the project manager may unilaterally determine the reasonable cost for the change, and the Contractor must proceed with the work based upon the project manager’s established cost.

SECTION 2. SUBMISSION AND DISPOSITION OF THE UNIVERSITY OF MASSACHUSETTS AMHERST NOTICE OF INTENT (“NOI”)

2.01 AUTHORIZED REQUESTORS:
   a) General Contractor, including Sub-Contractor
   b) Designer
   c) University of Massachusetts Amherst Project Manager, Assistant Directors or Director of Facilities Planning

2.02 THE REQUESTOR SHALL:
   a) Initially discuss the proposed request for change with all interested parties.
   b) If the Designer or the University of Massachusetts Amherst is the requestor, forward to the contractor a written request for proposal.
   c) If the Contractor is the requestor see Section 2.03, below.

2.03 THE CONTRACTOR SHALL:
If the Contractor is the requestor or if it receives a request for change it shall:
   a) Submit a written request for a Notice of Intent (NOI) indicating the proposed change in the work and the proposed method of compensation, as set forth in Article VII of the General Conditions of the Contract and in Section II of the UMA Form 5. The written request shall include a cost breakdown with the requested change as outlined in Article VII of the General Conditions of the Contract. The breakdown of all filed sub-contractors shall be separated from the General Contractor’s breakdown and both are required to be on properly identifiable letterhead stationary and signed showing (a) quantities and costs utilizing unit pricing, (b) the classification and hours of labor, fringe benefits and the complete breakdown showing unit cost of material and equipment, and (c) any other allowable costs as set forth in Article VII. See also Section 5, below.
b) The written request for NOI and accompanying documentation shall be addressed to the Division of Facilities Planning and sent to the Project Manager. One copy shall be addressed to the Designer, and one to the Resident Engineer (if applicable).

c) Each written request for an NOI must include all costs associated with the request for change.

d) The General Contractor shall review all cost breakdowns being submitted by its suppliers and subcontractors and check them to insure the information being submitted is accurate and mathematically correct.

2.04 THE RESIDENT ENGINEER/UNIVERSITY OF MASSACHUSETTS PM (IF NO RESIDENT ENGINEER) SHALL:

a) Note the receipt of written request for NOI in the record of NOIs/Change Orders, diary, and daily report.

b) Inform the Designer, the Project Manager (if applicable) and the Project Engineer of the request for NOI.

c) Review both quantities and prices of labor and materials and recommend corrections of changes. Check to make sure the required breakdowns are attached from all subcontractors on properly identifiable letterhead.

d) If any request is inaccurate, incomplete, contains insufficient credits due to the University of Massachusetts Amherst or is otherwise unacceptable, the Resident Engineer shall note the return of a request for an NOI in the record of NOIs/Change Orders, diary, daily report and return the request to the Contractor with a dated cover letter detailing the reasons for return.

2.05 THE DESIGNER SHALL:

Immediately evaluate the requested change and the Contractor’s request for an NOI and proposal and transmit the Designer’s recommendation and those of the Resident Engineer by written memorandum or telephone, if the situation warrants, to the University of Massachusetts Project Manager or Project Engineer.

2.05.1 THE UNIVERSITY OF MASSACHUSETTS AMHERST PROJECT MANAGER (PM) SHALL

If the University of Massachusetts Amherst PM agrees with the request for change and the Contractor’s proposal it shall promptly issue and NOI using the University of Massachusetts NOI form and forward the NOI to the Contractor, with copies to the Designer and the Resident Engineer. It is mandatory that, upon receipt of said NOI, the Contractor proceed with the order of work.

If the University of Massachusetts Amherst PM does not agree with the request for change or the Contractor’s proposal it shall notify the requestor and all other parties in writing.
SECTION 3. SUBMISSION AND DISPOSITION OF UNIVERSITY OF MASSACHUSETTS AMHERST FORM 5
(UMA FORM 5)

3.01 THE CONTRACTOR SHALL:

a) Complete applicable portions of Section I of Form 5 (one (1) original green sheet unless otherwise instructed by the Awarding Authority).
b) If there is sufficient room in the space provided under section I (b) of the Form 5, attach to the form a statement giving reasons for, location of, and a general description of the proposed change including a reference to the plans and specifications, if possible.
c) Submit proposed method of compensation, as set forth in Article VII of the General Conditions of the Contract and in Section II of the Form 5. Submit a cost breakdown with the requested change as outlined in Article VII of the General conditions of the Contract. The breakdown of all filed sub-contractors shall be separated from the General Contractor’s breakdown and both are required to be on properly identifiable letterhead stationary, and signed showing (a) quantities and costs utilizing unit pricing, (b) the classification and hours of labor, fringe benefits and the complete breakdown showing unit cost of material and equipment, and (c) any other allowable costs as set forth in Article VII. See also Section 5, below. Upon completion of the work, changes initially authorized by the NOI on a “(c) Time and Materials basis” must be adjusted by the University of Massachusetts Daily Time and Material Report Forms.
d) If additional time is requested, furnish an explanation with breakdown. Extensions of time shall not be granted on a retroactive basis because of changes.
e) Each change must be all-inclusive as to all costs and all time extensions.
f) The General Contractor shall review all cost breakdowns being submitted by its suppliers and subcontractors and check them to insure the information being submitted is accurate and mathematically correct.
g) Deliver one (1) Form 5, complete in accordance with these procedures to the University of Massachusetts Project Manager.

3.02 THE RESIDENT ENGINEER/UNIVERSITY OF MASSACHUSETTS PM (IF NO RESIDENT ENGINEER)
SHALL:

a) Note the receipt of Form 5 in the record of NOIs/Change Orders, diary, and daily report.
b) Inform the Designer, the University of Massachusetts Project Manager (if applicable) and the Project Engineer of the receipt of Form 5.
c) Review the Form 5, accompanying backup documentation and other relevant materials and determine whether the requested change is or is not covered under the contract.
d) Review both quantities and prices of labor and materials and recommend corrections or changes. Check to make sure the required breakdowns are attached from all subcontractors on properly identifiable letterhead.
e) If any request is inaccurate, incomplete, contains insufficient credits due to the University of Massachusetts or is otherwise unacceptable, the Resident Engineer shall note the return of the Form 5 in the record of NOIs/Change Orders, diary, daily report and return the Form 5 to the General Contractor for correction, unsigned by the Resident Engineer, and detail the reasons for returning the Form 5.
f) Maintain accurate records indicating particulars involving additional work, credit due, substitutions, delays, work stoppage, and other conditions associated with any potential or actual request for a change, NOI or Change Order.
g) If the Resident Engineer recommends approval of the Form 5, the Resident Engineer shall sign Section III of the Form 5 and attach a written statement addressing each of the eight (8) questions listed in the following section, Section 3.03.

h) If the Resident Engineer does not recommend approval of the request, he or she shall attach a detailed letter setting forth the reasons for disapproval. Forward the four (4) originals of Form 5 and two (2) copies, without the Resident Engineer’s signature on the form, along with the letter detailing the reason for disapproval to the Designer.

3.03 THE DESIGNER SHALL:

a) Review the Form 5, accompanying backup documentation and other relevant materials and determine whether the requested change is or is not covered under the contract.

b) If the Designer recommends approval of the Form 5, complete applicable portion of Section III of Form 5 and attach its letter of recommendation which must include responses to each of the following eight (8) statements.
   1) If such change request involves any substitution or elimination of materials, fixtures or equipment, state the reasons why such components were included in the first instance and the reason for substitution or elimination, and if the change request is of any other nature, the reasons for such change, giving justification therefore. The designer shall state why all changes are necessary.
   2) If the change involves additional work, state why work was not covered by the plans and specifications. Plan and specification references shall be stated.
   3) Review the contract documents and determine if all applicable credits due the Commonwealth/University of Massachusetts Amherst are included and if salvageable.
   4) A statement of concurrence that the description of the work in Section 1 (h) of Form 5 is accurate.
   5) The Designer has examined the Contractor’s Proposal and finds the cost to be reasonable and mathematically correct. Indicate which quantities and/or costs appear unreasonable or excessive.
   6) If applicable make a recommendation on the Contractor’s request for additional time.
   7) If the work was performed under protest, pertinent correspondence shall be attached to the original Form 5.
   8) References to date and amount of any NOI(s) or any previously approved not-to-exceed Form 5(s) issued, applicable to the change.

c) If recommending approval, forward the four (4) original green sheets plus the (2) copies of the Form 5, all with original signatures to the University of Massachusetts Amherst along with the Designer’s recommendation.

d) If the Designer disapproves the request, the Designer shall within seven (7) calendar days attach a detailed letter setting forth its reasons for disapproval. Forward the four (4) originals of Form 5 and two (2) copies without the Designer’s signature on the form along with its letter detailing its reason for disapproval to the University of Massachusetts Amherst.

3.04 UNIVERSITY OF MASSACHUSETTS AMHERST PM SHALL:
a) Notify all parties if funds are insufficient to cover the change and return to the Contractor, through the Resident Engineer (if applicable), any request that is incomplete without proper details or recommendations.
b) The Form 5 shall be logged and given a change request number. The numbering will be in numerical sequence.
c) If the Form 5 is approved, the University of Massachusetts Amherst PM shall issue a Purchase Order to the General Contractor.
d) If the University of Massachusetts PM disapproves the request, it shall notify the Contractor, the Resident Engineer and the Designer in writing. In such an event the Contractor may within 30 days from receipt of notice, appeal such action to the Director of Facilities Planning (see G.L. chapter 7, section 42G). Failure to appeal within 30 days shall preclude any further claim of the Contractor for a contract adjustment. The Director of Facilities Planning shall be considered the chief executive officer referred to in G.L. Chapter 30, Section 39Q (1) (a).
e) Further change order appeal proceedings shall be governed by the provisions of G.L. Chapter, section 39Q, and by the terms of the Contract including Article VII, Section 5 relating to mandatory mediation procedures.

SECTION 4. AUTHORITY TO APPROVE REQUESTS FOR CHANGE

4.01 THE DIRECTOR OF FACILITIES PLANNING’S APPROVAL SHALL BE REQUIRED WHENEVER

a) The cumulative cost of previously approved NOIs and approved Form 5s exceeds five percent of the original contract award price; or

b) The estimate for the work on the NOI or Form 5 exceeds $5,000.

4.02 WITH THE PRIOR WRITTEN APPROVAL OF THEIR ASSISTANT DIRECTOR FOR FACILITIES PLANNING, THE UNIVERSITY OF MASSACHUSETTS AMHERST PM SHALL APPROVE CHANGE ORDERS FOR THE UNIVERSITY OF MASSACHUSETTS AMHERST WHEN:

a) The cumulative cost of previously approved NOIs and approved Form 5s is less than five percent of the original contract award price; or

b) The estimate for the NOI or Form 5 is less than $5,000.

SECTION 5. MISCELLANEOUS DIRECTION FOR COMPUTING COSTS FOR CHANGES IN WORK

5.01 SHIPPING, STORAGE AND HANDLING COSTS AND MATERIALS AND EQUIPMENT INVOLVED IN A CHANGE IN WORK MAY BE INCLUDED IN THE COSTS FOR CHANGE, IF ITEMIZED AND ACCOMPANIED BY COPIES OF PAID INVOICES.

5.02 THEALLOWANCE FOR OVERHEAD PROVIDED IN ARTICLE VII SECTION 2 SHALL BE CONSIDERED TO INCLUDE ALL HAND AND POWER TOOLS NORMALLY REQUIRED IN THE PERFORMANCE OF THE BASE BID WORK, THE COST OF THE CONTRACTOR’S SUPERINTENDENT, THE CONTRACTOR’S ADMINISTRATION COSTS. AND THE CONTRACTOR’S ESTIMATING COSTS

5.03 MAJOR ITEMS OF EQUIPMENT, SPECIALIZED TOOLS, AND ORDINARY MATERIALS AND EQUIPMENT USED OR CONSUMED ON THE CHANGE ORDER WORK, WHETHER RENTED OR
OWNED BY THE CONTRACTOR, ME BE INCLUDED IN THE COST OF THE CHANGE PROVIDED CURRENT RENTAL RATES AND MATERIAL COSTS, SUPPORTED BY PAID INVOICES, ARE SUBMITTED AS BACKUP TO THE CHANGE WHEN ITEMIZED.

5.04 THE UNIVERSITY OF MASSACHUSETTS PM MAY APPROVE LUMP SUM CHANGE ORDER REQUESTS ON CHANGES COSTING $1,000 OR LESS, WITHOUT REQUIRING THE CONTRACTOR TO PROVIDES A BREAKDOWN FOR THE COSTS INCURRED ON THE CHANGE. THE UNIVERSITY OF MASSACHUSETTS PM RESERVES THE RIGHT TO REQUIRE COST BREAKDOWN AND INVOICES FROM THE CONTRACTOR ON ALL CHANGES. BREAKDOWNS ARE REQUIRED FOR ALL UNIT PRICE CHANGES (COST PER ITEM) AND TIME AND MATERIAL CHANGE ORDERS REGARDLESS OF THE COST.

5.05 CONTRACTORS SHALL MEET THE FOLLOWING GUIDELINES WHEN SUBMITTING COST BREAKDOWNS FOR LABOR:
   a) The Contractor must designate the name of trade, and the number of hours times the base journeyman rate. The foreman rate should only used and pro-rated as provided for in the union rules.
   b) Insurance and payroll taxes shall be identified as a percentage, applied to the total labor rate. The University of Massachusetts allows 30% to be used for insurance and taxes. Any increase in this percentage must be supported by a written breakdown of all insurance and taxes applied to each particular trade. No overhead and profit is allowed on insurance and taxes. (see General Conditions, Article VII, section 2).
   c) Hourly benefit amounts such as health, welfare, and pensions must be identified separately.
   d) When overtime work is involved, insurance charges and benefits are based on straight time only.
   e) If travel is involved, it should be submitted as provided by the union regulations, this, in most cases, is based on mileage. No overhead and profit will be paid on travel.
   f) Whenever a subcontractor is involved, a complete and separate breakdown must be submitted by the subcontractor for its portion of work. Non filed subcontractors should not include overhead and profit on their breakdown.
   g) All breakdowns should be legible, submitted on letterhead and signed by an authorized representative of the Contractor. This applies to all Subcontractors and General Contractors.
   h) Credits should always include a bond reduction

5.06 GENERAL CONTRACTOR’S BOND PREMIUM SHALL BE INCLUDED AT THE FOLLOWING RATES. IF A CONTRACTOR’S BOND RATE DIFFERS FROM THIS LIST VERIFICATION FROM THE BOND CARRIER MUST BE SUBMITTED SHOWING THE ACTUAL RATE.

<table>
<thead>
<tr>
<th>Contract Price</th>
<th>Rates per Thousand</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Contracts up to $500,000</td>
<td>$14.40</td>
</tr>
<tr>
<td>b) $500,000 to $2,500,000</td>
<td>$ 8.70</td>
</tr>
<tr>
<td>c) $2,500,000 to $5,000,000</td>
<td>$ 6.90</td>
</tr>
<tr>
<td>d) $5,000,000 to $7,000,000</td>
<td>$ 6.30</td>
</tr>
<tr>
<td>e) $7,500,000 and up</td>
<td>$ 5.76</td>
</tr>
</tbody>
</table>

5.08 IF A CONTRACTOR DESIRES TO BE COMPENSATED AS AUTHORIZED WORK PROGRESSES, IT SHALL, AFTER RECEIPT OF AN NOI, IMMEDIATELY SUBMIT A UMA FORM 5 AS OUTLINED IN PARAGRAPH 3.01.
CONTRACTOR’S WEEKLY WORKFORCE REPORT

UNIVERSITY OF MASSACHUSETTS AMHERST

UMA No.____________________ Project Number _________________

Project Name ________________________________________________

Project Location _____________________________________________

Name of General Contractor ________________________________

Minority Goal %________

Name of Contractor Filing Report _____________________________

Address ___________________________________________________ Women Goal %________

Week Ending _______________ Report No. ______________________ Date Work

Began __________________

NOTE: Min. = Minority  Wom. = Women  □ Check here if this is a final report  Date

work completed ____________
<table>
<thead>
<tr>
<th>Job Category</th>
<th>Number of Employees</th>
<th>Number of Employees Who Are</th>
<th>Total Weekly Workforce Hours</th>
<th>Total Weekly Workforce Hours</th>
<th>Weekly % Workforce Hours</th>
<th>Total Workforce Hours To Date</th>
<th>Total Workforce Hours To Date</th>
<th>% of Workforce Hours To Date</th>
</tr>
</thead>
</table>

**TOTALS:**

UMA No. ______________ Project Name __________________________________________ General Contractor ________________

Mail to: University of Massachusetts, Amherst Facilities Planning/Contract Manager

Physical Plant Building

360 Campus Center Way Authorized Signature _______________ Date ________________

Amherst, MA 01003

Print Name __________________________ Telephone No. __________________________

Title ______________________________ Fax No. ______________________________

Contractor’s Weekly Workforce Report - Revised 10/01

180
MINORITIES/WOMEN IN CONTRACTOR’S WEEKLY WORKFORCE REPORT

THE UNIVERSITY OF MASSACHUSETTS AMHERST

UMA No. ____________________________ Project No. ____________________________

Project Name ________________________________________________________________

Name of General Contractor ___________________________________________________

Project Location ______________________________________________________________

Name of Contractor Filing Report ______________________________________________

Address ______________________________________________________________________

Week Ending __________________________ Report No. _____________________________

<table>
<thead>
<tr>
<th>JOB CATEGORY</th>
<th>NAME OF EMPLOYEE</th>
<th>MINORITY GROUP</th>
<th>GENDER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

In contract Article XII, “Minority” refers to: Asian-Americans, Blacks, Western Hemisphere Hispanics, Native Americans, and Cape Verdians

Minorities/Women in Contractor’s Weekly Workforce Report - Revised 10/01
WEEKLY PAYROLL REPORT FORM

THE UNIVERSITY OF MASSACHUSETTS AMHERST

UMA Project No. __________________ Project No. _____________________________
Project Name ____________________________
Project Location ___________________________
Name of General Contractor ________________________________

☐ Check here if this is a final report

Name of Contractor Filing Report ___________________________
Address ____________________________

Week Ending ______________ Report No. __________ Date Work Began __________ Date work completed __________

<table>
<thead>
<tr>
<th>Employee Name &amp; Address</th>
<th>Work Classification</th>
<th>Hours Worked</th>
<th>(A) Total Hours</th>
<th>(B) Hourly Base Wage</th>
<th>Employer Contributions</th>
<th>(F) [B+C+D+E] Hourly Total Wage (prev. wage)</th>
<th>(G) [A*F] Weekly Total Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(C) Health &amp; Welfare</td>
<td>(D) Pension</td>
<td>(E) Supp. Unemp.</td>
</tr>
</tbody>
</table>

NOTE: Every contractor and subcontractor is required to submit a copy of their weekly payroll records to University of Massachusetts Amherst. **Handwritten payroll records will not be accepted.** An excel format Weekly payroll report form can be found on the Procurement website:

http://www.umass.edu/procurement/constructionprojects.htm

The undersigned states under the pains & penalties of perjury that the above provided and attached information is a true and accurate record of each person employed on the project and the hours worked and wages paid to each such employee, including payments to the referenced benefits. M.G.L. c. 149 §27B.

Authorized signature ________________________________
Print Name ____________________________ Print Title ______________________________

Mail to: University of Massachusetts Amherst
Procurement Manager/Administrative Services
Physical Plant Building
360 Campus Center Way
Amherst, MA 01003
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

AWARDING AUTHORITY: UNIVERSITY OF MASSACHUSETTS BUILDING AUTHORITY

CONTRACT NUMBER: UMA17-16

DESCRIPTION OF WORK: BOWDITCH HALL ROOF REPLACEMENT

JOB LOCATION: UMASS AMHERST

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
<table>
<thead>
<tr>
<th>Classification</th>
<th>Effective Date</th>
<th>Base Wage</th>
<th>Health</th>
<th>Pension</th>
<th>Supplemental Unemployment</th>
<th>Total Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2 AXLE) DRIVER - EQUIPMENT TEAMSTERS JOINT Council NO. 10 ZONE B</td>
<td>12/01/2016</td>
<td>$32.15</td>
<td>$10.91</td>
<td>$10.89</td>
<td>0.00</td>
<td>$53.95</td>
</tr>
<tr>
<td>(3 AXLE) DRIVER - EQUIPMENT TEAMSTERS JOINT Council NO. 10 ZONE B</td>
<td>12/01/2016</td>
<td>$32.22</td>
<td>$10.91</td>
<td>$10.89</td>
<td>0.00</td>
<td>$54.02</td>
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<tr>
<td>(4 &amp; 5 AXLE) DRIVER - EQUIPMENT TEAMSTERS JOINT Council NO. 10 ZONE B</td>
<td>12/01/2016</td>
<td>$32.34</td>
<td>$10.91</td>
<td>$10.89</td>
<td>0.00</td>
<td>$54.14</td>
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<tr>
<td>ADS/SUBMERSIBLE PILOT PILE DRIVER LOCAL 56 (ZONE 3)</td>
<td>08/01/2015</td>
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<td>$9.80</td>
<td>$18.17</td>
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<td>$118.48</td>
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<tr>
<td>AIR TRACK OPERATOR LABORERS - ZONE 3 (BUILDING &amp; SITE)</td>
<td>12/05/2016</td>
<td>$30.33</td>
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<tr>
<td>AIR TRACK OPERATOR (HEAVY &amp; HIGHWAY) LABORERS - ZONE 3 (HEAVY &amp; HIGHWAY)</td>
<td>12/01/2016</td>
<td>$30.25</td>
<td>$7.60</td>
<td>$10.62</td>
<td>0.00</td>
<td>$48.47</td>
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<tr>
<td>ASBESTOS WORKER (PIPES &amp; TANKS) HEAT &amp; FROST INSULATORS LOCAL 6 (SPRINGFIELD)</td>
<td>12/01/2016</td>
<td>$30.51</td>
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<td>$48.61</td>
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<tr>
<td>ASPHALT RAKER LABORERS - ZONE 3 (BUILDING &amp; SITE)</td>
<td>12/05/2016</td>
<td>$29.83</td>
<td>$7.60</td>
<td>$12.50</td>
<td>0.00</td>
<td>$49.93</td>
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<tr>
<td>ASPHALT RAKER (HEAVY &amp; HIGHWAY) LABORERS - ZONE 3 (HEAVY &amp; HIGHWAY)</td>
<td>12/01/2016</td>
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<td>AUTOMATIC GRADER-EXCAVATOR (RECLAIMER) OPERATING ENGINEERS LOCAL 98</td>
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<td>BACKHOE/FRONT-END LOADER OPERATOR OPERATING ENGINEERS LOCAL 98</td>
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<td>$10.58</td>
<td>$12.38</td>
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<td>$56.64</td>
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<td>BARCO-TYPE JUMPING TAMPER LABORERS - ZONE 3 (BUILDING &amp; SITE)</td>
<td>12/05/2016</td>
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<td>$7.60</td>
<td>$12.50</td>
<td>0.00</td>
<td>$49.93</td>
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For apprentice rates see "Apprentice- PILE DRIVER"
<table>
<thead>
<tr>
<th>Classification</th>
<th>Effective Date</th>
<th>Base Wage</th>
<th>Health</th>
<th>Pension</th>
<th>Supplemental Unemployment</th>
<th>Total Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BATCH/CEMENT PLANT - ON SITE</strong></td>
<td>12/01/2016</td>
<td>$33.15</td>
<td>$10.58</td>
<td>$12.38</td>
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<td><strong>OPERATING ENGINEERS LOCAL 98</strong></td>
<td>06/01/2017</td>
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For apprentice rates see "Apprentice- LABORER"

| **BLOCK PAVER, RAMMER / CURB SETTER**                                        | 12/05/2016     | $30.33    | $7.60  | $12.50  | 0.00                      | $50.43     |
| **LABORERS - ZONE 3 (BUILDING & SITE)**                                       |                |           |        |         |                          |            |

For apprentice rates see "Apprentice- LABORER"

| **BLOCK PAVER, RAMMER / CURB SETTER (HEAVY & HIGHWAY)**                       | 12/01/2016     | $30.25    | $7.60  | $10.62  | 0.00                      | $48.47     |
| **LABORERS - ZONE 3 (HEAVY & HIGHWAY)**                                       |                |           |        |         |                          |            |

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

| **BOILER MAKER**                                                             | 01/01/2017     | $42.92    | $6.97  | $16.21  | 0.00                      | $66.10     |
| **BOILERMAKERS LOCAL 29**                                                    |                |           |        |         |                          |            |

### Apprentice - BOILERMAKER - Local 29

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### Notes:

Apprentice to Journeyworker Ratio: 1:5

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### BRICK/PLASTER/CEMENT MASON - Local 3 Springfield/Pittsfield

**Effective Date:** 02/27/2017

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**Notes:**

Apprentice to Journeyworker Ratio: 1:5

---

**BULLDOZER/POWER SHOVEL/TREE SHREDDER**

/CLAM SHELL OPERATING

**ENGINEERS LOCAL 98**

12/01/2016: $33.68 | $10.58 | $12.38 | $0.00 | $56.64
06/01/2017: $34.29 | $10.58 | $12.65 | $0.00 | $57.52
12/01/2017: $34.89 | $10.58 | $12.92 | $0.00 | $58.39
06/01/2018: $35.50 | $10.58 | $13.19 | $0.00 | $59.27
12/01/2018: $36.10 | $10.58 | $13.46 | $0.00 | $60.14
06/01/2019: $36.61 | $10.58 | $13.73 | $0.00 | $60.92
12/01/2019: $37.21 | $10.58 | $14.00 | $0.00 | $61.79

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 3 (BUILDING & SITE)

12/05/2016: $29.83 | $7.60 | $12.50 | $0.00 | $49.93

For apprentice rates see "Apprentice- LABORER"

---

**CARPENTER**

CARPENTERS LOCAL 108 - HAMPDEN HAMPSHIRE FRANKLIN

02/27/2017: $34.56 | $8.26 | $15.00 | $0.00 | $57.82
09/04/2017: $35.56 | $8.26 | $15.00 | $0.00 | $58.82
03/05/2018: $36.56 | $8.26 | $15.00 | $0.00 | $59.82
09/05/2018: $37.60 | $8.26 | $15.00 | $0.00 | $60.86
03/04/2019: $38.64 | $8.26 | $15.00 | $0.00 | $61.90
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**Notes:**

** 1: 1-5/2: 6-8/3:9-11/Steps: 6 mos (600 hrs)/rates by step**

Apprentice to Journeyworker Ratio:**

CEMENT MASONRY/PLASTERING

**BRICKLAYER LOCAL 3 (SPRINGFIELD/PITTSFIELD)**

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<td>20170317-023</td>
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### CEMENT MASONRY/PLASTERING - Springfield/Pittsfield

#### Apprentice Base Wage

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#### Apprentice Base Wage

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### 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 3 (BUILDING & SITE)**

For apprentice rates see "Apprentice- LABORER"

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#### COMPRESSOR OPERATOR

**OPERATING ENGINEERS LOCAL 98**

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

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#### CRANE OPERATOR

**OPERATING ENGINEERS LOCAL 98**

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

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#### DELEADER (BRIDGE)

**PAINTERS LOCAL 35 - ZONE 3**

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

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### Apprentice - PAINTER Local 35 - BRIDGES/TANKS

**Effective Date:** 01/01/2017

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**Notes:**
- Steps are 750 hrs.
- Apprentice to Journeyworker Ratio: 1:1

**DEMO: ADZEMAN**

LABORERS - ZONE 3 (BUILDING & SITE)

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For apprentice rates see "Apprentice- LABORER"

**DEMO: BACKHOE/LOADER/HAMMER OPERATOR**

LABORERS - ZONE 3 (BUILDING & SITE)

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For apprentice rates see "Apprentice- LABORER"

**DEMO: BURNERS**

LABORERS - ZONE 3 (BUILDING & SITE)

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For apprentice rates see "Apprentice- LABORER"
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<td>$65.00</td>
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For apprentice rates see "Apprentice- LABORER"

| DEMO: JACKHAMMER OPERATOR LABORERS - ZONE 3 (BUILDING & SITE) | 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 | $61.00 |
| | 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 3 (BUILDING & SITE) | 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 | $60.95 |
| | 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"

| DIVER | 08/01/2015 | $60.34 | $9.80 | $18.17 | $0.00 | $88.31 |
| PILE DRIVER LOCAL 56 (ZONE 3) | For apprentice rates see "Apprentice- PILE DRIVER"

| DIVER TENDER | 08/01/2015 | $43.10 | $9.80 | $18.17 | $0.00 | $71.07 |
| PILE DRIVER LOCAL 56 (ZONE 3) | For apprentice rates see "Apprentice- PILE DRIVER"

| DIVER TENDER (EFFLUENT) | 08/01/2015 | $64.65 | $9.80 | $18.17 | $0.00 | $92.62 |
| PILE DRIVER LOCAL 56 (ZONE 3) | For apprentice rates see "Apprentice- PILE DRIVER"

| DIVER/SLURRY (EFFLUENT) | 08/01/2015 | $90.51 | $9.80 | $18.17 | $0.00 | $118.48 |
| PILE DRIVER LOCAL 56 (ZONE 3) | For apprentice rates see "Apprentice- PILE DRIVER"

<p>| ELECTRICIAN (Including Core Drilling) | 01/01/2017 | $39.51 | $9.35 | $10.84 | $0.00 | $59.70 |
| ELECTRICIANS LOCAL 7 |</p>
<table>
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<th>Effective Date</th>
<th>Base Wage</th>
<th>Health</th>
<th>Pension</th>
<th>Supplemental Unemployment</th>
<th>Total Rate</th>
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<td>$45.79</td>
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**Notes:**
Pre-5/31/11 Begins at Step 3 $39.72/4$41.75/$46.38/6$48.60
Steps 1-2 are 1000 hrs; Steps 3-6 are 1500 hrs.

**Apprentice to Journeyworker Ratio:** 2:3****

---

**ELEVATOR CONSTRUCTOR**

**ELEVATOR CONSTRUCTORS LOCAL 41**

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<th>Effective Date</th>
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**Notes:**
Apprentice to Journeyworker Ratio: 2:3****

---

**ELEVATOR CONSTRUCTOR HELPER**

**ELEVATOR CONSTRUCTORS LOCAL 41**

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**Notes:**
Apprentice to Journeyworker Ratio: 1:1

---

**FENCE & GUARD RAIL ERECTOR (HEAVY & HIGHWAY)**

**LABORERS - ZONE 3 (HEAVY & HIGHWAY)**

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<th>Total Rate</th>
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**Notes:**
For apprentice rates see "Apprentice - LABORER (Heavy and Highway)"

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**FIELD ENG.INST./ROD-BLDG,SITE,HVY/HWY**

**OPERATING ENGINEERS LOCAL 98**

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**Notes:**
For apprentice rates see "Apprentice - OPERATING ENGINEERS LOCAL 98"

---

**FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY**

**OPERATING ENGINEERS LOCAL 98**

<table>
<thead>
<tr>
<th>Effective Date</th>
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**Notes:**
For apprentice rates see "Apprentice - OPERATING ENGINEERS LOCAL 98"

---

**FIELD ENG.SURVEY CHIEF-BLDG,SITE,HVY/HWY**

**OPERATING ENGINEERS LOCAL 98**

<table>
<thead>
<tr>
<th>Effective Date</th>
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**Notes:**
For apprentice rates see "Apprentice - OPERATING ENGINEERS LOCAL 98"

---

**FIRE ALARM INSTALLER**

**ELECTRICIANS LOCAL 7**

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**Notes:**
For apprentice rates see "Apprentice - ELECTRICIAN"
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Apprentice - OPERATING ENGINEERS - Local 98 Class 3

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**Notes:**
- Steps 1-2 are 1000 hrs.; Steps 3-4 are 2000 hrs.

Apprentice to Journeyworker Ratio: 1:6

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**Notes:**
- Steps are 750 hrs.

Fork Lift: Operating Engineers Local 98

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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

For apprentice rates see "Apprentice- OPERATING ENGINEERS"
### GLAZIER - Local 1333

**Effective Date:** 06/01/2016

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**Notes:**
- Apprentice to Journeyworker Ratio: 1:3

**For apprentice rates see "Apprentice- OPERATING ENGINEERS"**

### GRADER/TRENCHING MACHINE/DERRICK

**OPERATING ENGINEERS LOCAL 98**

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**For apprentice rates see "Apprentice- SHEET METAL WORKER"**

### HVAC (DUCTWORK)

**SHEETMETAL WORKERS LOCAL 63**

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**For apprentice rates see "Apprentice- ELECTRICIAN"**

### HVAC (ELECTRICAL CONTROLS)

**ELECTRICIANS LOCAL 7**

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**For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"**

### HVAC (TESTING AND BALANCING - AIR)

**SHEETMETAL WORKERS LOCAL 63**

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**For apprentice rates see "Apprentice- SHEET METAL WORKER"**

### HVAC (TESTING AND BALANCING - WATER)

**PLUMBERS & PIPEFITTERS LOCAL 104**

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**For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"**

### HVAC MECHANIC

**PLUMBERS & PIPEFITTERS LOCAL 104**

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<td>09/17/2018</td>
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**For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"**
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For apprentice rates see *Apprentice- LABORER (Heavy and Highway)*

| INSULATOR (PIPES & TANKS) | 09/01/2016 | $36.07 | $11.75 | $14.20 | $0.00 | $62.02 |
| 09/01/2017 | $37.67 | $11.75 | $14.20 | $0.00 | $63.62 |
| 09/01/2018 | $39.47 | $11.75 | $14.20 | $0.00 | $65.42 |
| 09/01/2019 | $41.47 | $11.75 | $14.20 | $0.00 | $67.42 |

For apprentice rates see *Apprentice- INSULATOR (Pipes & Tanks) - Local 6 Springfield*.

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Notes:
- Steps are 1 year

Apprentice to Journeyworker Ratio: 1:4

| IRONWORKER/WELDER | 03/16/2017 | $32.39 | $7.80 | $19.60 | $0.00 | $59.79 |

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<td>6</td>
<td>90</td>
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Notes:
- Structural 1:6; Ornamental 1:4

Apprentice to Journeyworker Ratio:

| JACKHAMMER & PAVING BREAKER OPERATOR | 12/05/2016 | $29.83 | $7.60 | $12.50 | $0.00 | $49.93 |

Issue Date: 03/17/2017  Wage Request Number: 20170317-023  Page 13 of 29
### LABORER - LABORERS - ZONE 3 (BUILDING & SITE)

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For apprentice rates see "Apprentice- LABORER"

### Step Apprentice to Journeyworker Ratio: 1:5

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Notes:

Apprentice to Journeyworker Ratio: 1:5

### LABORER (HEAVY & HIGHWAY) - LABORERS - ZONE 3 (HEAVY & HIGHWAY)

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For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

### Step Apprentice to Journeyworker Ratio: 1:5

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</table>

Notes:

Apprentice to Journeyworker Ratio: 1:5

### LABORER: CARPENTER TENDER - LABORERS - ZONE 3 (BUILDING & SITE)

<table>
<thead>
<tr>
<th>Effective Date</th>
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<th>Health</th>
<th>Pension</th>
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<th>Total Rate</th>
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<tr>
<td>12/05/2016</td>
<td>$29.58</td>
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For apprentice rates see "Apprentice- LABORER"

### LABORER: CEMENT FINISHER TENDER - LABORERS - ZONE 3 (BUILDING & SITE)

<table>
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<tr>
<th>Effective Date</th>
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<td>12/05/2016</td>
<td>$29.83</td>
<td>$7.60</td>
<td>$12.50</td>
<td>$0.00</td>
<td>$49.93</td>
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For apprentice rates see "Apprentice- LABORER"

### LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER - LABORERS - ZONE 3 (BUILDING & SITE)

<table>
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<tr>
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<tr>
<td>12/05/2015</td>
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For apprentice rates see "Apprentice- LABORER"

### LABORER: MASON TENDER - LABORERS - ZONE 3 (BUILDING & SITE)

<table>
<thead>
<tr>
<th>Effective Date</th>
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<th>Pension</th>
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For apprentice rates see "Apprentice- LABORER"

### LABORER: MASON TENDER (HEAVY & HIGHWAY) - LABORERS - ZONE 3 (HEAVY & HIGHWAY)

<table>
<thead>
<tr>
<th>Effective Date</th>
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<th>Pension</th>
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<tr>
<td>12/01/2016</td>
<td>$29.75</td>
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For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

### LABORER: MULTI-TRADE TENDER - LABORERS - ZONE 3 (BUILDING & SITE)

<table>
<thead>
<tr>
<th>Effective Date</th>
<th>Base Wage</th>
<th>Health</th>
<th>Pension</th>
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<th>Total Rate</th>
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</thead>
<tbody>
<tr>
<td>12/05/2016</td>
<td>$29.58</td>
<td>$7.60</td>
<td>$12.50</td>
<td>$0.00</td>
<td>$49.68</td>
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<td>Effective Date</td>
<td>Base Wage</td>
<td>Health</td>
<td>Pension</td>
<td>Supplemental Unemployment</td>
</tr>
<tr>
<td>----------------</td>
<td>---------------</td>
<td>-----------</td>
<td>--------</td>
<td>---------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>LABORER: TREE REMOVER</td>
<td>12/05/2016</td>
<td>$29.58</td>
<td>$7.60</td>
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<td>$0.00</td>
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</tbody>
</table>

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 | 12/05/2016 | $29.83 | $7.60 | $12.50 | $0.00 | $49.93 |

For apprentice rates see "Apprentice- LABORER"

| LASER BEAM OPERATOR (HEAVY & HIGHWAY) | 12/01/2016 | $29.75 | $7.60 | $10.62 | $0.00 | $47.97 |

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

| MARBLE & TILE FINISHERS | 02/27/2017 | $32.67 | $10.75 | $17.05 | $0.00 | $60.47 |

<table>
<thead>
<tr>
<th>CLASSIFICATION</th>
<th>EFFECTIVE DATE</th>
<th>APPRENTICE Base Wage</th>
<th>HEALTH</th>
<th>PENSION</th>
<th>SUPPLEMENTAL UNEMPLOYMENT</th>
<th>TOTAL RATE</th>
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<tr>
<td>LABORERS - ZONE 3 (BUILDING &amp; SITE)</td>
<td>02/27/2017</td>
<td>$16.34</td>
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Notes:

Apprentice to Journeyworker Ratio: 1:5

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<th>APPRENTICE Base Wage</th>
<th>HEALTH</th>
<th>PENSION</th>
<th>SUPPLEMENTAL UNEMPLOYMENT</th>
<th>TOTAL RATE</th>
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</thead>
<tbody>
<tr>
<td>MARBLE MASONS, TILELAYERS &amp; TERRAZZO MECH</td>
<td>02/27/2017</td>
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<td>$17.38</td>
<td>$0.00</td>
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<td>02/27/2017</td>
<td>$23.56</td>
<td>$10.75</td>
<td>$17.38</td>
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<td>02/27/2017</td>
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<td>02/27/2017</td>
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Notes:

Apprentice to Journeyworker Ratio: 1:5

Issue Date: 03/17/2017  Wage Request Number: 20170317-023  Page 15 of 29
<table>
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<th>Classification</th>
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<th>Base Wage</th>
<th>Health</th>
<th>Pension</th>
<th>Supplemental Unemployment</th>
<th>Total Rate</th>
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<tr>
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<td>06/01/2017</td>
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<td>$0.00</td>
<td>$60.14</td>
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<td>$10.58</td>
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<td>$0.00</td>
<td>$61.79</td>
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

| MECHANIC/WELDER/BOOM TRUCK               | 12/01/2016     | $33.15    | $10.58 | $12.38  | $0.00                     | $56.11     |
| OPERATING ENGINEERS LOCAL 98            | 06/01/2017     | $33.76    | $10.58 | $12.65  | $0.00                     | $57.99     |
|                                         | 12/01/2017     | $34.36    | $10.58 | $12.92  | $0.00                     | $58.76     |
|                                         | 06/01/2018     | $34.97    | $10.58 | $13.19  | $0.00                     | $59.61     |
|                                         | 12/01/2018     | $35.57    | $10.58 | $13.46  | $0.00                     | $60.39     |
|                                         | 06/01/2019     | $36.08    | $10.58 | $13.73  | $0.00                     | $61.12     |
|                                         | 12/01/2019     | $36.68    | $10.58 | $14.00  | $0.00                     | $61.79     |

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

| MILLWRIGHT (Zone 3)                     | 10/01/2016     | $33.24    | $9.90  | $18.25  | $0.00                     | $61.39     |
| MILLWRIGHTS LOCAL 1121 - Zone 3         | 04/01/2017     | $34.06    | $9.90  | $18.25  | $0.00                     | $62.21     |
|                                         | 10/01/2017     | $34.89    | $9.90  | $18.25  | $0.00                     | $63.04     |
|                                         | 04/01/2018     | $35.71    | $9.90  | $18.25  | $0.00                     | $63.86     |
|                                         | 10/01/2018     | $36.54    | $9.90  | $18.25  | $0.00                     | $64.69     |
|                                         | 04/01/2019     | $37.36    | $9.90  | $18.25  | $0.00                     | $65.51     |

**Apprentice - MILLWRIGHT - Local 1121 Zone 3**

**Effective Date - 10/01/2016**

<table>
<thead>
<tr>
<th>Step</th>
<th>percent</th>
<th>Apprentice Base Wage</th>
<th>Health</th>
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<th>Supplemental Unemployment</th>
<th>Total Rate</th>
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<td>75</td>
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**Effective Date - 04/01/2017**

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<th>Supplemental Unemployment</th>
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<td>75</td>
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<td>$55.69</td>
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**Notes:**
- Steps are 2,000 hours
- Apprentice to Journeyworker Ratio: 1:5

**MORTAR MIXER**

<table>
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<th>Classification</th>
<th>Effective Date</th>
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<th>Health</th>
<th>Pension</th>
<th>Supplemental Unemployment</th>
<th>Total Rate</th>
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<tbody>
<tr>
<td>LABORERS - ZONE 3 (BUILDING &amp; SITE)</td>
<td>12/05/2016</td>
<td>$29.83</td>
<td>$7.60</td>
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For apprentice rates see "Apprentice- LABORER"
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<th>Supplemental Unemployment</th>
<th>Total Rate</th>
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<tr>
<td>OILER *OPERATING ENGINEERS LOCAL 98 *</td>
<td>12/01/2016</td>
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<td>$0.00</td>
<td>$56.95</td>
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</tbody>
</table>

For apprentice rates see "Apprentice- OPERATING ENGINEERS" *

| OTHER POWER Driven EQUIPMENT - CLASS VI \*           | 12/01/2016     | $26.86    | $10.58 | $12.38  | $0.00                     | $49.82     |
|                                                     | 06/01/2017     | $27.47    | $10.58 | $12.65  | $0.00                     | $50.70     |
|                                                     | 12/01/2017     | $28.07    | $10.58 | $12.92  | $0.00                     | $51.57     |
|                                                     | 06/01/2018     | $28.68    | $10.58 | $13.19  | $0.00                     | $52.45     |
|                                                     | 12/01/2018     | $29.28    | $10.58 | $13.46  | $0.00                     | $53.32     |
|                                                     | 06/01/2019     | $29.79    | $10.58 | $13.73  | $0.00                     | $54.10     |
|                                                     | 12/01/2019     | $30.39    | $10.58 | $14.00  | $0.00                     | $54.97     |

For apprentice rates see "Apprentice- OPERATING ENGINEERS" *

| PAINTER (BRIDGES/TANKS) \* PAINTERS LOCAL 35 - ZONE 3 | 01/01/2017     | $51.41    | $7.85  | $16.10  | $0.00                     | $75.36     |

### Apprentice - PAINTER Local 35 - BRIDGES/TANKS

<table>
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<th>Effective Date - 01/01/2017</th>
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</thead>
<tbody>
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<tr>
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</tr>
<tr>
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<td>7</td>
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**Notes:**

- Steps are 750 hrs.

**Apprentice to Journeyworker Ratio: 1:1**

**PAINTER (SPRAY OR SANDBLAST, NEW) \***

<table>
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<th>Effective Date - 01/01/2017</th>
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</thead>
<tbody>
<tr>
<td>01/01/2017</td>
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</tbody>
</table>

*If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used."PAINTER LOCAL 35 - ZONE 3"
### Apprentice - PAINTER Local 35 Zone 3 - Spray/Sandblast - New

**Effective Date**: 01/01/2017

<table>
<thead>
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<th>Step</th>
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<th>Health</th>
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<th>Supplemental Unemployment</th>
<th>Total Rate</th>
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**Notes:**
- Steps are 750 hrs.
- **Apprentice to Journeyworker Ratio**: 1:1

### Apprentice - PAINTER Local 35 Zone 3 - Spray/Sandblast - Repaint

**Effective Date**: 01/01/2017

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**Notes:**
- Steps are 750 hrs.
- **Apprentice to Journeyworker Ratio**: 1:1

### PAINTER / TAPER (BRUSH, NEW) *

**Effective Date**: 01/01/2017

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**Notes:**
- Steps are 750 hrs.
- **Apprentice to Journeyworker Ratio**: 1:1

*If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used.*

---

**Issue Date**: 03/17/2017  
**Wage Request Number**: 20170317-023  
**Page 18 of 29**
### PAINTER - Local 35 Zone 3 - BRUSH NEW

**Effective Date:** 01/01/2017

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**Notes:**
- Steps are 750 hrs.
- Apprentice to Journeyworker Ratio: 1:1

### PAINTER / TAPER (BRUSH, REPAINT)

**Effective Date:** 01/01/2017

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**Notes:**
- Steps are 750 hrs.
- Apprentice to Journeyworker Ratio: 1:1

### PAINTER TRAFFIC MARKINGS (HEAVY/HIGHWAY)

**Effective Date:** 12/01/2016

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### PANEL & PICKUP TRUCKS DRIVER

**Effective Date:** 12/01/2012

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### PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK)

**Effective Date:** 08/31/2015

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### PILE DRIVER

**Effective Date:** 08/31/2015

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### Apprentice - PILE DRIVER - Local 56 Zone 3

#### Effective Date - 08/31/2015

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**Notes:** Apprentice wages shall be no less than the following Steps; (Same as set in Zone 1)

- $50.05
- $54.25
- $58.46
- $60.56
- $62.66
- $66.87

**Apprentice to Journeyworker Ratio:** 1:3

### PIPELAYER

**LABORERS - ZONE 3 (BUILDING & SITE)**

- For apprentice rates see "Apprentice - LABORER"

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### PIPELAYER (HEAVY & HIGHWAY)

**LABORERS - ZONE 3 (HEAVY & HIGHWAY)**

- For apprentice rates see "Apprentice - LABORER (Heavy and Highway)"

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### PLUMBER & PIPEFITTER

**PLUMBERS & PIPEFITERS LOCAL 104**

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## Classification: PLUMBER/PIPEFITTER - Local 104

### Apprentice - 03/17/2017

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### Notes: **1:1,2:5,3:9,4:12**

Apprentice to Journeyworker Ratio:**

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For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER".

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As of 9/1/09 Carpentry work on wood-frame residential WEATHERIZATION projects shall be paid the RESIDENTIAL WOOD FRAME CARPENTER rate.
## Carpenter (Residential Wood Frame) - 108 Hampden Hampshire

### Apprentice Rates

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**Effective Date - 04/01/2017**

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**Notes:**

**1:** 1-5, **2:** 6-8, **3:** 9-11

### Apprentice to Journeyworker Ratio:

**Ride-on Motorized Buggy Operator**

- **Laborers - Zone 3 (Building & Site)**
- Effective Date: 12/05/2016
- Rate: $29.83
- Health: $7.60
- Pension: $12.50
- Supplemental Unemployment: $0.00
- Total Rate: $49.93

For apprentice rates see "Apprentice - LABORER**"

**Roller Operator**

- Operating Engineers Local 98
- Effective Dates:
  - 12/01/2016: $32.54, $10.58, $12.38, $0.00, $55.50
  - 06/01/2017: $33.15, $10.58, $12.65, $0.00, $56.38
  - 12/01/2017: $33.75, $10.58, $12.92, $0.00, $57.25
  - 06/01/2018: $34.36, $10.58, $13.19, $0.00, $58.13
  - 12/01/2018: $34.96, $10.58, $13.46, $0.00, $59.00
  - 06/01/2019: $35.47, $10.58, $13.73, $0.00, $59.78
  - 12/01/2019: $36.07, $10.58, $14.00, $0.00, $60.65

For apprentice rates see "Apprentice - OPERATING ENGINEERS"

**Roofers (Coal Tar Pitch)**

- Roofers Local 248
- Effective Date: 10/16/2016
- Rate: $32.25
- Health: $9.41
- Pension: $13.25
- Supplemental Unemployment: $0.00
- Total Rate: $54.91

For apprentice rates see "Apprentice - ROOFER"

**Roofers (Incl. Roofer Waterproofing & Roofer Damproofing)**

- Roofers Local 248
- Effective Date: 10/16/2016
- Rate: $31.75
- Health: $9.41
- Pension: $12.75
- Supplemental Unemployment: $0.00
- Total Rate: $53.91
 Classification | Effective Date | Base Wage | Health | Pension | Supplemental Unemployment | Total Rate 
---|---|---|---|---|---|---
 Apprentice - *ROOFER - Local 248* | 10/16/2016 | | | | | 
 Step | percent | Apprentice Base Wage | Health | Pension | Supplemental Unemployment | Total Rate 
---|---|---|---|---|---|---
 1 | 60 | $19.05 | $9.41 | $0.00 | $0.00 | $28.46 
 2 | 65 | $20.64 | $9.41 | $12.75 | $0.00 | $42.80 
 3 | 70 | $22.23 | $9.41 | $12.75 | $0.00 | $44.39 
 4 | 75 | $23.81 | $9.41 | $12.75 | $0.00 | $45.97 
 5 | 80 | $25.40 | $9.41 | $12.75 | $0.00 | $47.56 
 6 | 85 | $26.99 | $9.41 | $12.75 | $0.00 | $49.15 
 7 | 90 | $28.58 | $9.41 | $12.75 | $0.00 | $50.74 
 8 | 95 | $30.16 | $9.41 | $12.75 | $0.00 | $52.32 

Notes: 
Steps are 750 hrs. Roofer (Tear Off) 1:1; Same as above 

**Apprentice to Journeyworker Ratio: 1:3** 

**ROOFER SLATE / TILE / PRECAST CONCRETE** 
*ROOFERS LOCAL 248* 
10/16/2016 | $32.25 | $9.41 | $13.25 | $0.00 | $54.91 

For apprentice rates see "Apprentice - ROOFER" 

**SCRAPER** 
*OPERATING ENGINEERS LOCAL 98* 
12/01/2016 | $33.15 | $10.58 | $12.38 | $0.00 | $56.11 
06/01/2017 | $33.76 | $10.58 | $12.65 | $0.00 | $56.99 
12/01/2017 | $34.36 | $10.58 | $12.92 | $0.00 | $57.86 
06/01/2018 | $34.97 | $10.58 | $13.19 | $0.00 | $58.74 
12/01/2018 | $35.57 | $10.58 | $13.46 | $0.00 | $59.61 
06/01/2019 | $36.08 | $10.58 | $13.73 | $0.00 | $60.39 
12/01/2019 | $36.68 | $10.58 | $14.00 | $0.00 | $61.26 

For apprentice rates see "Apprentice - OPERATING ENGINEERS" 

**SELF-POWERED ROLLERS AND COMPACTORS** 
*(TAMPERS)* 
*OPERATING ENGINEERS LOCAL 98* 
12/01/2016 | $32.54 | $10.58 | $12.38 | $0.00 | $55.50 
06/01/2017 | $33.15 | $10.58 | $12.65 | $0.00 | $56.38 
12/01/2017 | $33.75 | $10.58 | $12.92 | $0.00 | $57.25 
06/01/2018 | $34.36 | $10.58 | $13.19 | $0.00 | $58.13 
12/01/2018 | $34.96 | $10.58 | $13.46 | $0.00 | $59.00 
06/01/2019 | $35.57 | $10.58 | $13.73 | $0.00 | $59.78 
12/01/2019 | $36.07 | $10.58 | $14.00 | $0.00 | $60.65 

For apprentice rates see "Apprentice - OPERATING ENGINEERS" 

**SELF-PROPELLED POWER BROOM** 
*OPERATING ENGINEERS LOCAL 98* 
12/01/2016 | $29.92 | $10.58 | $12.38 | $0.00 | $52.88 
06/01/2017 | $30.53 | $10.58 | $12.65 | $0.00 | $53.76 
12/01/2017 | $31.13 | $10.58 | $12.92 | $0.00 | $54.63 
06/01/2018 | $31.74 | $10.58 | $13.19 | $0.00 | $55.51 
12/01/2018 | $32.34 | $10.58 | $13.46 | $0.00 | $56.38 
06/01/2019 | $32.85 | $10.58 | $13.73 | $0.00 | $57.16 
12/01/2019 | $33.45 | $10.58 | $14.00 | $0.00 | $58.03 

For apprentice rates see "Apprentice - OPERATING ENGINEERS" 

**SHEETMETAL WORKER** 
*SHEETMETAL WORKERS LOCAL 63* 
01/01/2017 | $32.24 | $10.64 | $15.49 | $1.75 | $60.12
### Sheet Metal Worker - Local 63

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**Notes:**
- Apprentice to Journeyworker Ratio: 1:3

### Painter Local 35 - Zone 3

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**Notes:**
- Steps are 4 mos.
- Apprentice to Journeyworker Ratio: 1:1

### Specialized Earth Moving Equip < 35 Tons

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### Specialized Earth Moving Equip > 35 Tons

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### SPRINKLER FITTER - Local 669

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**Apprentice - SPRINKLER FITTER - Local 669**

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**Effective Date - 04/01/2017**

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**Notes:**

- Apprentice to Journeyworker Ratio: 1:1

**TELECOMMUNICATION TECHNICIAN**

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**Issue Date:** 03/17/2017  
**Wage Request Number:** 20170317-023
### TELECOMMUNICATION TECHNICIAN - Local 7

**Effective Date:** 01/01/2017

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**Notes:**
- Steps are 800 hours

Apprentice to Journeyworker Ratio: 1:1

### TERRAZZO FINISHERS

**BRICKLAYERS LOCAL 3 (SPR/PITT) - MARBLE & TILE**

**Effective Date:** 02/27/2017

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**Notes:**
- Apprentice to Journeyworker Ratio: 1:5

### TEST BORING DRILLER

**LABORERS - FOUNDATION AND MARINE**

For apprentice rates see "Apprentice- LABORER"

**Effective Date:** 12/01/2016

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**Issue Date:** 03/17/2017  **Wage Request Number:**  20170317-023
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Notes:

Apprentice to Journeyworker Ratio: 1:2

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TELEDATA CABLE SPLICER
OUTSIDE ELECTRICAL WORKERS - WEST LOCAL 42
01/01/2016 $28.98 $4.25 $3.12 $0.00 $36.35

TELEDATA LINEMAN/EQUIPMENT OPERATOR
OUTSIDE ELECTRICAL WORKERS - WEST LOCAL 42
01/01/2016 $27.31 $4.25 $3.07 $0.00 $34.63

TELEDATA WIREMAN/INSTALLER/TECHNICIAN
OUTSIDE ELECTRICAL WORKERS - WEST LOCAL 42
01/01/2016 $27.31 $4.25 $3.07 $0.00 $34.63

TRACTOR-TRAILER DRIVER
OUTSIDE ELECTRICAL WORKERS - WEST LOCAL 42
08/30/2015 $42.16 $8.20 $9.26 $0.00 $59.62

TREE TRIMMER
OUTSIDE ELECTRICAL WORKERS - WEST LOCAL 42
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 - WEST LOCAL 42
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.

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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 ________________________________
<table>
<thead>
<tr>
<th>QUARTERLY PROJECTED WORKFORCE TABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNIVERSITY OF MASSACHUSETTS AMHERST</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>UMA Number</th>
<th>Project No.</th>
<th>Project Name</th>
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<table>
<thead>
<tr>
<th>Name of Contractor</th>
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<thead>
<tr>
<th>Address</th>
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<table>
<thead>
<tr>
<th>Telephone No</th>
<th>Fax</th>
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<thead>
<tr>
<th>Scope of Work</th>
<th>Trades Utilized</th>
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<table>
<thead>
<tr>
<th>Estimate of Total Hours to Complete Work of Project</th>
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<table>
<thead>
<tr>
<th>Estimate of Total Hours of Work Remaining on Project</th>
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<tr>
<th>Total Contract Dollar Value $</th>
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<tr>
<th>Quarter:</th>
<th>Beginning</th>
<th>Ending</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade Categories</td>
<td>Projected Total Hours By All Personnel</td>
<td>Projected Total of all Minority Hours</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------------------------</td>
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</tr>
<tr>
<td>MONTH-</td>
<td></td>
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<tr>
<td>Laborers</td>
<td></td>
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<tr>
<td>Other Trades</td>
<td></td>
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<td>MONTH-</td>
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<td>Laborers</td>
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<td>Other Trades</td>
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<td>MONTH-</td>
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<td>Laborers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Trades</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Authorized Signature ___________________________ Title ___________________________ Date ________________

Note: A revised table must be submitted if any changes on projection occur.
CERTIFICATE OF PAYMENT
BY CONTRACTOR/DESIGNER TO MINORITY & WOMEN BUSINESS ENTERPRISES
UNIVERSITY OF MASSACHUSETT AMHERST

TO: University of Massachusetts Amherst
Facilities Planning
360 Campus Center Way
Amherst, MA 01003

Reporting
Period____________________

Physical Plant Building

Contract Date
____________________

Design Contract

Construction Contract

RE: UMA No.__________________________ Project No.____________________

Project Name__________________________

The undersigned hereby certifies under the pains and penalties of perjury that the contractor/designer named below has made the following payments to the named Minority and Women Business Enterprises for work performed on the above project:

<table>
<thead>
<tr>
<th>MBE/WBE Firm Name</th>
<th>Work Performed</th>
<th>Subcontract Amount</th>
<th>Payments This Quarter</th>
<th>Cumulative Payments</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ MBE</td>
<td>☐ WBE</td>
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<td>☐ MBE</td>
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<td>☐ MBE</td>
<td>☐ WBE</td>
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<td>$</td>
</tr>
</tbody>
</table>

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Date Submitted: ________________________________

Name of General Contractor or Design Firm

Telephone No.: ________________________________

Authorized Signature

Fax No.: ________________________________

Print Name and Title

* MBE and WBE payment reports are required for each quarter of the fiscal year for each of your University of Massachusetts Amherst projects. Reports are to cover the following three month periods: 1st quarter, July 1st – September 30th; 2nd quarter, October 1st – December 31st; 3rd quarter, January 1st – March 31st; 4th quarter, April 1st – June 30th. Reports must be submitted within 10 business days of your receipt of this form.

NOTICE: Intentionally submitting false information in this document may subject the contractor/designer to criminal prosecution and/or debarment from public contracting.
INSTRUCTIONS FOR COMPLETING CERTIFICATE OF PAYMENT BY CONTRACTOR/DESIGNER TO MINORITY & WOMEN BUSINESS ENTERPRISES

As part of its effort to ensure reliable, up-to-date information concerning the actual payments made to certified MBE and WBE subcontractors on all University of Massachusetts Amherst projects, the Compliance Office has prepared these instructions to assist you in completing the enclosed form. PLEASE READ THESE INSTRUCTIONS CAREFULLY. UNIVERSITY OF MASSACHUSETTS AMHERST WILL RETURN ANY CERTIFICATION OF PAYMENT THAT IS INCOMPLETE OR INACCURATE.

PLEASE NOTE: IF THIS PROJECT IS COMPLETE, ON HOLD, OR YOUR FIRM PREVIOUSLY SUBMITTED A FINAL CERTIFICATION OF M/WBE PAYMENT FOR THIS PROJECT, PLEASE SO INDICATE ON THE FORM AND RETURN IT TO UNIVERSITY OF MASSACHUSETTS AMHERST, FACILITIES PLANNING.

PLEASE INCLUDE THE FOLLOWING INFORMATION IN THE DESIGNATED SECTIONS OF THE FORM:

M/WBE NAME: Include the MBEs and WBEs listed on the project’s approved Schedule For Participation and any additional M/WBEs that worked on the project. Please note that any change in MBE and/or WBE participation used to meet the project M/WBE goals must be pre-approved by the Director of Facilities Planning responsible for this project and a Revised M/WBE Schedule of Participation will be required. Contact the University of Massachusetts Amherst, Facilities Planning Project Manager immediately if you anticipate or have had any changes in M/WBE participation on this project.

WORK PERFORMED: Include a brief description of the work performed by each subcontractor listed. The description should match the M/WBE Letter of Intent and approved Schedule of Participation. M/WBEs must be SOMWA-certified in the category of work performed on this project for firms used to meet the project M/WBE goals.

SUBCONTRACT AMOUNT: Include the contract or subcontract amounts listed on the M/WBE Letters of Intent and approved Schedule of Participation. If the value of a MBE/WBE contract or subcontract has decreased or increased for any reason, you must contact the University of Massachusetts Amherst, Facilities Planning Project Manager responsible for this project immediately. If additional M/WBE firms not listed on the Schedule for Participation worked on this project list the amount of their subcontracts.

PAYMENTS THIS QUARTER: Include the amount you paid the M/WBE subcontractor, either directly or indirectly, for work performed on this project during the three month period covered by this Certification of Payment. If the amount paid was zero, please indicate that. Do not include payments from previous periods or estimated future payments in this column. Please note that you may be required to submit copies of cancelled checks to verify the amounts reported for firms used to meet the project’s M/WBE goals.

CUMULATIVE PAYMENTS: Include the total amount you paid the M/WBE subcontractor, either directly or indirectly, for work performed on this project for all quarters to date. This amount should equal all payments made during the period covered by this Certificate of Payment as well as all payments from previous periods. The University of Massachusetts Amherst, Facilities Planning Project Manager will check the total amount reported this quarter against any payments previously reported. To ensure accurate reporting, please review the prior Certifications of Payments you submitted for this project.
Where necessary, correct any earlier mathematical or reporting errors and submit revised Certifications of Payment.

IF YOU HAVE ANY QUESTIONS CONTACT THE UNIVERSITY OF MASSACHUSETTS AMHERST, FACILITIES PLANNING PROJECT MANAGER.

Certification of Payment Revised 10/01
CERTIFICATE OF COMPLETION

BY MINORITY/WOMEN BUSINESS ENTERPRISE
UNIVERSITY OF MASSACHUSETTS AMHERST

UMA Number______________ Project Number ______________________
Project Location______________________________

Project Name
_____________________________________________________________________________________

Name of MBE/WBE Firm______________________________
Address________________________________________________________________________________

Name of General Contractor__________________________
Address________________________________________________________________________________

DESCRIPTION OF WORK (AS SHOWN IN LETTER OF INTENT)

DESCRIPTION OF ACTIVITY
(Note “Labor Only,” “Material Only,”
“Material and Labor,” “Complete”)
_____________________________________________________________________________________
_____________________________________________________________________________________

Original Subcontract Amount
$______________________________

Adjusted Subcontract Amount (Change Orders, etc.)
$______________________________

Total Payments Received to Date From Prime Contractor
$______________________________

Total Amount/Balance Due From Prime Contractor
$______________________________
If the completed activity is different from that listed on the Letter of Intent, please explain:

________________________________________________________________________________
________________________________________________________________________________
________________________________________________________________________________

(If more space is needed, continue on back of sheet)

The individuals signing below hereby certify under the pains and penalties of perjury that all work listed on the Contract Letter of Intent (or approved changes thereto as explained above) was completed by the MBE/WBE firm on ______________________, 20____ and the above amounts listed for these services are true and accurate.

FOR CONTRACTOR

Authorized Signature __________________________
Print Name ______________________________________
Title _________________________________________
Date __________ Telephone No. ________________

FOR MBE/WBE FIRM

Authorized Signature __________________________
Print Name ______________________________________
Title _________________________________________
Date __________ Telephone No. ________________

NOTE: To be submitted to the University of Massachusetts Amherst within ten (10) days after completion of work by MBE/WBE.

Facilities Planning

Physical Plant Building

360 Campus Center Way

Amherst, MA 01003

Certificate of Completion – Revised 10/01
FORM FOR TRANSFER OF TITLE (UMA FORM 16)

Name of Contractor or Subcontractor having ownership

Business Address

Date

KNOW ALL MEN BY THESE PRESENTS
That we, _________________________________ , of _________________________________

(City)
in the County of _________________________________ and the Commonwealth of
Massachusetts, in consideration of One Dollar ($1.00) and other good and valuable consideration
paid by the University of Massachusetts Amherst and receipt thereof is hereby acknowledged, do
hereby grant, sell, transfer, and deliver unto the said University of Massachusetts Amherst, clear
title to, and beneficial ownership of, the following goods and chattels, namely:
as per attached bills, belonging to us, now on the job site in _________________________________,

(location) Massachusetts, or at _________________________________ which location has been agreed to in writing.

To have and to hold all and singular the said goods and chattels to the University of
Massachusetts Amherst and to its own use and behoof forever.

And we hereby covenant and represent under pains and penalties of perjury that we are the
lawful owner of the said goods and chattels and that they are free from all liens and
encumbrances. And the undersigned individual executing this document on behalf of the
transferor represents and warrants that he or she is legally authorized to execute this document
on behalf of said transferor.

In Witness whereof we, the said _________________________________ hereunto set

(Contractor or Subcontractor's Firm Name)

our hand and seal this ___ day of _____________________ in the year two thousand and ___.

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(Contractor or Subcontractor's Name)
By: ___________________________________________________________________

Title: ___________________________________________________________________
hereunto duly authorized

UNIVERSITY OF MASSACHUSETTS AMHERST, ss

Then appeared the said ___________________________________________________________________ to me known or proven to be the
________________________________________________________________________ of ___________________________________________________________________ and
acknowledged the foregoing to be his free act and deed and the free act and deed of
__________________________________________________________________________, before me.

________________________________________________________________________

Notary Public
My Commission Expires: ______________

The General Contractor hereby certifies under penalties of perjury that the goods and chattels
transferred above meet the requirements of the Plans and Specifications and will shortly be
needed for the Work; that the General Contractor can and will adequately protect them in
accordance with the Contract Documents until they are incorporated in the Work; that said goods
and chattels are insured as required by the Contract Documents; that acceptance of these goods
and chattels by the University of Massachusetts Amherst shall not constitute a waiver of any
claim arising out of the construction contract between the parties, nor of any claims for breach of
warranty, express or implied, or otherwise, arising out of this sale; that it is understood that the
University of Massachusetts Amherst reserves the right to give notice of any of the aforesaid
breaches at any time subsequent to said sale when said breach first appears to the University of
Massachusetts Amherst.

In Witness whereof we, the said ___________________________________________________________________ hereunto set

________________________________________________________________________

(Contractor's Firm Name)

our hand and seal this ____ day of ____________ in the year two thousand and _____.

________________________________________________________________________

(Contractor's Name) (Name of Surety Company)

By: ___________________________________________________________________

(Authorized Signature for Surety)
Title: ________________________________

hereunto duly authorized

I hereby certify, under the penalties of perjury, that the articles or services listed have been received and are in keeping with the specifications, or are to be received in accordance with customary trade practices, and are in good order except as otherwise noted. Payment is hereby authorized and is properly chargeable to the designated appropriation.

__________________________  ____________________________  _________________  ________________________
(Architect) (Engineer)        (Date)                        Resident Engineer/Project Manager (Date)
UNIVERSITY OF MASSACHUSETTS AMHERST
FACILITIES PLANNING
Physical Plant Building, 360 Campus Center Way,
Amherst, MA 01003

E-I CERTIFICATE OF
AGENCY
USE
AND
OCCUPANCY

FROM AWARDING AUTHORITY: University of Massachusetts Amherst

TO: General Contractor:

RE: UMA No.
    Project No.
    Title:
    Location:
AUTHORITY: M.G.L. c. 30, s. 39K; Article VI General Conditions of Contract

Pursuant to the authority noted above you are notified that the University of Massachusetts Amherst is satisfied that the portion of the above noted project, as hereinafter enumerated, is ready for Use and/or Occupancy. (Identify portions to be used and/or occupied.)

The University of Massachusetts Amherst, through its undersigned representatives, hereby accepts from the Contractor, subject to Contract stipulations, said portion of the project effective as of Midnight the _______ day of ____________ 20_____. The Contractor is relieved of responsibility for performing further work or supplying further materials, equipment or items, with the exception of the attached. (Append a complete list of all incomplete or unsatisfactory items of contract work which in the opinion of the University of Massachusetts Amherst are attributable to the fault, negligence or oversight of the Contractor, his subcontractor, material suppliers, agents, servants or employees.)

The use of any portion of the project or the occupancy of any building or portion thereof by the University of Massachusetts Amherst shall not constitute a final acceptance of any work not performed in accordance with the Contract, nor relieve the Contractor of liability to perform any work required by the Contract or of liabilities with respect to any warranties, guarantees, indemnifications, insurance, or other items that are required by the Contract to survive the issuance of this certificate.

The undersigned recommend the issuance of this Certificate of Agency Use and Occupancy.

UMass Amherst Project. Manager:

<table>
<thead>
<tr>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
</table>

By: ___________________________ ________
E-2 FINAL ACCEPTANCE

CERTIFICATE OF FINAL INSPECTION, RELEASE AND ACCEPTANCE

UMA. State Project No. <> Project No. <>

Title:

Location: <>
Contractor: <>

This is to certify that a complete inspection of the above entitled project was made on <> by the undersigned and the entire work was completed in accordance with the plans and specifications. The undersigned recommends acceptance of the project.

Designer: ___________________________ Authorized Signature: ___________________________ Title: ___________________________ Date: ___________________________

CERTIFICATE OF RELEASE

The undersigned hereby certifies that all work has been completed in accordance with the Plans, Specifications and Contract Documents and that all Change Orders have been supported pursuant to Articles VII and VIII of the General Conditions of the Contract.

2. Contract Award Price: $<> Adjusted Contract Price: $<> Authorized Additions: $<> Paid to Date: $<> Authorized Deductions $<> Balance Due: $<> 

3. The undersigned further certifies that in addition to the amount set forth above, there are outstanding and unsettled the following the Change Orders as submitted according to UMass Form 13.

Request No. <> Date: <> Amount: $<>
Request No. <> Date: <> Amount: $<>
Request No. <> Date: <> Amount: $<> 

4. Subject to satisfactory disposition of Change Orders listed in Item 3 above, the undersigned releases the University of Massachusetts Amherst from all further claims for wages or payments to subcontractors or suppliers except:

(list on attached sheet).

by: ________________________________________

Authorized Signature: ________________________________________

The above entitled project is accepted as of ________________________________________

Date

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Form ST-5C
Contractor’s Sales Tax Exempt Purchase Certificate

Part A. To be completed by governmental body, agency or IRC Section 501(c)(3) certified exempt organization

Exempt number ___________________________ Contract number ___________________________

E 043 - 167 - 352

Name of exempt organization

University of Massachusetts

Authorizing signature

John O’Meara

Date

Director of Procurement

Part B. To be completed by purchasing contractor or subcontractor claiming exemption under MGL Ch. 64H, sec. 6(d), (e), (f) or (t)(t)

Purchaser [ ] contractor [ ] subcontractor

Address ____________________________________________

Date ____________________________________________ Vendor registration number (if applicable) ____________________________________________

Contract/subcontract number ___________________________ Contract/subcontract date ____________ Estimated date of completion ____________

Part C. To be completed by purchasing contractor or subcontractor claiming exemption. See instructions. I claim the exemption corresponding to the box checked below, and certify as follows (check appropriate box below):

1. [ ] Exemption under MGL Ch. 64H, sec. 6(d) or (e): Contractor as Agent of Exempt Entity. I certify that the purchaser is a contractor or subcontractor engaged in the performance of a contract for the above described contract and that the purchaser is acting as an agent of one of the entities described below (check appropriate box) in purchasing tangible personal property (other than building materials and supplies described in MGL Ch. 64H, sec. 6(f)):

[ ] Governmental body or agency described in MGL Ch. 64H, sec. 6(d) (local public school, city/town government, state agency, etc.). Attach Form ST-2, Certificate of Exemption. If Form ST-2 is not available, enter agency’s exemption number.

[ ] Tax exempt organization (under IRC Section 501(c)(3)) as described in MGL Ch. 64H, sec. 6(e) (parochial school, Scout troop, PTO, etc.). Attach Form ST-2, Certificate of Exemption. If Form ST-2 is not available, enter agency’s exemption number.

To the best of my knowledge and belief, the quantities of tangible personal property noted on the reverse side are exempt from the sales/use tax under the provisions of MGL Ch. 64 H, sec. 5(d) or (e) as they are purchased by a purchaser acting as an agent for either a Massachusetts governmental body or for a tax-exempt organization under IRC section 501(c)(3).

2. [ ] Exemption under MGL Ch. 64H, sec. 6(f): Building Materials and Supplies. I certify that the purchaser is a contractor or subcontractor engaged in the performance of a contract for the construction, reconstruction, alteration, remodeling or repair of a building or structure for a governmental body or agency or for a certified IRC Section 501(c)(3) exempt organization or other project described in MGL Ch. 64H, sec. 6(f). To the best of my knowledge and belief, the described quantities of building materials and supplies noted on the reverse side are exempt from sales/use tax under the provisions of MGL Ch. 64H, sec. 6(f), and the described quantities of these materials and supplies are being purchased for use exclusively in the above contract.

3. [ ] Exemption under MGL Ch. 64H, sec. 6(t)(t): Consulting/Operating Contractor as Agent of Governmental Entity. I certify that the purchaser is a consulting or operating contractor or subcontractor as defined in MGL Ch. 64H, sec. 6(t)(t) and that the purchaser is authorized and acting as an agent of, and providing “qualified services,” as defined in MGL Ch. 64H, sec. 6(t)(t), to a governmental body or agency described in MGL Ch. 64H, sec. 6(d). Attach Form ST-2. If Form ST-2 is not available, enter agency’s exemption number. To the best of my knowledge and belief, the quantities of tangible personal property noted on the reverse side are exempt from the sales/use tax under the provisions of MGL Ch. 64 H, sec. 6(t)(t). The purchaser has been authorized under the above contract by a governmental body.

Regardless of the exemption claimed, I will maintain adequate records to show the disposition of all property purchased under this certificate. I understand that I am fully liable for the payment of any sales/use tax due in the event that the property purchased under this certificate is used in a non-exempt manner.

Signed under the penalties of perjury.

Signature ____________________________________________ Title ____________________________________________

Location and description of project and description of kind and quantity of property or receipts/invoices must be attached or noted on the back of this form. This form is approved by the Commissioner of Revenue and may be reproduced.
BID PACKAGE

PART IV

SUPPLEMENTARY GENERAL CONDITIONS AND SPECIFICATIONS
UNIVERSITY OF MASSACHUSETTS
DESIGN & CONSTRUCTION MANAGEMENT

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Section 013100 Project Management and Coordination
Section 013200 Construction Progress Documentation
Section 013300 Submittal Requirements
Section 013543 Environmental Protection Procedures
Section 014000 Quality Requirements
Section 014200 References
Section 014339 Mock-Ups
Section 015000 Temporary Facilities and Controls
Section 016000 Product Requirements
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DIVISION 04 – MASONRY

Section 040120 Masonry Restoration

DIVISION 06 – WOOD, PLASTICS AND COMPOSITES

Section 061000 Rough Carpentry

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

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DIVISION 22 – PLUMBING

Section 223000   Plumbing

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Section 261000   Temporary Mechanical/Electrical Disconnects

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- D-A-135-1010301 - T2 Roof Cross Sections and Conceptual Tapered Insulation Plan
- D-A-135-1010301 - A1 Roof Area Plan
- D-A-135-1010301 - A2 Partial South Elevation
- D-A-135-1010301 - D1 Roof Details, Sheet 1
- D-A-135-1010301 - D2 Roof Details, Sheet 2
- D-A-135-1010301 - D3 Window Details

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I:\83202002 Design\specs\UMA Bowditch - 000000 - Table of Contents.docx
THE UNIVERSITY OF MASSACHUSETTS
Design & Construction Management Division

SPECIFICATIONS FOR

UMA PROJECT NO: UMA 17-16

BOWDITCH HALL
ROOF REPLACEMENT AND ASSOCIATED WORK

UNIVERSITY OF MASSACHUSETTS
AMHERST, MASSACHUSETTS 01003

DATE: March 6, 2017

Engineer of Record

Jon F. Lindberg, P.E. #32173
Gale Associates, Inc.
163 Libbey Parkway
P.O. Box 890189
Weymouth, MA 02189-0004

END OF SEALS 000005
SECTION 011000

SUMMARY

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

B. Equality of material, article, assembly or system other than those named or described in this Section shall be determined in accordance with the provisions of Article V of the CONTRACT AND GENERAL CONDITIONS.

1.2 REQUIREMENTS INCLUDED

A. Work under this Contract.
B. Examination of Site and Documents.
C. Contract Method.
D. Work Sequence.
E. Supervision of Work.
F. General Contractor’s Use of Premises.
G. Coordination.
H. Field Engineering.
I. Reference Standards.
J. Preconstruction Conference.
K. Project Meetings.
L. Permits, Inspection, and Testing Required by Governing Authorities.
M. Cutting, Coring, Patching, Unless Otherwise Indicated.
N. Debris Removal.
O. Field Measurements.
P. Emergency Procedures.
Q. Safety Regulations.
R. OSHA Safety and Health Course Documentation.
S. Damage Responsibility.
T. Owner Furnished Products.
U. Owner Occupancy.
V. Asbestos and Hazardous Materials Discovery.
W. Special Requirements.
X. Definitions.
Y. Specifications and Drawings Conventions.
Z. List of Drawings.
1.3 WORK UNDER THIS CONTRACT

A. The work to be done under this contract consists of executing and completing all work required for Bowditch Hall, Roof Replacement, UMA 17-16 – UNIVERSITY OF MASSACHUSETTS AMHERST.

1. General Information

a. The project consists of a renovation to the exterior envelope components of an office/research/classroom building. The building shall be constructed so as to meet all requirements of the Massachusetts State Building Code, current edition, in addition to all other applicable codes and regulations. The building footprint is approximately 5,000 square feet.

b. The facility currently houses faculty offices, laboratories, classrooms, and is a 2 to 3-story structure, of Construction Classification 2A, for Use Group Business (B).

c. The structural system for the complex is concrete reinforced framing with concrete cast-in-place floor slabs. The building envelope consists of brick masonry and original wood windows.

B. The work will include all operations necessary to deliver the building(s) and ancillary on and off site amenities in a fully installed and operable condition including all utility and site work and obtaining all necessary licenses, permits, and certificates. Where utilities exist within and adjacent to the building(s) and ancillary parking lots, and are known by the Owner, they have been shown on the site plan(s) appearing in, but not restricted to, the exhibits. Connections to these existing utility lines will be the responsibility of the General Contractor.

C. The scope of work, without limiting the generality thereof, includes all labor, materials, equipment and services required to perform the work described fully in the Drawings and Specifications and includes, but is not limited to the following major work:

1. Removal and replacement of the existing roof system with a new roof system. Construction will include, but is not limited to:
   a. Carpentry.
   b. Roofing.
   c. Joint Sealants.
   d. Window Replacement.
   e. Masonry Repairs.
   f. Plumbing.

2. Construction shall be classified as Renovations.

D. Reference To Drawings: The work to be done under this Contract is shown on the Drawings listed at the end of this Section.

E. The General Contractor will provide a schedule for completion of the project within the required construction period to the UMA Project Manager within twenty (20) calendar days after the issuance of a Notice to Proceed for the Contract.

F. The Work to be executed under this Contract is scheduled to occur from June 2017 through July 2017; therefore, the Final Completion Date for this Contract is August 9, 2017 and is subject to liquidated damages.
G. The Massachusetts Standard Labor Wage rates, as outlined in the exhibits, will be used in the construction of this project.

1.4 EXAMINATION OF SITE AND DOCUMENTS

A. A pre-bid conference will be held at the job site on the date and at the time indicated in the Invitation to Bid.

B. Bidders shall visit the site during the pre-bid conference, at the time specified in the advertisement and the bid documents.

C. The bidders are expected to examine and to be thoroughly familiar with all contract documents and with the conditions under which the work is to be carried out. UMA will not be responsible for errors, omissions, and/or charges for extra work arising from the General Contractors or Subcontractors failure to familiarize themselves with the contract documents. The General Contractor and Subcontractor acknowledge that they are familiar with the conditions and requirements of the contract documents where they require, in any part of the work a given result to be produced, and that the contract documents are adequate and will produce the required results.

D. The Designers on the project include:

UMA - Project Manager:
Cleve Carrens – Tel: (413) 326-1660/Email: ccarrens@facil.umass.edu

Engineer of Record:
Jon F. Lindberg – Tel: (781) 335-6465/Email: jfl@gainc.com

Engineer’s Project Manager:
Christopher Musorofiti – Tel: (781) 335-6465/Email: cm@gainc.com

Engineer’s Project Engineer (for all technical questions):
Samuel C. Moores – Tel: (781) 335-6465/Email: sem@gainc.com

E. Contact: The Designer will not be physically present at the pre-bid conference. The pre-bid conference will include the designer by conference call. The pre-bid conference will include a meeting for project overview and then tour of the project site. The pre-bid conference and tour will be the only time available for viewing the site; any further questions preceding the submission of the bid shall be directed to both: Peter Royer by email: proyer@admin.umass.edu and to the UMA Project Manager: Cleve Carrens at ccarrens@facil.umass.edu. Please provide the nature of your question, your Company Name, your full name, your position/title, your personal company telephone number, company mobile telephone number and your personal company Email address.

F. No questions from Bidders will be accepted within 5 days of the Bid opening. Bidder Questions affecting the scope or price of work will be answered in the form of an addendum which will be posted to the Procurement website: http://www.umass.edu/procurement/constructionprojects.htm. The UMA Project Manager reserves the right NOT to provide answers to bidder questions if the UMA Project Manager ascertains the answer and be easily deduced by reading the Contract Documents or is irrelevant to the Price or Scope of Work. Any information provided by other than the designated contact persons identified above should be disregarded in the preparation of Bids.
G. Bidders shall thoroughly examine and be familiar with the Drawings and Specifications. Each General Bidder shall include in his bid any work required in connection with the same that has to be done by trades under his/her direct control.

H. Plans, surveys, measurements, calculations, estimates, and statements as to the conditions under which the work is to be performed are believed to be correct. Each bidder must satisfy himself by his own investigation and research to conditions affecting the work to be done and labor and material needed and make his bid in reliance thereon.

I. Before ordering any material or doing any work, all measurements shall be verified by the General Contractor at the site. No extra charge or compensation will be allowed on account of the difference between actual dimensions and the measurements indicated on the Drawings. Any difference which may be found shall be submitted to the UMA Project Manager for consideration before proceeding with the work.

J. The failure or omission of any bidder to receive or examine any form, instrument or document, or to visit the site and acquaint him with the conditions there existing, shall in no way relieve any bidder from any obligation with respect to his bid.

1.5 CONTRACTOR QUALIFICATIONS

A. The General Contractor must be currently certified by the Division of Capital Asset Management and Maintenance (DCAMM) for Roofing.

B. The General Contractor shall certify in writing that he has successfully performed on at least three new construction projects of equivalent size and complexity.

C. It is the Bidder’s responsibility to obtain the necessary forms from DCAMM and make application to DCAMM not less than three (3) weeks prior to advertised bid opening for DCAMM to evaluate the application and issue a Certificate of Eligibility.

D. The General Contractor’s Update Statement is not a public record as defined in M.G.L., Chapter 4, Section 7, and will not be open to public inspection.

1.6 CONTRACT METHOD

A. Work under this contract shall be lump sum price, for the scopes of work as described in these specifications and shown on the Drawings.

1.7 WORK SEQUENCE

A. The Work will be conducted in the following sequence of demolition/construction:

1. Masonry Repairs.
2. Removal and replacement of roof system.
3. Window Replacement.
B. The General Contractor shall arrange all his work schedules within the hours of 7:00 a.m. to 5:00 p.m. during the regular work week. Work must be scheduled and performed in such a manner as to not interfere with the work of other Contractors or University operations. General Contractors and Subcontractors are not entitled to additional funds due to work of other contractors or University operations.

C. Work requiring the presence of Design & Construction Management Division, or Physical Plant Division personnel on nights, Sundays, or holidays will not be permitted except in case of emergency, or when approved in writing by the UMA Project Manager. After hours work requiring the assistance of Design & Construction Management Division or Physical Plant Division personnel may result in back charges to the General Contractor. Any work to be performed on Saturdays will require the prior approval of the UMA Project Manager.

D. For the duration of the project the UMA Project Manager, representing the Design & Construction Management Division at the University of Massachusetts Amherst, will be Cleve Carrens, telephone (413) 326-1660.

E. General: Cooperate fully with UMA so work may be carried out smoothly, without interfering with or delaying work under this Contract or work by UMA. Coordinate the Work of this Contract with work performed by UMA.

F. Preceding Work: UMA will perform the following construction operations at Project site. Those operations are scheduled to be substantially complete before work under this Contract begins.

1. UMA shall remove equipment and furnishings from the work areas within the limits of the scope of work for this project other than the areas to remain operational and active during construction or as otherwise designated on the Contract Drawings.

2. UMA shall execute a general cleaning of the interior work area within the limits of the scope of work for this project prior to the commencement of the related work by the contractor.

G. Construct work in stages to accommodate UMA’s occupancy and/or use of premises in this building during the construction period; coordinate the construction schedule and operations with UMA Project Manager. Refer to Sections 015000 – TEMPORARY FACILITIES AND CONTROLS and 013200 – CONSTRUCTION PROGRESS DOCUMENTS for additional information. The building shall remain occupied and active (operational) throughout construction.

H. The sequencing of work is generally indicated by areas to be worked in on the construction documents. The General Contractor and each Subcontractor must review the entire contract documents for work; he/she are to perform within the designated work areas.

I. The General Contractor and each Subcontractor shall sequence and schedule the work at each entry point located on the east and west sides of the building so that only one entry point at a time is out of service so as to not impair egress to and from the building from the remaining entry points. Work that requires the temporary closure of parking spaces or drive lanes shall be scheduled with the Owner a minimum of five (5) days prior to the closure.
J. Work shall be performed with as many crews as required to maintain Construction Schedules, working normal hours or as afterhours work, as required to maintain the construction schedule at no additional cost to the university.

K. The Mechanical Services (electric, water, heat, etc.) of the existing building shall not be interrupted during regular hours. If such interruption is required to execute the work of the Contract, temporary services must be provided by the General Contractor at no additional cost, or as after-hours work.

L. The existing landscaped areas, parking areas and access drives adjacent to Bowditch Hall shall not be used for the storage of materials, equipment or vehicles. The General Contractor may only approach the parking area and access drives at the building to receive materials and remove debris/waste.

M. Afterhours work is defined as work which is performed prior to building opening at 7:00 a.m. and closing at 5:00 p.m., Monday through Friday. The General Contractor should account for and plan to execute “Afterhours Work” and work conducted on Saturdays at no additional cost to UMA in order to maintain their schedule and so as not to disturb the occupants in the adjacent spaces throughout the building.

1. Any project cost, additional man hours, equipment cost or additional work days beyond the normal work day/week required to meet the above schedule shall be included in the base price bid submitted. Meeting the schedule is a condition of the bid; no additional cost will be approved.

   a. Work hours beyond the normal day or week require a minimum of 48 hours prior notice in writing and approval from the UMA Project Manager.

N. No jack hammering or cutting of existing roof assemblies, wall assemblies, door assemblies, masonry or concrete elements shall be done during normal hours. Refer to paragraph 1.16 for additional guidance and requirements.

1.8 SUPERVISION OF WORK

A. The General Contractor shall be held directly responsible for the correct installation of all work performed under this Contract. The General Contractor must make good repair, without expense to the Commonwealth, of any part of the new work, or existing work to remain, which may become inoperative on account of leaving the work unprotected or unsupervised during construction of the system or which may break or give out in any manner by reason of poor workmanship, defective materials or any lack of space to allow for expansion and contraction of the work during the General Contractor’s warranty period, from the date of final acceptance of the work by the University of Massachusetts Amherst (UMA)

B. The General Contractor shall furnish a competent project manager satisfactory to the UMA Project Manager. The project manager shall supervise all work under this Contract while any and all work under this Contract is in progress.
1. The General Contractor shall submit the name; provide a copy of any license(s) and copy of the resume of the project manager for approval to the UMA Project Manager within twenty (20) calendar days after the issuance of a Purchase Order for the Contract. Include experience with projects of equal size and complexity.

C. The General Contractor shall furnish a competent Massachusetts licensed project superintendent possessing a Massachusetts – Department of Public Safety Construction Supervisor License satisfactory to the UMA Project Manager. The licensed superintendent shall supervise all work in the field under this Contract and who shall remain at the project site Full-Time with no other responsibilities other than as dedicated to the Work of the Contract to this project throughout the Contract period while any and all work under this Contract is in progress.

1. The General Contractor shall submit the name; provide a copy of license(s) and copy of the resume of the project superintendent for approval to the UMA Project Manager within twenty (20) calendar days after the issuance of a Purchase Order for the Contract. Include experience with projects of equal size and complexity.

1.9 GENERAL CONTRACTOR’S USE OF PREMISES

A. Use of the Site: Limit use of the premises to work in areas indicated within the construction fence shown on the site drawing(s). Coordinate work of all Subcontractors required outside the construction fence boundary shown on the site drawing(s). Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.

1. Owner Occupancy: Allow for Owner occupancy and use by the public (if applicable).
2. Driveways and Entrances: Keep driveways and entrances serving the premises clear and available to the Owner, the Owner’s employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
3. Areas Outside the Construction Fence or Immediate Work Area: The General Contractor is responsible for clean-up of all debris, dirt and sediment resulting from the construction work such as, but not limited to areas around waste containers and/or dumpsters if utilized.

B. The Contractor will not be permitted to locate, park, or store vehicles or similar heavy loads on the designated plaza locations, where shown on the Contract Drawings. Cranes or lift devices shall be located in areas that are acceptable by the University of Massachusetts Amherst.

C. Schedule and perform work to afford minimum of interruption to normal and continuous operation of utility systems. The General Contractor shall submit to UMA and the Designer for approval, proposed schedule for performing work; including construction of new utilities, re-routing of existing utilities and final connection of new work to existing work. Schedule shall indicate shutdown time required for each operation.

1. Work includes checking all safety devices to verify that they have come back on-line after interruption. This requirement will not be waived.
D. The General Contractor shall schedule as per Section 015000 - TEMPORARY FACILITIES AND CONTROLS, the shutting down or interrupting any utilities, services or facilities which may affect the operation of the building outside the area of work or other buildings, services or facilities of the UMA.

E. Coordinate with UMA and the Designer, work in connection with adjacent driveways, walks, or other facilities which would prevent access thereto or interrupt, restrict, or otherwise infringe upon the Operating Agency’s use thereof.

F. The General Contractor shall be aware of the sensitivity of the neighborhood organizations to noise, dust, debris, vibration, and site maintenance and take appropriate precautions to avoid conflict.

G. Damage to existing work, if caused by the General Contractor’s operations under this Contract, shall be repaired at the General Contractor’s expense.

1. To document the existing conditions, an existing conditions survey shall be conducted with the UMA Project Manager and UMA Representatives and prepared by the General Contractor. The survey may include digital photographs and/or video-recording. A copy of the photos and/or video will be provided at no additional cost to the UMA Project Manager. In the absence of an existing conditions survey, damage to existing conditions following construction may be assumed to be caused by the General Contractor.

H. The General Contractor can gain access to the premises during the hours specified below. In addition, the General Contractor and his personnel will limit themselves only within the working premises during working hours. If work needs to be scheduled during times other than those listed below, General Contractor shall inform the UMA Project Manager one week prior to work.

1. Deliveries: 7:00 AM to 5:00 PM during the regular work week at the designated loading and off loading area(s)

2. General Access: 7:00 AM to 5:00 PM during the regular work week at the designated entry/exit

I. Confine operations at the site to areas permitted by:

1. Laws
2. Ordinances
3. Permits
4. Contract Documents
5. Owner’s Regulations

J. General Contractor shall supervise the use of the site related to construction and be responsible for correcting any damage identified by the UMA Project Manager to the UMA Project Manager’s satisfaction.

1. An existing conditions survey shall be conducted, with the Designer, The UMA Project Manager, and UMA representatives, at which existing conditions will be videotaped by the General Contractor. A copy of the videotape will be provided to the UMA Project Manager.
K. All available existing utilities adjacent to the construction site will be available for use during construction unless indicated otherwise. Temporary connections to these utilities, all metering, transformers, removal, usage, and their associated costs will be the responsibility of the appropriate Subcontractor.

L. The General Contractor shall verify that Subcontractors have visited the site and included all costs associated with the location of the project, and any restriction or limitations the location of the project may pose.

M. The General Contractor and Subcontractors shall at all times conduct their operations in a courteous, professional manner while on the project or in the vicinity of the project. Harassment, offensive language or behavior will not be permitted on the site.

N. The University of Massachusetts, Amherst can neither accept nor assume responsibility for the security of the Contractor's material or equipment which is lost, stolen or vandalized. The Contractor is advised to exert caution in placement and storage of his equipment and material.

O. Parking: Parking spaces on Campus are very limited and the University will not provide designated parking lot spaces near the construction site for the Contractor’s use. The Contractor shall contact Parking Services (413-545-0065) to determine the location of the nearest available parking spaces. The Contractor will be required to pay all fees for parking. The Contractor shall state his/her parking and staging area requirements during the Pre-Construction Meeting. The area(s) for materials storage will then be agreed to between the Contractor and the UMA Project Manager. The limits of material storage will be delineated by the Contractor with construction fencing and enforced throughout the Contract. Refer to Section 015000 - TEMPORARY FACILITIES AND CONTROLS for additional requirements.

P. Areas not to be used for storage include the areas under the “drip line” of trees, planting beds, and sidewalks. Contractor shall install temporary fencing around the drip line of trees and protect vegetation from construction damage. Restoration of the delineated parking and storage area shall be as described in Section 017700 – CONTRACT CLOSEOUT. If utilized, trailers or storage piles shall not be located over utility lines or their access points.

Q. Radios, tape players, “boom boxes”, or other audio entertainment equipment, including personal entertainment devices, shall not be allowed on the project site.

R. The University of Massachusetts prohibits tobacco use everywhere on campus, inside buildings and throughout the grounds. This policy applies to everyone and anyone on campus, including students, staff, faculty, contractors, and visitors. For the purpose of this policy, ‘tobacco’ refers to any and all tobacco products, whether inhaled or ingested, as well as electronic cigarettes.

1. The use of tobacco is prohibited in all buildings and vehicles owned or leased by UMass Amherst, regardless of location.
2. The use of tobacco is prohibited on all University grounds and in any outdoor area controlled by the University. This includes all University land, parking lots and parking ramps, athletic fields, tennis courts, and recreational areas.
3. The use of tobacco is prohibited inside any vehicle located on University grounds.
4. When any person enters the grounds of the University, any smoking material shall be extinguished and disposed of in an appropriate receptacle at the perimeter of the grounds of the University.

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5. The Contractor is responsible for enforcing these rules with all construction employees, subcontractors, suppliers, and delivery personnel.

S. The Contractor shall not allow the use of intoxicating beverages or non-prescription controlled substance drugs upon or about the work site.

T. The Contractor shall provide and maintain in good serviceable condition at all times, warning signs and non-combustible barriers, forms and fire resistive tarps or plastic, each of which shall be approved by the University, shall be suitable for the purpose, and shall be installed adjacent to each work area, for complete enclosure and/or isolation of all excavations, wells, pits, manholes, shafts, overhead areas, etc., which are associated with the work under the contract. Barriers shall be a secure fence, guardrail, cover, or similar assembly designed and erected to provide protection for concrete, protection from the weather, and to prevent accidental access. Barrier tape and/or sawhorses shall not be used as a means of such access protection.

1.10 WORK PERFORMED UNDER SEPARATE CONTRACTS

A. The Commonwealth reserves the right to let separate contracts in connection with the work.

B. The General Contractor shall afford other Contractors reasonable opportunity for the introduction and storage of their materials and equipment and the execution of their work, and shall properly connect and coordinate his work with theirs.

C. If any part of the General Contractor's work depends upon the work of any other separate Contractor for proper execution or results, the General Contractor shall inspect and promptly report to the UMA Project Manager any apparent discrepancies or defects in such work that render it unsuitable for such proper execution and results. Failure of the General Contractor to so inspect and report shall constitute an acceptance of the other Contractor's work.

D. Should the General Contractor cause damage to the work or property of any separate Contractor on the Project, the General Contractor shall, upon due notice, settle with such other Contractor by agreement or arbitration, if he will so settle. If such separate Contractor sues the Commonwealth or initiates an arbitration proceeding on account of any damage alleged to have been so sustained, the Commonwealth shall notify the General Contractor who shall defend such proceedings at the Commonwealth's expense, and if any judgment or award against the Commonwealth arises there from the General Contractor shall pay or satisfy it and shall reimburse the Commonwealth for all attorney's fees and court or arbitration costs which the Commonwealth has incurred.

1.11 COORDINATION

A. The General Contractor shall be responsible for the proper fitting of all the work and for the coordination of the operations of all Subcontractors or material and persons engaged upon the work. The General Contractor shall do, or cause his agents to do, all cutting, fitting, adjusting, and repair necessary in order to make the several parts of the work come together properly.
1. Examine Contract Documents in advance of start of construction and identify in writing questions, irregularities or interference to the UMA Project manager in writing. Failure to identify and address such issues in advance becomes the sole responsibility of the General Contractor. A conflict that would cause the reduction of the normal ceiling height of any occupied space is considered to be an interference.

B. Execute the work in an orderly and careful manner with due regard to the occupants of the facility, the public, the employees, and the normal function of the facility.

C. The work sequence shall follow planning and schedule established by the General Contractor as approved by the Designer and the UMA Project Manager. The work upon the site of the project shall commence promptly and be executed with full simultaneous progress. Work operations which require the interruption of utilities, service, and access shall be scheduled so as to involve minimum disruption and inconvenience, and to be expedited so as to insure minimum duration of any periods of disruption or inconvenience.

D. The General Contractor shall review the tolerances established in the specifications for each type of work and as established by Subcontractor organizations. The General Contractor shall coordinate the various Subcontractors and resolve any conflicts that may exist between Subcontractor tolerances without additional cost to UMA. The General Contractor shall provide any chipping, leveling, shoring or surveys to ensure that the various materials align as detailed by the Designer and as necessary for smooth transitions not noticeable in the finished work.

1.12 REFERENCE STANDARDS

A. For products specified by association or trade standards, comply with requirements for the standard, except where more rigid requirements are specified or are required by codes. Refer to Section 014200 - REFERENCES.

B. Where reference is made in the Contractual Documents to Publications and Standards issued by Associations or Societies, the intent shall be understood to specify the current edition of such Publications or Standards (including tentative revision) in effect on the date of the contract advertisement notwithstanding any reference to a particular date.

1.13 PRE-CONSTRUCTION CONFERENCE

A. In accordance with Article V of the CONTRACT AND GENERAL CONDITIONS, a pre-construction conference to review the work will be conducted by the UMA Project Manager.

B. Representatives of the following shall be required to attend this conference:
   1. UMA.
   2. Designers.
   3. UMA EH&S Construction Safety Officer.
   4. General Contractor’s Project Manager.
   5. General Contractor’s Project Superintendent.
   6. All Subcontractors Project Managers and trade foremen.
   7. Other Applicable Municipal and/or Regulatory Agencies as required subject to the discretion of the UMA Project Manager.
C. The General Contractor shall have their Project Manager serving as a responsible representative of field and office forces and all Subcontractors at the Pre-Construction conference to be notified by the UMA Project Manager following the award of the contract, as well as the Project Superintendent as the representative of field forces and major Subcontractors. All such representatives shall have authority to act for their respective firms. The Pre-Construction conference is to be held within ten (10) days of Notice to Proceed and issuance of a Purchase Order for the Contract, or as otherwise determined subject to the discretion of the UMA Project Manager.

D. Contact List: The General Contractor shall provide to the UMA Project Manager a list containing the following:
   1. General Contractor’s Principal’s name, address, phone number, fax number, e-mail address and after hours emergency phone number.
   2. General Contractor’s Project Manager’s name, office telephone number, cell phone number and e-mail address.
   3. General Contractor’s Superintendent name, office telephone number, cell phone number and e-mail address.
   4. Each Sub-Contractor’s Project Manager’s name, address, phone number, fax number and description of the products or services they will provide to the project.
   5. Each Sub-Contractor’s trade foreman’s name, address, phone number, fax number and description of the products or services they will provide to the project.

E. Agenda: Discuss items of significance that affect progress, including the following:
   1. Tentative construction schedule.
   2. Phasing.
   3. Critical work sequencing.
   4. Designation of responsible personnel. The Contractor shall identify a contractor safety representative to interface with the University Construction Safety Officer (CSO). This person may also fill other roles within the contractor’s project area e.g. project manager, superintendent, foreman, etc.
   5. Procedures for processing field decisions and Change Orders.
   6. Procedures for processing Applications for Payment.
   8. Submittal procedures.
   9. Preparation of Record Documents.
   10. Use of the premises.
   11. Safety. The UMA CSO will attend the pre-construction meeting for the purpose of orienting the contractor to policies specific to the University, discuss the contractor’s site specific safety plan, as well as to emphasize recognized safety practices expected on campus. The Contractor Safety Representative is responsible to ensuring this information is disseminated to all contractor/ subcontractor employees. If the UMA CSO is unable to attend, the UMA CSO may send a designee to cover this portion of the meeting or the UMA CSO and UMA Project Manager will schedule a separate time when this review may be completed.
   12. Responsibility for temporary facilities and controls.
   14. Office, work, and storage areas.
   15. Equipment deliveries and priorities.
   16. First aid.
   18. Progress cleaning.
19. Working hours.
20. Emergency phone numbers.
21. Payment procedures and Schedule of Values.
22. Material deliveries.

F. Reporting: Minutes of the meeting shall be prepared by the Designer or designated representative and shall be distributed to each party present. The General Contractor shall be responsible for distributing the minutes to all Field-Sub Contractor

1.14 PROJECT MEETINGS

A. Project meetings shall be held on a bi-weekly basis or as required subject to the discretion of the UMA Project Manager.

B. Attendees: In addition to the UMA Project Manager, Designer, the General Contractor’s project manager & project superintendent, each Subcontractor’s foreman, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

C. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
   1. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
   2. Review present and future needs of each entity present, including the following:
      a. Interface requirements.
      b. Sequence of operations.
      c. Status of submittals.
      d. Deliveries.
      e. Off-site fabrication.
      f. Access.
      g. Site utilization.
      h. Temporary facilities and controls.
      i. Manpower.
      j. Hazards and risks.
      k. Progress cleaning.
      l. Quality and work standards.
      m. Change Orders.
      n. Documentation of information for payment requests.
      o. New Business
D. As a prerequisite for monthly payments, ordering schedules, shop drawing submitted schedules, and coordination meeting schedules shall be prepared and maintained by the General Contractor and shall be revised and updated on a monthly basis, and a copy shall be submitted to the UMA Project Manager and Designer.

E. In order to expedite construction progress on this project, the General Contractor shall order all materials immediately after the approval of shop drawings and shall obtain a fixed date of delivery to the project site for all materials ordered which shall not impede or otherwise interfere with construction progress. The General Contractor shall present a list and written proof of all materials and equipment ordered (through purchase orders). Such list shall be presented at the meetings and shall be continuously updated.

F. Scheduling shall be discussed with all concerned parties, and methods shall be presented by the General Contractor, which shall reflect construction completion not being deferred or foreshortened. Identify critical long-lead items and other special scheduling requirements. The project schedule is to include time for submission of shop drawing submittals, time for review, and allowance for resubmittal and review.

G. Project meetings shall be chaired by the Designer and chaired by the UMA Project Manager.

H. Minutes of the project meetings shall be prepared by the Designer and shall be distributed to all present. The Designer’s meeting minutes shall be the only official meeting record. Minutes shall enumerate each topic item, and each topic shall be updated at each progress meeting. Actions to be taken for each topic shall be recorded, along with identification of the party responsible for each action item. Items shall not be removed from the Minutes until all issues with each item have been resolved.

1.15 PERMITS, INSPECTION, AND TESTING REQUIRED BY GOVERNING AUTHORITIES

A. If the Contract Documents, laws, ordinances, rules, regulations or orders of any public authority having any jurisdiction require any portion of the Work to be inspected, tested, or approved, the General Contractor shall give the Designer, the UMA Project Manager or his/her designated representative, and such Authority timely notice (5 business days minimum) of its readiness so the Designer may observe such inspecting, testing, or approval.

B. Prior to the start of construction, the General Contractor shall complete application to the applicable Building Code enforcement authority for a Building Permit. Such Permit shall be displayed in a conspicuous location at the project site. The building permit fee shall be paid by the Contractor.

C. Unless otherwise specified under the Sections of the Specifications, the General Contractor shall pay such proper and legal fees to public officers and others as may be necessary for the due and faithful performance of the work and which may arise incidental to the fulfilling of this Contract. As such, all fees, charges, and assessments in connection with the above shall be paid by the General Contractor
D. The General Contractor shall maintain at the site, for the duration of construction operations, at least one (1) up-to-date copy of all relevant codes and standards listed in the Contract Documents or determined to be applicable to the work. One (1) copy of such codes shall be for the exclusive use of UMA and the Designer and its Consultants, and shall be kept in the General Contractor’s site office.

E. The General Contractor shall furnish and install all information required by the building official and shall secure the general building permit for the work promptly on award of the Contract. The General Contractor shall conform to all conditions and requirements of the permit and code enforcement authority. The General Contractor shall provide names and license numbers of its responsible representatives to complete the application for permit, and shall receive the permit and promptly distribute copies to UMA and the Designer.

F. General Contractor and specialized Subcontractors as applicable shall identify all permits (other than general building permit) required from Authorities having jurisdiction over the Project for the construction and occupancy of the work. The General Contractor shall prepare the necessary applications and submit required plans and documents to obtain such permits in a timely manner, and shall furnish the required information to the Building Official and obtain the required permits as early as practicable after award of the Contract.

1. The General Contractor shall display all permit cards as required by the Authorities, and shall deliver legible photocopies of all permits to UMA’s Project Manager and the Designer promptly upon their receipt.

2. The General Contractor shall arrange for all inspections, testing and approvals required for all permits, and shall notify the Designer and UMA’s Resident Engineer of such inspections at least three (3) business days in advance (longer if so required in the various Sections of the Specifications), so they may arrange to observe.

3. The General Contractor shall comply with all conditions and provide all notices required by all permits.

4. The General Contractor shall perform and/or arrange for and pay all testing and inspections required by the Governing Codes and Authorities, other than those provided by UMA, and shall notify the Designer and UMA’s Resident Engineer of such inspections at least three (3) business days in advance of all such testing or inspection, so they may arrange to observe.

5. Where Inspecting Authorities require corrective work for conformance with applicable Codes and Authorities, the General Contractor shall promptly comply with such requirements, except in cases where such requirements clearly exceed the requirements of the Contract Documents, in which case the General Contractor shall proceed in accordance with the procedures for modifications or changes in the work established in the Contract Documents, as amended.

G. Prior to the start of construction, the General Contractor shall complete applicable applications, permits, and notifications to the MADEP, such as the Demolition/Construction form BWP AQ-06, and the Asbestos Notification Form ANF-001, if required and pay the required fees. These forms must be submitted at least 10 working days in advance of any regulated activity on the site or as required by the Authority Having Jurisdiction (AHJ). Demolition permits must be submitted for any work involving demolition, new construction and renovation. The General Contractor shall provide the UMA Project Manager with copies of any and all notifications as well as e-receipts for transmission to the Authorities Having Jurisdiction.

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H. Building permits are required for office trailers. If utilized, trailers must be securely anchored in conformance with the latest applicable codes and standards to prevent displacement due to wind. If an office trailer is planned for use by the General Contractor, he/she shall provide the UMA Project Manager with a copy of the application and subsequent permit issued by the Authority Having Jurisdiction if an office trailer is planned for use during this project.

I. If utilized, metal dumpsters of 6 cubic yard aggregate capacity or more, and containing combustible materials, must have a Local Fire Department Permit issued for each location. If the containers are delivered and removed on the same day, no permit is required (527 CMR 34.03). The General Contractor shall provide the UMA Project Manager with a copy of the application and subsequent permit issued by the Authority Having Jurisdiction if a metal dumpster is planned for use during this project.

J. Storage of more than 2500 cubic feet gross volume of combustible or flammable materials in a building will require a permit from the Local Fire Department.

K. Use and storage of more than 10 gal or 42 lbs. of Liquefied Propane Gas (LPG) containers on site must be approved by and a permit must be secured through the local Fire Department.

L. Any work involving existing fire protection systems or related equipment (fire alarm, sprinkler, fixed extinguishing system) will require the General Contractor to obtain a permit from the Local Fire Department. Any work that affects Fire Protection Systems shall require the General Contractor to notify the UMA Project Manager and the UMA Environmental Health and Safety Department (EH&S). Any work which disables part or all of a fire protections system for more than eight (8) hours shall submit an impairment plan to the UMA Project Manager at least ten (10) working days prior to start of work. The UMA Project Manager will provide the Town of Amherst Fire Department permit application & inspection guidance to the General Contractor for this Work of the Contract.

M. The Contractor is required to obtain trenching permits from UMA EH&S for any excavations or trenches that are greater than 36 inches in depth three working days prior to start of work.

N. The General Contractor shall be required to keep a copy of the State Building Code (with latest amendments) at the job site at all times.

O. Any construction sites disturbing greater than one acre require a notice of intent to the EPA, and will require a written a storm water pollution prevention plan. A Notice of Termination must then be filed when sediment controls are no longer required.

1.16 CUTTING, CORING, AND PATCHING, UNLESS OTHERWISE INDICATED

A. The General Contractor shall coordinate all cutting, coring, fitting and patching of the work that may be required to make its several parts come together properly and fit it to receive or be received by work of the Subcontractors shown on the Drawings and Specifications. The Subcontractor shall perform all cutting, coring or patching.

B. The General Contractor shall coordinate that the work of the Subcontractor is not endangered by any cutting, coring, excavating, or otherwise altering of the work and shall not allow the cutting or altering the work of any Subcontractor except with the written consent of the Designer.
C. Submit a written request to Designer at least three (3) business days in advance of executing any cutting or alteration which affects:

1. Work of UMA or separate Contractor.
2. Structural value or integrity of any element of the Project.
3. Integrity or effectiveness of weather-exposed or moisture-resistant elements or systems.
4. Efficiency, operational life, maintenance, or safety of operational elements.
5. Visual qualities of sight-exposed elements.
6. Request shall include:
   a. Identification of the Project.
   b. Description of affected work.
   c. The necessity for cutting, alteration, or excavation.
   d. Effect on work of UMA or any separate General Contractor, or on structural or weatherproof integrity of Project.
   e. Description of proposed work:
   f. Alternatives to cutting and patching.
   g. Cost proposal, when applicable.
   h. Written permission of any separate General Contractor whose work will be affected.
7. Should conditions of Work or the schedule indicate a change of products from original installation, General Contractor shall submit request for substitution.
8. Submit written notice to Designer designating date and time the work will be uncovered a minimum of three business days in advance.

D. Performance:

1. Execute cutting and patching by methods which will prevent damage to other work, and will provide proper surfaces to receive installation of repairs.
   a. In general, where mechanical cutting is required, cut work with sawing and grinding tools, not with hammering and chopping tools. Core drill openings through concrete work.
   b. Prior to cutting and structural steel or concrete work, contact Designer and Project Structural Engineer in writing. Do not cut any structural steel and concrete work until approval has been granted by the Designer and the Project Structural Engineer.
2. Employ original installer or fabricator to perform cutting and patching for:
   a. Weather-exposed or moisture-resistant elements.
   b. Sight-exposed finished surfaces.
3. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances, and finishes.
4. Restore work which has been cut or removed; install new products matching existing to provide completed Work in accordance with requirements of Contract Documents.
5. Fit work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
6. Patch with seams which are durable and as invisible as possible. Flash and seal all penetration of exterior work. Comply with specified tolerances for the work.
7. Restore exposed finishes of patched areas; and, where necessary extend finish restoration onto retained work adjoining, in a manner which will eliminate evidence of patching.
   a. Where patch occurs in a smooth painted surface, extend final paint coat over the entire unbroken surface containing the patch.
8. Refinish entire surfaces as necessary to provide an even finish to match adjacent finishes:
   a. For continuous surfaces, refinish to nearest intersection.
   b. For an assembly, refinish entire unit.
E. Existing Utilities Services:

1. Interruptions to critical existing utility services will not be allowed, except as scheduled per Section 015000 - TEMPORARY FACILITIES AND CONTROLS.
   a. Sanitary sewer, storm drainage, and water changeovers as affecting existing services shall be done with no disruptions of existing services and scheduling of such work will require approval in writing by the UMA.
   b. All relocation of existing electrical, telephone, and gas services that are utility company owned shall be performed by the respective utility company, and the cost of any charges for such work shall be paid by the General Contractor. All utility installations and relocation shall be the responsibility of the General Contractor. Coordination of all of the aforesaid work is the responsibility of the General Contractor.

2. The General Contractor shall locate and record on Drawings all existing utilities along the course of the work by such means as the Designer and the UMA Project Manager may approve, and shall preserve such marked locations until the work has progressed to the point where the encountered utility is fully exposed and protected as required. It shall be the General Contractor’s responsibility to notify the proper authorities and/or utility company before interfering therewith.

3. Existing utilities that are indicated on the Drawings or whose locations are made known to the General Contractor prior to excavations, though accuracy and information as to grades and elevations may be lacking, shall be protected from damage during the excavation and backfilling operations and, if damaged by the General Contractor, it shall be repaired by the General Contractor at his/her own expense.

4. All exposed conduits, wires, and/or cables shall be provided with sufficient protection and support to prevent failure, fraying, or damage due to backfilling or other construction operations.

5. The General Contractor shall not obstruct access to existing active utility system manholes and catch basins which continue to serve facilities other than the project construction site. The General Contractor shall exercise measures as necessary to prevent the placement of impediments that limit continuous access by authorized utility company or UMA maintenance personnel and shall be required to reimburse the utility company or UMA for any expense incurred as a result of need to remove any such impediments to access.

F. Dig-Safe:

1. If excavation, staking or any other scarifying existing grade to a depth greater than 6 inches is required, the Contractor shall follow the standard DIG-SAFE procedures as described in Massachusetts General Laws (CMMR 82: Section 40). Contractor shall review the following procedures with the UMA Project Manager prior to initiating DIG-SAFE procedures to insure that there have not been changes.

2. The Contractor shall pre-mark all areas to the full extent of proposed excavation(s) with white paint. Use florescent pink paint when snow cover is present. Maintain complete visibility of paint for entire DIG-SAFE period.

3. After marking the site, apply for a DIG-SAFE permit on-line through UMA Physical Plant, website: http://www.umass.edu/physicalplant/index.html.

4. After marking the site, and at least 7 days before an excavation, the Contractor shall notify DIG-SAFE by calling 811 or online at http://www.digsafe.com.

5. On the same day as the DIG-SAFE request is made, the Contractor shall deliver to the Physical Plant DIG-SAFE Coordinator (Tel. No. 413-545-4903) a site plan indicating the DIG-SAFE Quick-Ticket Number and displaying all relevant areas and pre-marked limits of the proposed excavation(s).
6. If the Contractor is informed of issues regarding the proposed excavation, the Contractor shall resolve those issues to the satisfaction of the UMA DIG-SAFE Coordinator. Issues that may require changes in the project design shall be brought to the attention of the Designer and UMA Project Manager immediately for resolution. If no issues are raised by the DIG-SAFE Coordinator that require the design of the project to change, the Contractor may proceed with the proposed excavation(s) commencing seven (7) working days after submission of the site plan and Quick-Ticket Number to the DIG-SAFE Coordinator.

7. Prior to the “Dig-Safe” notification, the Owner requires General Contractors to provide their Superintendent with current “Dig-Safe” regulations, and a copy of Massachusetts General Laws, Chapter 82, Section 40.

1.17 DEBRIS REMOVAL

A. The General Contractor shall coordinate the removal of all demolition and construction waste by the Subcontractor from the job site on a daily basis. Waste shall be segregated for recycling. Comply with requirements of Section 017418 – DEMOLITION WASTE MANAGEMENT AND DISPOSAL and Section 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.

B. Debris shall be legally disposed of in a D.E.P. approved disposal site. The site to be used shall be submitted to and approved by the UMA Project Manager prior to the start of construction. All required dumping permits shall be obtained prior to start of construction. General Contractor shall submit receipts from the disposal site(s) as evidence of legal disposal. The Subcontractor shall pay the cost of any charges for debris removal.

C. The General Contractor shall bear responsibility for maintaining the building and site clean and free of debris, leaving all work in clean and proper condition satisfactory to UMA and the Designer. The General Contractor shall ensure that each of the Subcontractors clean up during and immediately upon completion of their work. Clean up includes the following tasks:

1. Remove all rubbish, waste, tools, equipment, appurtenances caused by and used in the execution of work.

D. Prevent the accumulation of debris at the construction site, storage areas, parking areas, and along access roads and haul routes.

E. Provide containers for deposit of debris and schedule periodic collection and disposal of debris.

F. Prohibit overloading of trucks to prevent spillage on access and haul routes.

G. The General Contractor shall be responsible for proper disposal of all construction debris leaving the site.

1.18 FIELD MEASUREMENTS

A. Although care has been taken to ensure their accuracy, the dimensions shown for existing items and structures are not guaranteed. It is the responsibility of the General Contractor to verify these dimensions in the field before fabricating any construction component. No claims for extra payment due to incorrect dimensions will be considered by the Commonwealth.
1.19 EMERGENCY PROCEDURES

A. The General Contractor shall thoroughly familiarize himself (review with UMA Project Manager, EH&S, and Public Safety) with UMA Emergency Procedures and inform all Subcontractors of same. Note that on campus:

1. Dialing “911” may reach Amherst Police or UMA Police (UMPD) depending on the phone used. Therefore, always identify your location as being as UMass Amherst including the project/building address and/or names of adjacent roads and or buildings.

2. Dialing 5-3111 on a campus phone or 413-545-3111 on an outside phone reaches the UMA Police (UMPD). UMPD can facilitate obtaining necessary services for the emergency.

B. Emergencies: In the event of an emergency on-site, telephone for emergency services (ambulance, fire department or police assistance).

1. Telephone for Emergency Service: UMPD 413-545-3111.

2. Call 911 or 545-3111 and inform them if confined space rescue equipment is required or if hazardous material is involved.

3. If live steam, electricity, or other utilities need to be shut off, call the UMA Physical Plant Division Solutions Center switchboard (545-6401) and ask them to contact the appropriate shop.

4. If live steam, electricity, or other utilities need to be shut off, call the UMA Physical Plant Division Solutions Center switchboard (545-6401) and ask them to contact the appropriate shop.

5. Make the scene safe.

6. Render First-Aid if possible.

7. Preserve evidence.

8. Call the UMA Project Manager.

9. Call the UMA Project Manager and UMA EH&S (413-545-2682) for significant incidents/injuries beyond first aid, including situations that have the potential to cause significant personal injury or damage to UMA property. All spills of hazardous materials regardless of quantity shall be reported to EH&S. The UMA EH&S office is responsible for notifying MADEP if appropriate, and any necessary outside responders, unless the General Contractor has specified their own responder.

10. Contact the appropriate outside agencies as required by law, including OSHA for fatalities or injuries requiring hospitalization of three or more individuals (by Contractor). All regulatory notifications required for environmental events shall be made by UMA EH&S. General Contractors shall report any incident involving a radiographic source to UMA EH&S, the Mass Dept. of Public Health (DPH) and The US Nuclear Regulatory Commission (NRC). Ensure the UMA EH&S office is contacted as well for any of these circumstances.
SAFETY REGULATIONS

A. This project is subject to compliance with Public Law 91 596 "Occupational Safety and Health Act" latest edition (OSHA 29 CFR 1926), with respect to all rules and regulations pertaining to construction, including Volume 36, numbers 75 and 105, of the Federal Register, as amended, and as published by the U.S. Department of Labor.

B. Submit the name of the General Contractor's Safety Officer to the UMA Project Manager. Submit copies of safety reports to the UMA Project Manager monthly.

C. The General Contractor and each Subcontractor shall be responsible to submit a written Safety Program, prior to commencing construction, outlining measures they take to cover their operations and protect their employees. The General Contractor shall also submit a Site Specific Safety Plan with supporting Job Hazard Analysis documentation specific to their operations at the University and which addresses their plan of action for identified and potential environmental, health and safety issues that may arise prior to the start of construction. Maintain a written hazard communication program in accordance with OSHA 29CFR 1910.1200. Keep SAFETY DATA SHEETS (SDS) on site and upon request provide SDS sheets for materials used in the construction. The General Contractor shall submit the written Safety Program and Site Specific Safety Plan to the Designer and UMA Project Manager.

D. All accident reports are to be transmitted to the Resident Engineer within 24 hours of occurrence.

E. The Contractor shall immediately notify UMA EH&S and the UMA Project Manager if an OSHA, DEP or EPA regulator visits the site.

F. UMA and EH&S personnel shall have the authority to exercise on-site compliance audits on the construction site. Deficiencies discovered during site inspections and visits will be relayed to the contractor’s company safety representative and the UMA Project Manager. The contractor will communicate back to the UMA Project Manager and Environmental Health and Safety on the course of corrective action to be taken and the timeline for completion. If during such an audit, in his or her professional opinion, there exists an imminent danger or serious violation of established environment, health and safety standards that could lead to death or serious physical harm, damage to university property or the environment, the University representative has the right to request the immediate halt of such operations.

G. Hazardous Waste Generation: Any work generating Hazardous or so-called Universal Wastes will comply with all requirements of 310 CMR 30.000. The proper storage, use and disposal of any hazardous chemicals or substances brought on site by the Contractor are the responsibility of Contractor. The University will not be responsible for any hazardous materials left on site, the cost to remove these materials will be the Contractor’s responsibility. All hazardous wastes generated as a result of demolition and remodeling shall be contained, collected, segregated, labeled per all applicable federal EPA, Massachusetts DEP, and Federal DOT regulations or other applicable local, state or federal hazardous waste regulations, pending the appropriate disposition. Contractor shall provide for properly packaging hazardous waste, preparing the proper shipping papers, identifying a permitted disposal site, and contacting EH&S at least 24 hours prior to shipment of the waste. EH&S will review the hazardous waste shipment and sign the paperwork. EH&S must keep the “Generator” copies of the manifest on file in the EH&S office.
H. The contractor must inform EH&S if they intend to store any type of oil in 55 gallons or larger quantities so that such storage can be included in the UMass SPCC plan, this includes oil for equipment, form oil, cutting oil, diesel, gasoline, etc. Spills of any oil outside to soil, water or ambient air shall be reported to EH&S. Oil is also considered to be a hazardous waste in the state of MA when it is disposed. All waste oil must be managed in accordance with the hazardous waste section of this document.

I. Non-Destructive Testing: The Contractor shall notify the UMA Project Manager and the Environmental Health and Safety Department 3 days prior to the use of a radiography or x-ray equipment. The Contractor shall demonstrate safety procedures acceptable to the University and also provide sufficient personnel to maintain the safety zone perimeter as required by code. UMA EHS must be contacted to review all radiography to be performed on campus property before it takes place. In the event of a failed source, it is the contractor’s responsibility to recover a damaged radiography source, moisture density gauge or other radioactive source used in the construction industry and to decontaminate any soil, equipment or other university property contaminated by a failed source.

J. Any salamanders used must exhibit an approval tag from the Massachusetts State Fire Marshal and any Contractor intending to utilize a salamander shall meet the requirements of 527CMR 20 and obtain a permit from the local Fire Department.

K. All Hot Works, including cutting, welding, brazing, etc., requires a permit from the UMA Environmental Health and Safety Dept. (EH&S), located at Draper Hall, (545 2682). A Hot Works permit is not required for work performed outside (unless it is in a temporary enclosure such as a tent). Contractor must provide a minimum of one operable fire extinguisher approved by a recognized testing laboratory and rated for the intended purpose near each Hot Work operation. At least one employee of the contractor shall remain on the site for one hour after the hot work has ceased to ensure against the outbreak of fire.

L. Use of Liquefied Propane Gas (LPG) and containers on site must be approved by and a permit must be secured through the local Fire Department.
   2. Contractor must provide a minimum of one operable 20 BC rated fire extinguisher approved by a recognized testing laboratory near each LPG operation.

M. Use of torches or other flame producing devices for the removal of paint from buildings, or the application or removal of roofing materials must conform with the State Fire Marshal's regulations (527 CMR 10.24).
   1. Permit must be secured through the local Fire Department and UMA EH&S.
   2. An approved and operable fire extinguisher must be kept in the work area
   3. At least one (1) workman must remain at the work area for (1) hour after the use of the torch or flame producing device has ceased.

N. Contractors performing work in buildings that will cause smoke or dust particles to become airborne must first check for the existence and location of heat or smoke detectors and other types of fire protection system equipment which may be affected by the work. The contractor shall request isolation or deactivation of such equipment through the UMA Project Manager. Such isolation, deactivation and notification shall occur prior to commencing work. Upon completion of the work, the contractor shall request reactivation of such equipment through the Project
Manager. UMA EH&S may require that smoke detectors be bagged on a daily basis if smoke or dust particles may affect them. In this event bags must be removed at the end of the day. Notify the U.M.A, Environmental Health and Safety Fire Prevention officer prior to isolation or deactivation of such equipment.

O. All construction will comply strictly with the Massachusetts State Building Code - 780 CMR, Chapter 33 – Safeguards During Construction. Required fencing, sidewalk sheds, storage of flammables, portable fire extinguishers, fire standpipe operation and rubbish removal will be enforced by UMA EH&S.

P. Confined Space Requirements:
1. Permit Required Confined Spaces, (PRCS). If work under this Contract specifically or incidentally requires this Contractor or any of his Sub-Contractors to enter spaces that are meeting the definition provided in 1910.146 of a “Permit Required Confined Spaces”, it shall be the responsibility of the Contractor entering the space to have in place a Permit Required Confined Space Entry Program that meets OSHA 29CFR 1910.146 requirements. No entry shall be made without the permit. UMass requires that confined spaces encountered in construction projects be evaluated and entered in accordance with 1910.146
2. It is also the responsibility that any work performed under this contract in PRCS’s be performed in strict compliance with the contractor’s own PRCS/OSHA Policy.
3. At the conclusion of any work in a PRCS, the General Contractor shall debrief the Project Manager and provide copies of the documentation required under the Contractor’s PRCS Policy.
4. If University personnel must enter the PRCS, a separate UMass Permit will be issued.

Q. Contractors intending to use a device labeled as a CLASS 3 or 4 laser, in the services required under the contract, shall notify the University Representative at least two (2) working days prior to the intended date of use. Utilization of such a device shall meet the Commonwealth of Massachusetts Regulations, under 105 CMR 121.000, entitled RULES AND REGULATIONS RELATIVE TO THE USE OF LASER SYSTEMS, DEVICES OR EQUIPMENT TO CONTROL THE HAZARD OF LASER RAYS OR BEAMS.

R. Prior to entry for review or work, in any areas storing or using radioactive material, the Contractor shall submit a written request for clearance, to the University of Massachusetts Division of Environmental Health and Safety (E.H.& S.) and the University Representative. No work shall be performed in such areas until a “Radiation Area Job Permit” has been approved, signed, and issued to the Contractor, by an official of E.H.& S. Such areas have the appropriate signs and labels posted at each entrance.

S. Prior to any entry in active laboratories, contractor employees that will be entering the space are required to receive laboratory safety training by UMA EH&S. When working in active laboratories, contractor employees must adhere to the posted PPE on the Laboratory Door Cards. Decontamination, chemical, biological and/or radiological may need to take place. To determine the extent of what needs to be done, contact EH&S Laboratory Safety. Work may not begin until EH&S has given clearance.
1.21 OSHA SAFETY AND HEALTH COURSE DOCUMENTATION

A. OSHA Safety and Health Course Documentation Records: Chapter 306 of the Massachusetts Acts of 2004 requires that everyone employed at the jobsite must complete a minimum 10-hour long course in construction safety and health approved by the U.S. Occupational Safety and Health Administration (OSHA) prior to working at the jobsite. Compliance is required of General Contractors’ and Subcontractors’ on-site employees at all levels whether stationed in the trailer or working in the field. Unless the Massachusetts Attorney General’s office indicates otherwise, this requirement does not apply to home-office employees visiting the site or to suppliers’ employees who are making deliveries.

B. Documentation records shall be initially compiled by the General Contractor and Subcontractors as part of their certified payrolls, and the General Contractor shall create and maintain a copy of the documentation on site at all times. On-site documentation shall be filed in alphabetical order and immediately available to UMA’s Project Manager and OSHA inspectors. Fines imposed for non-compliance shall be promptly paid by the General Contractor at no additional expense to UMA. Delays in the progress of the Work caused by such non-compliance will not be acceptable as the basis for an extension of contract time or change order request.

1.22 DAMAGE RESPONSIBILITY

A. The General Contractor shall repair, at no cost to UMA, any damage to building elements, site appurtenances, landscaping, utilities, etc. caused during demolition operation and work of this Contract.

1.23 OWNER FURNISHED PRODUCTS

A. Products indicated “N.I.C.” (Not in Contract), or “E. O.” (Equipment by Owner), or “O.F.O.I.” (Owner Furnished Owner Installed), or other similar acronyms as defined in the contract documents will be furnished and installed by the Owner. Coordination and provision of service lines for such products shall be included under these Construction Contract Documents, if indicated. Final connections from service lines to equipment will be by the Owner, unless otherwise indicated.

1.24 UMA OCCUPANCY

A. Beneficial Use and Occupancy: Refer to requirements in Section 017700 - CONTRACT CLOSEOUT, Par. 1.6.

B. Use and Occupancy: When the project is Substantially Complete (with all work affecting health, safety, and function totally completed, and with less than one percent (<1%) of the contract value remaining) and ready for Use and Occupancy as determined by the Designer, the UMA Project Manager and the Operating Agency, then the UMA will take control of their building area(s) and be responsible for operating costs and security.
ASBESTOS AND HAZARDOUS MATERIALS DISCOVERY

A. If unanticipated asbestos-containing materials or other Hazardous Materials not included in Contract are discovered at any time during the course of work, the General Contractor shall cease work in the affected areas only and continue work in other areas, at the same time notify UMA, UMA EH&S and the Designer of such discovery. Do not proceed with work in such affected areas until written instructions are received. If removal is required, payment will be made in accordance with the contract unit prices bid for each respective material. In the absence of unit prices, costs shall be negotiated or otherwise established prior to commencement of removal, in accordance with provisions of the Contract.

B. The UMA Project Manager and UMA EHS will work with the Contractor to initiate removal or encapsulation of the asbestos. An extension of the completion date may be granted equal to the time lost. Proper notification must be made to the MADEP through the ANF-001 form, and the UMA EH&S.

SPECIAL REQUIREMENTS

A. The General Contractor shall prepare both a Safety Manual and a Site Specific Safety Plan with supporting Job Hazard Analysis documentation. The minimum contents of the documents are specified in Section 011000 – SUMMARY, Par. 1.20.

B. The General Contractor shall be solely responsible for implementing the procedures specified in the Plan.

C. The General Contractor shall make available complete sets of personal protective equipment and clothing to UMA for use during site observations/inspections by UMA and the Designer. These shall be supplied and maintained at no cost to UMA and the Designer, and shall be returned to the General Contractor upon the completion of work, except for disposable protective clothing.

1. The General Contractor shall provide a repository for collection and disposal of health and safety materials. Collection and disposal of contaminated disposable supplies shall be at no additional cost.

DEFINITIONS

A. Words in the singular shall also mean and include the plural, wherever the context so indicates, and words in the plural shall mean the singular, wherever the context so indicates.

B. Wherever the terms "shown on drawings" are used in the specifications, they shall mean "noted", "indicated", "scheduled", "detailed", or shall refer to any other diagrammatic or written reference made on the drawings.

C. Wherever the term "provide" is used in the specifications or on the drawings it will mean "furnish" and "install", "connect", "apply", "erect", "construct", or similar terms, unless otherwise indicated in the contract documents.
D. Wherever the term "material" is used in the specifications it will mean any "product", "equipment", "device", "assembly", or "item" required under the Contract, as indicated by trade or brand name, manufacturer's name, standard specifications reference or to other description.

E. The terms "approved" or "approval" shall mean the written approval of the Designer or UMA Project Manager.

F. The term "specifications" shall mean all information contained in the bound or unbound volume, including all "Contract Documents" defined herein, except for the drawings.

G. The terms "directed", "required", "permitted", "ordered", "designated", "prescribed", and similar words shall mean the direction, requirement, permission, order, designation or prescription of the Designer or UMA Project Manager; the terms "approved", "acceptable", "satisfactory", and similar words shall mean approved by, acceptable or satisfactory to the Designer or UMA Project Manager; and the terms "necessary", "responsible", "proper", "correct", and similar words shall mean necessary, reasonable, proper or correct in the judgment of the Designer or UMA Project Manager.

H. "Concealed" means hidden from sight in chases, furred spaces, shafts, hung ceilings, embedded in construction or in crawl spaces.

I. "Exposed" means not installed underground or "concealed" as defined above.

J. "Architect" shall refer to the Lead Designer of the Project, assumed to be a Registered Architect. In the case of a project that is designed by a licensed design professional other than a Registered Architect, the licensed design professional shall assume the administrative roles of the Architect.

K. "Owner/Commonwealth" shall refer to Commonwealth of Massachusetts or University of Massachusetts, Amherst.

L. UMA Project Manager shall refer to the University of Massachusetts Amherst, Design & Construction Management Division employee responsible for the project.

M. UMA Resident Engineer shall refer to the University of Massachusetts Amherst, Design & Construction Management Division on-site representative.

N. EHS shall refer to the Environmental Health and Safety Department at the University of Massachusetts Amherst.

O. Public Safety shall refer to the Police Department at the University of Massachusetts Amherst.

P. UMA shall refer to the University of Massachusetts Amherst.

Q. Designer shall refer to the licensed professional designer of record for the project. This person may be a consultant hired by the University or may be an employee of the Design & Construction Management Division at the University of Massachusetts Amherst.

R. "Hazardous Waste" shall refer to a waste, or combination of wastes, which because of its quantity, concentration, or physical, chemical or infectious characteristics may cause, or significantly contribute to an increase in serious irreversible, or incapacitating reversible illness or pose a substantial
present or potential hazard to human health, safety, or welfare or to the environment when improp-
erly treated, stored, transported, used or disposed of, or otherwise managed, however, not to include
solid or dissolved materials in irrigation return flows or industrial discharges which are point
sources subject to permits under section 402 of the Federal Water Pollution Control Act of 1967 as
amended, or source, special nuclear, or by product material as defined by the Atomic Energy Act
of 1954.”

S. Universal Wastes means any of the following hazardous wastes
   1. Batteries;
   2. Pesticides;
   3. Thermostats;
   4. Mercury-containing devices; and
   5. Mercury-containing lamps (standard fluorescent light tubes (FLT)).

1.28 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the
   intended meaning of certain terms, words, and phrases when used in particular situations. These
   conventions are as follows:

   1. Imperative mood and streamlined language are generally used in the Specifications. The
      words "shall," "shall be," or "shall comply with," depending on the context, are implied
      where a colon (:) is used within a sentence or phrase.

   2. Specification requirements are to be performed by the General Contractor unless
      specifically stated otherwise.

B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of
   all Sections in the Specifications.

C. Drawing Coordination: Requirements for materials and products identified on Drawings are
   described in detail in the Specifications. One or more of the following are used on Drawings to
   identify materials and products:

   1. Terminology: Materials and products are identified by the typical generic terms used in
      the individual Specifications Sections.

   2. Abbreviations: Materials and products are identified by abbreviations as scheduled on
      Drawings.

   3. Keynoting: Materials and products are identified by reference keynotes referencing
      Specification Section numbers found in this Project Manual.

D. Where Drawings or Specifications conflict or are unclear, advise Designer and UMA Project
   Manager in writing before Award of Contract. Otherwise, Designer's interpretation of Contract
   Documents shall be final, and no additional compensation shall be permitted due to discrepancies
   or unclarities thus resolved.
E. Where Drawings or Specifications do not coincide with manufacturers' recommendations, or with applicable codes and standards, alert Designer in writing before installation. Otherwise, make changes in installed work as Designer requires within Contract Price.

F. If the required material, installation, or work can be interpreted differently from drawing to drawing, or between drawings and specs, this contractor shall provide that material, installation, or work which is of the higher standard.

G. It is the intent of these contract documents to have the contractor provide systems and components that are fully complete and operational and fully suitable for the intended use. There may be situations in the documents where insufficient information exists to precisely describe a certain component or subsystem, or the routing of a component. In cases such as this, where the contractor has failed to notify the Designer of the situation in accordance with the paragraph above, the contractor shall provide the specific component or subsystem with all parts necessary for the intended use, fully complete and operational, and installed in workmanlike manner either concealed or exposed per the design intent.

1. In cases covered by the paragraph above, where the contractor believes he needs engineering in cases covered by the paragraph above, where the contractor believes he needs engineering guidance, he shall submit a sketch identifying his proposed solution and the Designer shall review, note if necessary, and approve the sketch.

1.29 LIST OF DRAWINGS

- D-A-135-1010301 - T1 Title Sheet
- D-A-135-1010301 - T2 Roof Cross Sections and Conceptual Tapered Insulation Plan
- D-A-135-1010301 - A1 Roof Area Plan
- D-A-135-1010301 - A2 Partial South Elevation
- D-A-135-1010301 - D1 Roof Details, Sheet 1
- D-A-135-1010301 - D2 Roof Details, Sheet 2
- D-A-135-1010301 - D3 Window Details

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000
SECTION 012900
PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 1 - GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.

1.2 SUMMARY

A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Related Requirements:

1. Section 013200 - CONSTRUCTION PROGRESS DOCUMENTATION for administrative requirements governing the preparation and submittal of the General Contractor's construction schedule.

1.3 DEFINITIONS

A. Schedule of Values: A statement furnished by the General Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing General Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the schedule of values with preparation of the General Contractor's construction schedule.

1. Coordinate line items in the schedule of values with other required administrative forms and schedules, including the following:

a. Application for Payment forms with continuation sheets.

b. Submittal schedule.

c. Items required to be indicated as separate activities in the General Contractor's construction schedule.

2. Submit the initial Schedule of Values to the Designer and UMA Project Manager within twenty (20) calendar days after the issuance of a Purchase Order for the Contract, but no later than the Pre-Construction conference or thirty days before the date scheduled for submittal of initial Application and Certificate for Payment whichever occurs first.
3. **Sub-schedules for Phased Work**: Where the Work is separated into phases requiring separately phased payments; provide sub-schedules showing values coordinated with each phase of payment.

4. Retain "Subschedules for Separate Elements of Work" Subparagraph below if the Work is divided into separate elements for large projects, such as floors or wings or multiple buildings. See the Evaluations in Section 013200 "Construction Progress Documentation."

5. **Sub-schedules for Separate Elements of Work**: Where the General Contractor's construction schedule defines separate elements of the Work; provide sub-schedules showing values coordinated with each element.

**B. Format and Content**: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section for every Division.

1. **Identification**: Include the following Project identification on the schedule of values:
   a. Project name and location.
   b. Name of Architect.
   c. Architect's project number.
   d. General Contractor's name and address.
   e. Date of submittal.

2. Arrange schedule of values consistent with format of AIA Document G703 form.

3. Arrange the schedule of values in tabular form with separate columns to indicate the following for each item listed:
   a. Related Specification Section or Division.
   b. Description of the Work.
   c. Name of Subcontractor.
   d. Name of manufacturer or fabricator.
   e. Name of supplier.
   f. Change Orders (numbers) that affect value.
   g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

   1) Labor.
   2) Materials.
   3) Equipment.


5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
6. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
   a. Differentiate between items stored on-site and items stored off-site. If required, include evidence of insurance.

7. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

8. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.

9. Purchase Contracts: Provide a separate line item in the schedule of values for each purchase contract. Show line-item value of purchase contract. Indicate owner payments or deposits, if any, and balance to be paid by General Contractor.

10. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
   a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at the General Contractor's option.

11. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by UMA Project Manager and paid for by UMA.

1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and Final Application for Payment involve additional requirements.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between UMA and General Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

C. Payment Application Times: Submit Application for Payment to the Designer and UMA Project Manager by the first day of the following month. The period covered by each Application for Payment is one month, ending on the last day of the month.

1. Submit draft copy of Application for Payment (Pencil Requisitions) seven (7) days prior to due date for review by the Designer and UMA Project Manager.
D. Application for Payment Forms: Use AIA Document G702 and AIA Document G703, Continuation Sheets as form for Applications for Payment and Pencil Requisition.

E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of the General Contractor. The Designer will return incomplete applications without action.

1. Entries shall match data on the schedule of values and General Contractor's construction schedule. Use updated schedules if revisions were made.
2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
4. Indicate separate amounts for work being carried out under UMA-requested project acceleration.

F. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.

1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment, for stored materials.
2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
3. Provide summary documentation for stored materials indicating the following:
   a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
   b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
   c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.

G. Transmittal: Submit One (1) signed and notarized pdf copy of each Application for Payment to Designer by email, with cc: to UMA Project Manager. Include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

H. Waivers of Mechanic's Lien: With each Application for Payment, submit one (1) waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.

1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
2. When an application shows completion of an item, submit conditional final or full waivers.
3. UMA reserves the right to designate which entities involved in the Work must submit waivers.

4. Waiver Forms: Submit executed waivers of lien on forms acceptable to UMA.

I. Waivers of Mechanic's Lien: With each Application for Payment, submit five (5) waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.

1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.

2. When an application shows completion of an item, submit conditional final or full waivers.

3. UMA reserves the right to designate which entities involved in the Work must submit waivers.

4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application that is lawfully entitled to a lien.

5. Waiver Forms: Submit executed waivers of lien on forms, acceptable to UMA.

J. Weekly Payroll Records: Each General Contractor, Subcontractor and Sub-Subcontractor is required to submit a copy of their weekly payroll records to the designated UMA Administrative Services representative. This is required to be done on a weekly basis throughout the duration of the Contract.

K. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of Subcontractors.

2. List of Sub-subcontractors.

3. Schedule of values.

4. General Contractor's construction schedule (preliminary if not final).

5. Combined General Contractor's construction schedule (preliminary if not final) incorporating Work of multiple contracts, with indication of acceptance of schedule by each Contractor.

6. Products list (preliminary if not final).

7. Schedule of unit prices. As applicable.

8. Submittal schedule (preliminary if not final).

9. List of General Contractor's staff assignments.

10. List of General Contractor's principal consultants.

11. Copies of building permits and other applicable permits issued for construction by Subcontractors and Sub-subcontractors.


13. Copies of U.S Department of Labor Occupational Safety and Health Administration 10-hour Occupational Safety and Health Construction Safety & Health Training Course completion cards/certificates for all personnel assigned in support of the project from the General Contractor, Subcontractor and Sub-subcontractors.


16. Certificates of insurance and insurance policies.

17. Performance and payment bonds.
18. Data needed to acquire Owner's insurance.

L. Application for Payment at Substantial Completion: After UMA Project Manager issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.

2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

M. Final Payment Application: After completing Project closeout requirements, submit Final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
6. AIA Document G707, "Consent of Surety to Final Payment."
7. Evidence that claims have been settled.
8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when UMA took possession of and assumed responsibility for corresponding elements of the Work. As applicable.
9. Final liquidated damages settlement statement. As applicable.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900
SECTION 013100
PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 SUMMARY

A. Without limitations, coordination will include Critical Path Method Scheduling (CPM), coordination of submittals, coordination of all elements of the Work, and coordination of contract closeout.

B. Description:

1. Coordinate scheduling, submittals, and work of the various Subcontractors and elements of the Work to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items to be installed later.
2. Coordinate sequence of the Work to accommodate UMA Partial (Beneficial) Occupancy.

C. Related Requirements:

1. Section 013200 - CONSTRUCTION PROGRESS DOCUMENTATION for preparing and submitting General Contractor’s construction schedule.
2. Section 017700 - CONTRACT CLOSEOUT for coordinating closeout of the Contract.

D. Meetings:

1. In addition to progress meetings, hold coordination meetings and pre-installation conferences with personnel and Subcontractors to assure coordination of the Work.

E. Coordination of Submittals:

1. Schedule and coordinate submittals.
2. Coordinate work of various Subcontractors having interdependent responsibilities for installing, connecting to, and placing in service such equipment.
3. Coordinate requests for substitutions to assure compatibility of space, of operating elements, and effect on work of other Subcontractors.
F. Commissioning:

1. A systematic process of ensuring that building systems affected by the work of the Contract perform interactively according to the Designer’s design intent and the UMA’s operational needs. This is to be achieved through actual verification of systems performance during the construction period by the UMA Project Manager and Designer.

2. The commissioning process does not take away from, or reduce the responsibility of, the General Contractor and installing Subcontractors to provide a finished and fully functioning product.

1.3 GENERAL COORDINATION PROCEDURES

A. Coordination: The General Contractor shall coordinate the work of their Subcontractor’s construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Each Subcontractor shall coordinate its operations with operations, included in different Sections, which depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.

2. Coordinate installation of different components with other contractors to ensure maximum performance and accessibility for required maintenance, service, and repair.

3. Make adequate provisions to accommodate items scheduled for later installation.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for the Designer and UMA Project Manager and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of General Contractor's construction schedule.
2. Preparation of the Schedule of Values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Change Order Requests.
8. Project closeout activities.
9. Startup and adjustment of systems.

D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as UMA’s property and/or slated for re-use by the Contractor.

1.4 REQUESTS FOR INFORMATION (RFIs)

A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.

1. Designer will return RFIs submitted to Designer by other entities controlled by Contractor with no response.
2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

1. Project name.
2. Project number.
3. Date.
4. Name of Contractor.
5. Name of Designer.
6. RFI number, numbered sequentially.
7. RFI subject.
8. Specification Section number and title and related paragraphs, as appropriate.
9. Drawing number and detail references, as appropriate.
10. Field dimensions and conditions, as appropriate.
11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
12. Contractor's signature.
13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
   a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.


1. Attachments shall be electronic files in Adobe Acrobat PDF format.

D. Designer's Action: Designer will review each RFI, determine action required, and respond. Allow seven working days for Designer's response for each RFI. RFIs received by the Designer after 1:00 p.m. will be considered as received the following working day.

1. The following Contractor-generated RFIs will be returned without action:
   a. Requests for approval of submittals.
   b. Requests for approval of substitutions.
c. Requests for approval of Contractor's means and methods.
d. Requests for coordination information already indicated in the Contract Documents.
e. Requests for adjustments in the Contract Time or the Contract Sum.
f. Requests for interpretation of Designer's actions on submittals.
g. Incomplete RFIs or inaccurately prepared RFIs.

2. Designer's action may include a request for additional information, in which case UMA Project Manager's time for response will date from time of receipt of additional information.

3. Designer's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to the CONTRACT AND GENERAL CONDITIONS.
   a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Designer in writing within ten days of receipt of the RFI response.

E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly during the weekly project progress meetings. Include the following:
   1. Project name.
   2. Name and address of Contractor.
   3. Name and address of Designer.
   4. RFI number including RFIs that were returned without action or withdrawn.
   5. RFI description.
   6. Date the RFI was submitted.
   7. Date Designer's response was received.

F. On receipt of Designer's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Designer within seven days if Contractor disagrees with response.
   1. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
   2. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100
PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 REQUIREMENTS INCLUDED

A. Procedures and requirements for submission and review of progress schedules and reports.

1.3 RELATED SECTIONS

A. CONTRACT AND GENERAL CONDITIONS for failure to complete the Work on time - liquidated damages.

B. Section 011000 – SUMMARY for project meetings.

C. Section 013100 – PROJECT MANAGEMENT AND COORDINATION for progress and coordination meetings.

D. Section 013300 – SUBMITTAL REQUIREMENTS for project reports, Schedule of values, Shop drawings, product data and samples.

E. Section 015000 – TEMPORARY FACILITIES AND CONTROLS for applicable computer equipment hardware, software, and ancillary supplies.

1.4 CONSTRUCTION SCHEDULE

A. General Contractor shall prepare and submit for Designer and UMA’s information, a Critical Path Method (CPM) Progress Schedule for the work of the project. Said schedule will be coordinated with the Designer’s Work Plan to include sequencing of the project work (both design and construction). In addition, a Project Scheduler will be required for this project.

1. General Schedule Requirements
2. Critical Path Method (CPM) Schedule Requirements
3. Critical Path Submission Requirements
4. Critical Path Progress Reporting and Changes
5. Progress Payments to General Contractor
6. Adjustment of Critical Path Contract Completion Time
B. Critical Path Method Scheduler.

C. Design of Project.

1.5 CRITICAL PATH METHOD SCHEDULING

A. General Contractor’s Schedule Requirements are contained herein, and are to be provided to UMA by the General Contractor.

1. General Schedule Requirements

a. Upon the finalization of the agreement, signified by issuance of the UMA Notice to Proceed with Construction, the General Contractor shall develop a network plan to demonstrate complete fulfillment of all Working Documents and Construction contract requirements. The General Contractor shall keep the network plan up to date in accordance with the progress and logic update requirements stated herein, and shall utilize the network plan in planning, coordinating and performing the work of this project (including all activities of Designer, Subcontractors, equipment vendors and suppliers). General Contractor’s monthly payments will be made in direct relation to the activity items scheduled and by the progress completion of those activities. Upon authorized commencement of the construction phase of the contract, as signified by the UMA Notice to Proceed with Construction, the General Contractor shall provide the microcomputer, associated hardware and software required for the project site as defined under Section 015000 – TEMPORARY FACILITIES AND CONTROLS, Par. Computers. Substitute software, approved in writing by UMA, will be considered provided that the promised substitution is totally compatible with Microsoft Project and all UMA software.

b. Within twenty (20) calendar days of receipt of the UMA Notice to Proceed with Construction, the General Contractor shall submit to the UMA Project Manager, an expanded Time Scaled Critical Path Method (CPM) Network Diagram for the entire project duration. This preliminary schedule need not be resource loaded.

c. Within thirty (30) calendar days after receipt of the UMA Notice to Proceed with Construction, but by no later than the Pre-Construction conference, the General Contractor shall submit for review by the UMA Project Manager, a complete Time Scaled Critical Path Method (CPM) Network Diagram for the complete project, including all construction activities. All completion dates shall be within the period required by the contract for completion of the project. This complete duration project schedule must be fully resource loaded. The General Contractor shall provide a presentation where the schedule’s activities and logic are fully explained.

d. Within five (5) calendar days after receipt of the complete Critical Path Method Network Diagram, UMA and the General Contractor shall meet with the Designer and their consultant engineers and Subcontractors, for joint review(s), correction, or adjustment of the proposed plan and schedule(s). Within five (5) calendar days after the joint review(s), the General Contractor shall revise the proposed CPM Network Diagram in accordance with agreements reached during the joint review(s) and shall furnish two copies of the Diagram as defined hereinafter (in Para. 1.5.3), to the UMA Project Manager. This CPM Network Diagram, as revised at the joint review, is the Project Schedule (and shall be the Target Schedule to which all future changes are compared) until subsequently revised in accordance with the logic update
requirements stated hereinafter (in Para. 1.5.4). All appropriate Subcontractors shall also be furnished copies of the Time Scaled Network Diagram.

e. Until the joint review(s) and subsequent issuance of the complete Project Schedule, as defined hereinbefore, the establishment of the Microsoft Project database, all Payment Requisition Schedule of Values and General Contractor Payment Forms may be produced manually.

2. Critical Path Method (CPM) Scheduling Requirements

a. The Critical Path Method (CPM) schedule shall as a minimum, provide the following computer-produced graphic reports which shall be supplied with each Critical Path Submission and revision thereto (which shall show Early Start, Early Finish, Late Start, Late Finish and Total Float):

1) Bar Chart – serving as the required Two Week Look Ahead Schedule sorted by WBS or Activity Codes, per UMA Project Manager (and narrative format if requested by the UMA Project Manager, at no additional cost). A Two Week Look Ahead Schedule, generated from the Project Schedule, shall be submitted for review and discussion at the weekly project meeting.

b. Payment requisition Schedule of Values (CSI formatted) and General Contractor Payment form, to be produced monthly through custom software which uses the Microsoft Project database percentage complete to calculate payment owed to General Contractor.

c. Microsoft Project Database: The complete Microsoft Project database for the project shall be submitted monthly with each Critical Path Submission electronically.

d. Material/Supplies Schedule: As a minimum, a full list of all materials required for the project shall be listed. This list shall include coded sub-lists relating to the activity codes of the Critical Path Method schedule. The Material/Supplies Schedule sub-lists shall be required which list all materials required for critical activities, all items of long lead time nature (i.e., transformers, plantings, windows, doors and frames, electrical and mechanical equipment, etc.), all pre-purchase items and all Owner-furnished items. The schedule shall provide names, addresses, and telephone numbers of suppliers, key suppliers’ contact person, order placement data, order confirmation data, proposed arrival date, actual arrival date and all other pertinent information. This Critical Materials/Supplies Schedule and its associated sub-lists shall be updated as directed by the UMA Project Manager and as a minimum at each Logic Update period.

e. Utilities Schedule: As a minimum, a full list of all utilities required for the project shall be listed. The list shall include codes that relate to the activity code of the Critical Path schedule where appropriate. The list shall include type of utility, usage levels required, and timing of requirements.

f. Equipment Schedule: As a minimum, a full list of all equipment required for the project shall be listed. The list shall include codes that relate to the activity code of the Critical Path schedule where appropriate. The list shall include type of equipment, usage levels required, and timing of requirements.

3. Critical Path Progress Reporting and Changes (Progress and Logic Update)

a. The General Contractor shall provide a complete progress update during the weekly project progress meetings. The progress update shall include complete updating of the schedule progress per activity --- both amount paid and amount remaining. Actual cost amount paid and amount remaining shall agree with the payment requisition forms required hereinbefore. The requirements for schedule progress
a. The General Contractor is required to prepare and maintain a working Two Week Look Ahead Schedule for the purpose of reporting the progress of the work against the agreed upon schedule. Reporting are further specified hereinafter. A full Two Week Look Ahead Schedule will be required at each progress update.

b. The General Contractor shall assume that the full duration of the contract will be required to complete the work of the contract. Positive float/slack belongs to the project and must be used in the best interest of completing the project on time in the event departure from the network occurs. If negative float/slack is indicated on the schedule, recovery schedules shall be prepared by the General Contractor at no additional cost to the Commonwealth, indicating how the work will be expedited to meet current contract completion dates. The General Contractor’s construction schedule shall begin with the date of issuance of the UMA Notice to Proceed and conclude with the contract date of Final Completion of the Project. Float or slack time within the construction schedule is not for the exclusive use or benefit of either the Commonwealth or the General Contractor, but is a jointly owned, expiring project resource available to both parties as needed to meet contract milestones and the contract completion date. Therefore, any existing float shall be used to the maximum extent possible to offset:

1) Unexpected delays which occur in connection with the General Contractor’s work; and

2) Contract change actions initiated by the parties specified in the contract (i.e., Changes in the Work).

c. Where delays are incurred, the General Contractor shall provide through weekly and/or full logic CPM update how the work delay can be returned to the approved schedule. The General Contractor agrees that whenever it becomes apparent from the current weekly computer produced calendar-dated schedule that the contract completion date will not be met, he/she will take some or all of the following actions at no additional cost to the Commonwealth:

1) Increase design review and/or construction manpower and/or equipment in such quantities and crafts as will substantially eliminate, in the judgment of the UMA, the backlog of work and any impact on the construction activities.

2) Increase the number of working hours per shift, shifts per working day, working days per week, or the amount of construction equipment, or any combination of the foregoing, sufficiently to substantially eliminate, in the judgment of the UMA, the backlog of work.

3) Reschedule activities to achieve maximum practical concurrence of accomplishment of activities.

d. Float shall be used as it occurs (time extension granted or job delay). If a time extension and job delay occurs in the same logic update period (normally weekly), the delay will be entered in the network first.

e. In addition to the foregoing, the General Contractor shall submit a narrative report every other week (bi-weekly) and at the same time as the updated schedule required by the preceding paragraphs in a form agreed upon by the UMA Project Manager. The narrative report shall include a description of problem areas, current and anticipated delaying factors and their estimated impact on performance of other activities and completion dates, and an explanation of corrective action taken or proposed.

f. The UMA shall have the right to require the General Contractor to furnish additional printouts of logic updated schedules and time scaled network diagrams, reflecting actual or estimated time changes resulting from unexpected delays, change orders, strikes, etc., at no additional cost to the Commonwealth.
4. Progress Payments to General Contractor
a. The weekly Two Week Look Ahead Schedule Submission shall be an integral part and basic element of the estimate upon which progress payments shall be made. The General Contractor shall be entitled to progress payment only upon approval of estimates as determined from the currently approved updated computer-produced Two Week Look Ahead Schedule. Payments will be made against activity items shown on the computer-produced schedule and as reflected on UMA approved format payment forms which shall be used in conjunction with Microsoft Project. The General Contractor shall produce the Schedule of Values and the Standard Payment forms by following the guidelines of UMA Project Manager. This shall include entering the Net Amount Paid to Subcontractors against the appropriate activities.

b. Whereas every schedule activity is cost loaded, as well as manpower and equipment loaded (i.e., the schedule of payment values lists all schedule activities, at the end of every month the General Contractor’s payment application is a listing of all schedule activities started and completed, the percentage of work accomplished, and a calculation of the value of the work performed), but the Commonwealth is required to pay for work performed within a mandated time frame, the submittal of the schedule update is not a “condition precedent” to monthly progress payments; however, in the event the General Contractor fails to submit a computer-produced calendar-dated schedule or the initial or revised time scaled network diagram on the date designated by UMA, UMA shall have the right, after giving written notice to the General Contractor, to have the computer-produced calendar-dated schedule or time scaled network diagram prepared or revised (as applicable) by separate computer contract award or otherwise and to deduct the cost thereof from the contract amount through the progress payment which becomes due upon completion thereof and upon approval of UMA of the payment request. If, however, the General Contractor fails or refuses to furnish the information and data which, in the judgment of the UMA Project Manager, are necessary for preparation or revision of the computer-produced calendar-dated schedule or time scaled network diagram by separate contract or otherwise, after seven [7] calendar days written notice, the schedule requirement terms of the contract may be considered to have been breached by the General Contractor, and UMA may take any or all of the following additional actions:

1) Terminate the contract with prejudice (per Article XVII of the Contract).

5. Adjustment of Critical Path Contract Completion Time
a. The contract completion time or contract cost will and in general be adjusted only for change orders approved by UMA as outlined in the contract. In the event the General Contractor requests an extension of any contract completion date or cost increase he/she shall furnish such justification and supporting evidence as UMA may deem necessary for the determinations to whether the General Contractor is entitled to an extension of time or contract cost adjustment under the provisions of this contract. UMA approval as to the total number of days extension and/or increase in contract value shall be based upon the currently accepted computer-produced Critical Path schedule and on all data relevant to the extension. A request for an extension of time, associated with the change orders will not be considered unless it is clearly proven that the critical path has been negatively effected (such as, but not limited to, time impact analysis using resource loaded fragmentary networks to demonstrate the effect of delays on the overall project schedule). Such data shall be included as an activity linked to the activity, which is being impacted and will appear
in the next monthly schedule and logic update. All extensions for related manpower/equipment increases shall be applied to the appropriate existing activity items.

1) Contract time can only be extended by authorized approved change order.

b. Whereas time is of the essence in the performance of work under the contract, each request for change in any contract completion date shall be submitted by the General Contractor to UMA at the time an alleged delay occurs. Failure to notify UMA of any delay as provided in the contract shall preclude the General Contractor from subsequently claiming any damages due to said delay.

c. For purposes of scheduling, the project will be considered to be Substantially Complete when all work affecting health, safety and function is totally completed, and with less than one [1] percent of the base contract value remaining, and ready for complete Use and Occupancy as determined by the UMA Project Manager, the Operating Agencies (individually or collectively), and the Designer. Then the User Agencies (individually or collectively) will take control of their building area(s) and be responsible for operating costs and security. Final punch lists will be established and monetized at this time.

1) UMA Certificate of Use and Occupancy must be issued for partial Use and Occupancy, contingent upon conditions set forth by the Building Official having jurisdiction. The Massachusetts Department of Public Safety Occupancy Certificate must be issued by the effective Substantial Completion date.

2) The General Contractor shall have the number of calendar days stated in the contract, from the date of the UMA Notice to Proceed, to complete all the work before Substantial Completion is achieved. If the General Contractor fails to complete the work within the contract completion time frame so stated, the General Contractor shall be subject to the assessment of liquidated damages.

6. Additional Requirements:

a. A list in EXCEL format and the associated database file, as prescribed by UMA, of every submittal of shop drawings, product data, samples and other submittals required by the contract, General Conditions, Supplementary Conditions and/or technical specifications of the construction contract. This required list shall be set upon a template, based on the General Contractor’s Work Breakdown Structure (WBS) to facilitate reporting, showing the following: Specification Section, Sub-Section Number, Item Number, Description, Shop Drawing Number, Submittal Review and Approval, Actual Order Date, Procurement and Fabrication, Schedule Delivery Date, Date Received, Scheduled Installation Date and Actual Installation Date.

b. A list in EXCEL format and the associated database file, as prescribed by UMA, of every long lead item required by the contract, General Conditions, Supplementary Conditions and/or technical specifications of the construction contract. This required list shall be set upon a template, based on the General Contractor’s Work Breakdown Structure (WBS) to facilitate reporting, showing the following: Specification Section, Sub-Section Number, Item Number, Description, Shop Drawing Number, Submittal Review and Approval, Actual Order Date, Procurement and Fabrication, Schedule Delivery Date, Date Received, Scheduled Installation Date and Actual Installation Date.
c. A list in EXCEL format and the associated database file, as prescribed by UMA, of every pre-purchase item required by the contract, General Conditions, Supplementary Conditions and/or technical specifications of the construction contract. This required list shall be set upon a template, based on the General Contractor's Work Breakdown Structure (WBS) to facilitate reporting, showing the following: Specification Section, Sub-Section Number, Item Number, Description, Shop Drawing Number, Submittal Review and Approval, Actual Order Date, Procurement and Fabrication, Schedule Delivery Date, Date Received, Scheduled Installation Date and Actual Installation Date.

d. A list in EXCEL format and the associated database file, as prescribed by UMA, of every Owner-furnished item required by the contract, General Conditions, Supplementary Conditions and/or technical specifications of the construction contract. This required list shall be set upon a template, based on the General Contractor's Work Breakdown Structure (WBS) to facilitate reporting, showing the following: Specification Section, Sub-Section Number, Item Number, Description, Actual Order Date, Procurement and Fabrication, Schedule Delivery Date, Date Received, Scheduled Installation Date and Actual Installation Date. The list of Owner-furnished items shall correspond with the construction schedule so that the submissions relate to the time when the products and/or systems will actually be required on the site.

1) Deliveries of Owner-furnished equipment or materials shall be shown on the schedule with time windows to be provided by the Commonwealth.
2) Neither the Designer nor the Commonwealth will be responsible for acceptance of a list that calls for out-of-sequence delivery of Owner-furnished items.

1.6 REPORTS

A. Material Location Reports: At weekly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site. Indicate the following categories for stored materials:

1. Material stored prior to previous report and remaining in storage.
2. Material stored prior to previous report and since removed from storage and installed.
3. Material stored following previous report and remaining in storage.

B. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

1.7 SPECIAL REPORTS

A. General: Submit special reports directly to the UMA Project Manager within one day(s) of an occurrence. Distribute copies of report to parties affected by the occurrence.
B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, responses by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise UMA Project Manager in advance when these events are known or predictable.

PART 2 - EXECUTION (Not Used)

END OF SECTION 013200
SECTION 013300

SUBMITTAL REQUIREMENTS

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 REQUIREMENTS INCLUDED

A. Shop drawings, products data, samples, submittal logs (shop drawings and samples, RFI, NOI, PCO, CO and SK drawings), weather protection (if applicable) and schedule of values.

1.3 SHOP DRAWINGS, PRODUCTS DATA, AND SAMPLES

A. General:

1. Review and submit to the Designer and where outlined below to the UMA Project Manager, shop drawings, project data and samples required by Specifications Sections in hard and electronic copies.

2. No submissions made by FAX will be accepted.

3. The General Contractor, within the time frame stated in Section 013200 – CONSTRUCTION PROGRESS DOCUMENTATION after the Pre-Construction Meeting, shall prepare and submit for the Designer and the UMA Project Manager’s approval, a Schedule of Shop Drawings, Product Data and Samples required to be submitted for the Work. The schedule shall indicate, by Subcontractor, 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 the UMA Project Manager’s approval. The Schedule of Shop Drawings, Product Data and Samples shall correspond with the construction schedule so that the submissions relate to the time when the products and/or systems will be required on the site. Neither the Designer nor the UMA Project Manager will approve a schedule that calls for out-of-sequence submittals.

B. Shop Drawings:

1. Original drawings shall be prepared by General Contractor, Subcontractor, Supplier or Distributor, which illustrate some portion of the Work, showing fabrication, layout, setting, or erection of details.
   a. Shop drawings shall be prepared by a qualified detailer.
   b. Details shall be identified by reference to sheet and detail numbers indicated on Contract Drawings.
c. Maximum sheet size shall be 30-inch by 42-inch.
d. Submit with electronic media herein.

C. Product Data:

1. Manufacturers' catalog sheets, brochures, diagrams, schedules, performance charts, illustrations, and other standard descriptive data. Provide manufacturer's catalogue sheet, specification for each product and other pertinent data as required under the individual specification.
   a. Modify product data submittals to delete information which is not applicable to the project.
   b. Supplement standard information to provide additional information applicable to the project.
   c. Clearly mark each copy to identify pertinent materials, products, or models.
   d. Show dimensions and clearances required.
   e. Show performance characteristics and capacities.
   f. Show wiring diagrams and controls.

2. All such data shall be specific and identification of material or equipment submitted shall be clearly made in ink. Data of general nature will not be accepted.

3. Product Data shall be accompanied by transmittal notice. The General Contractor's stamp of approval shall appear on the printed information itself.

4. Submit the information listed above in both hard and electronic format.

D. Samples:

1. Physical samples shall illustrate materials, equipment, or workmanship, and shall establish standards by which work is judged. After review and approval, samples may be used in construction of project if not retained for comparison
   a. Office samples of sufficient size and quantity shall clearly illustrate:
      1) Functional characteristics of product or material, with integrally related parts and attachment devices.
      2) Full range of color samples (including standard and premium ranges).
      3) After review and approval by Designer and the UMA Project Manager, samples may be used in construction of project if not retained for comparison.
   b. Field Samples and Mock-ups
      1) Erect at project site at locations acceptable to the Designer and the UMA Project Manager.
      2) Construct each sample of mock-up complete, including work of all Subcontractors required in finished work. Samples shall be incorporated into a larger mock-up with varied products and Subcontractors if required.

2. Unless otherwise specified in the individual Section, the General Contractor shall submit two labeled specimens of each Sample.

3. Samples shall be of adequate size to permit proper evaluation of material. Where variations in color or in other characteristics are to be expected, samples shall show the maximum range of variation. Materials exceeding the variation of the approved samples will not be approved on the Work.

4. Samples which can be conveniently mailed shall be sent directly to the Designer, accompanied by transmittal notice. On the transmittal notice the General Contractor shall stamp his approval of Samples submitted.
5. All other Samples shall be delivered at the field office of the UMA Resident Engineer with Sample identification tag attached and properly filled in. Transmittal notice of Samples so delivered with the General Contractor's stamp of approval, shall be mailed concurrently to the Designer and the UMA Project Manager to confirm their receipt thereof.

6. If Sample is rejected by the Designer, a new Sample shall be resubmitted in the manner specified herein above. This procedure shall be repeated until the Sample is approved in writing by the Designer.

7. Samples will not be returned unless return is requested at the time of submission. The right is reserved to require submission of Samples whether or not specified in the Specifications, at no additional cost to the Commonwealth.

E. Mock-ups: Erect at project site at location acceptable to Designer and the UMA Project Manager, a mock-up complete, including work of all Subcontractors required in finished work.

1.4 GENERAL CONTRACTOR'S RESPONSIBILITIES:

A. Review shop drawings, Product Data and Samples prior to submission. Verify:

1. Field measurements.
2. Field construction criteria.
3. Catalog numbers and similar data.
4. Conformance with Specifications.
5. Integration with adjoining work.
6. Delivery schedule.
7. Is the product an equal to the product specified or a substitution? If either of these occur a comparison sheet must be submitted comparing the proposed product to the product specified.

B. All shop drawings prepared by Subcontractors shall be processed through the General Contractor. The General Contractor shall check all the shop drawings for conformity with the Contract Documents and particularly for field measurements and proper fit with adjoining work prior to submitting same to the Designer for approval. Certification shall appear on each shop drawing stating that the General Contractor has made his/her check. Format and content of the General Contractor's certification stamp shall be subject to approval by the UMA Project Manager and the Designer and shall include, but not be limited to:

1. The Term "By Others" shall not be used on shop drawings, the General Contractor shall state by whom related items are to be furnished and/or installed.
2. The Designer reserves the right to reject and return to the General Contractor, without examination, any shop drawings which have not been previously checked and certified as outlined above, which carry the term "by other" or such vague reference, which are difficult to read, which have arrived by FAX or which in any way are obviously not in conformity with Contract Requirements.
3. Shop drawings shall show materials, design, dimensions, connections and other details necessary to ensure that they accurately interpret the Contract Documents and shall also show adjoining work in such detail as required to provide proper connection with same.
4. The Designer will check and approve shop drawings only for conformance with the design concept and for compliance with information given in the Contract Documents. Approval of shop drawings by the Designer will not release the General Contractor from his
responsibility for furnishing same of proper dimensions, size quantity and quality to effectively perform the work and carry out the requirements and intent of Contract Documents.

5. Such approval will not relieve the General Contractor from responsibility for errors of any sort in the shop drawings, nor for the proper coordination of any submittal with all other work. If the shop drawings deviate, or are intended to deviate, from the Contract Documents, the General Contractor shall so advise the Designer in writing at the time the shop drawings are submitted, stating the difference in value between the Contract requirements and that denoted by said shop drawings.

6. The General Contractor shall assume full liability for delay attributed to insufficient time for delivery and/or installation of material or performance of the work when approval of pertinent shop drawing is withheld due to the failure of the General Contractor to submit, revise, or resubmit shop drawings in adequate time to allow the Designer and the UMA Project Manager a reasonable time, not to exceed twenty-one (21) calendar days, for normal checking and processing of each submission or resubmission.

C. Coordinate each submittal with requirements of Contract Documents.

D. The General Contractor's responsibility for errors and omissions in submittals is not relieved by the Designer’s review and approval of submittals, unless Designer gives tentative written acceptance of specific deviations identified as such by the General Contractor, subject to written concurrence by the UMA Project Manager.

E. Notify the Designer in writing at the time of submission, of deviations in submittals from requirements of Contract Documents or previous submissions.

F. Work that requires submittals shall not commence unless submitted with Designer’s stamp and initials or signature indicating review and approval, and UMA Project Manager’s initials or signature of concurrence indicate review and approval.

1. No work shall be started in the shop or on the job, or materials delivered to the site, until pertinent shop drawings have been approved by the Designer and the UMA Project Manager.

G. After aforesaid review and approval, distribute copies.

H. Maintain one (2) copies of each approved submittal at the project site. One for the General Contractor and one for the UMA resident.

1.5 SUBMISSION REQUIREMENTS:

A. General: All submittals shall be made to the Designer’s Office. The quantity and make-up of submittals shall be as established by the Designer; however, two (2) additional copies of all submittals shall be transmitted to the UMA Project Manager at the same time that such submittals are transmitted to the Designer. The Designer will log and distribute submittals for review by his consultant engineers. The General Contractor shall distribute all Civil, Structural, and MEP shop drawings directly to the Designer. All submittals shall be in both hard and electronic copies.
B. Make submittals promptly in accordance with approved schedules, and in such sequence as to cause no delay in the work.

C. Submit number of samples specified in each Section of the Specifications.

D. Submittals shall include:

1. Date and revision dates.
2. Project title and number.
3. The names of:
   a. Designer;
   b. General Contractor;
   c. Subcontractor;
   d. Supplier;
   e. Manufacturer;
   f. Separate detailer when pertinent.
4. Identification of product or material.
5. Location of work and relation to adjacent structure or materials.
6. Field dimensions clearly identified as such.
7. Specification Section number and specific paragraph under which item is specified.
8. Submission number.
9. Applicable standards, such as ASTM number.
10. A blank space, five-inch by four-inch, for the Designer’s stamp.
11. General Contractor’s remarks. Identify exceptions or deviations from Contract Documents and reasons for them.
   a. If shop drawings submitted by the General Contractor indicate a departure from the Contract and the Designer deems it to be minor adjustment in the interest of UMA (subject to concurrence by the General Contractor stating it does not involve a change in Contract Price or extension of time), the Designer may approve the submission, but the approval shall be subject to UMA review and acceptance of the Designer’s recommendation.
   b. The approval of UMA shall be inferred to contain in substance the following: The change is so ordered with the understanding that it does not involve any change in the Contract Price or Time, and that it is subject generally to all contract stipulations and covenants, and is without prejudice to any and all rights of UMA under the Contract.
12. General Contractor's stamp, initialed or signed certifying review and approval of submittal.
13. Any other items as called for by the Designer, the UMA Project Manager or required by the manufacturers.
14. The Designer reserves the right to ask for shop drawings for any or all items on the project, whether or not requested in individual specification sections, at no additional cost to the Commonwealth.

1.6 RESUBMISSION REQUIREMENTS:

A. Resubmission: Resubmission procedure shall follow the same procedures as the initial submittal with the following exceptions:
B. Shop Drawings:
   1. Transmittal shall contain the same information as the first transmittal except that the submission number shall change sequentially. The drawing number/description shall be identical as the first transmittal but the date shall be the revised date for that submission.
   2. No new material should be included on the same transmittal for the resubmission.
   3. Indicate on drawings any changes which may have been made other than those requested by the Designer.

C. Product Data and Samples:
   1. Submit any new data and samples as required from previous submittal.

1.7 THE UMA PROJECT MANAGER’S AND DESIGNER’S REVIEWS AND DISTRIBUTION OF SUBMISSIONS

A. The UMA Project Manager and/or his/her designees will review submittals concurrently with the Designer and his/her consultant engineers. The Designer and the UMA Project Manager shall communicate within the aforesaid review period time frame (21 calendar days). The time frame for the Designer’s review will not exceed fourteen (14) calendar days between her/his receipt of submittal and contacting the UMA Project Manager. After the Designer’s (and his/her consultant engineers) review, distribution shall be as stated herein.

1. If submittal is ‘reviewed - no exceptions taken’, or ‘reviewed, make corrections noted’, the UMA Project Manager shall compose a transmittal indicating the status. The UMA Project Manager will then return one (1) copy of the submittal together with the transmittal to the Designer, and shall retain one (1) copy for her/his records. The Designer shall copy and attach the UMA Project Manager’s transmittal to each submittal, stamp the submittals in concurrence with the status agreed to, and transmit back to the General Contractor, with one (1) copy sent directly to the UMA Resident Engineer. The General Contractor shall then distribute said submittals to appropriate Subcontractors, and one (1) copy to the UMA Resident Engineer.

2. If submittal is ‘reviewed - revise and resubmit’ or ‘rejected’, the UMA Project Manager shall compose a transmittal indicating the status. The UMA Project Manager will then return one (1) copy of the submittal together with the transmittal to the Designer, and shall retain one (1) copy for her/his records. The Designer shall copy and attach the UMA Project Manager’s transmittal to each submittal, stamp the submittals in concurrence with the status agreed to, and transmit back to the General Contractor for resubmission. A copy of the transmittal, indicating that a submittal was disapproved and returned to the General Contractor, will be forwarded from the Designer to the UMA Project Manager with an additional copy forwarded from the Designer to the UMA Resident Engineer, for their records.

3. If a submittal is ‘reviewed - no exceptions taken’ or reviewed, make corrections noted’ by the Designer, or approved as noted by the Designer, but the UMA Project Manager does not concur, a meeting between the Designer and the UMA Project Manager will immediately be established to resolve the impasse within the overall review period time frame (21 calendar days). The UMA Project Manager will have final authority as to the
disposition of the submission. The Designer’s position of approval (or disapproval) must be based on the contractual criteria of design intent, function, structure, and durability. The UMA Project Manager’s contrary position must also be based on these criteria.

4. The combined review period, for the Designer and the UMA Project Manager, will not exceed twenty-one (21) calendar 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 General Contractor and receipt of submissions by the Designer and UMA Project Manager. The General Contractor is required to anticipate review time, including time for possible rejection and resubmission, in establishing Schedule dates.

a. The aforementioned time provided the Designer for checking shop drawings is from the date of receipt of shop drawings by the Designer to the mailing date of shop drawings returned to the General Contractor by the Designer.

5. The Designer will process the submission and indicate the appropriate action on the submission and the transmittal. Incomplete or erroneous transmittals will be returned without action.

6. The Designer will fill out transmittal in the following sequence:

   a. Date received from General Contractor.
   b. Date forwarded to UMA Project Manager.
   c. Date received from UMA Project Manager.
   d. Date returned to General Contractor.
   e. Action taken on submission.
   f. Distribution, including number of copies distributed and type of material distributed (i.e., print, brochure or sample, etc.).
   g. Designer’s remarks (note major deviations from the Contract Documents).

B. Designer’s Review Procedure:

1. Stamped REVIEWED, “NO EXCEPTIONS TAKEN”:
   a. No corrections or resubmissions required, fabrication may proceed.

2. Stamped REVIEWED, “MAKE CORRECTIONS NOTED”:
   a. If General Contractor complies with noted corrections, fabrication may proceed. Submit corrected print for final review.
   b. If, for any reason, the General Contractor cannot comply with the noted corrections, fabrication shall not proceed and General Contractor shall resubmit, following procedures outlined in this Section.

3. Stamped REVIEWED, “REVISE AND RESUBMIT” OR “REJECTED”:
   a. General Contractor shall revise and resubmit for review. Fabrication shall not proceed.

C. Manufacturer’s Instruction

1. When required in individual Specification Section, submit manufacturer’s printed instructions for delivery, storage, assembly, installation, start-up, adjusting and finishing, in quantities specified for product data, with two (2) additional copies submitted to the UMA Project Manager and one (1) copy to the UMA Resident Engineer.
D. Certificates of Compliance: Submit certificates of compliance with the associated Shop Drawings, Product Data, and Samples required for the product in quantities specified for certificates of compliance, with two (2) additional copies submitted to the UMA Project Manager and one (1) copy to the UMA Resident Engineer.

E. Field Samples: Provide field samples of finishes at the project as required by individual Specification Section. Install sample complete and finished.

F. Patterns and Colors: Submit accurate color charts and pattern charts to the Designer for review and selection whenever a choice of color or pattern is available in a specified product, unless the exact color and pattern of a product are indicated in the Contract Documents. Color and Pattern charts shall represent the manufacturer’s complete standard offerings, except where Specifications limit the offerings by defining a particular series or product type which is normally limited in color and pattern availability. Color and Pattern charts shall be submitted in quantities specified with two (2) additional copies submitted to the UMA Project Manager and one (1) copy to the UMA Resident Engineer.

1.8 SCHEDULE OF VALUES

A. The General Contractor shall submit Schedule of Values to the UMA Project Manager within twenty (20) calendar days after the issuance of a Purchase Order for the Contract, but no later than the Pre-Construction conference or thirty (30) days before the date scheduled for submittal of initial Application and Certificate for Payment whichever occurs first. The Schedule of Values of the various portions of the Work shall be prepared in sufficient detail to reflect various major components of each Subcontractor, including quantities when requested, aggregating the total contract sum, and divided so as to facilitate payments for work under each Section as stated in Section 012900 – PAYMENT PROCEDURES. The schedule shall be prepared in such form as specified or as the Designer or the UMA Project Manager may approve, and it shall include data to substantiate its accuracy. Each item in the Schedule of Values shall include its proper share of overhead and profit. This schedule, including breakdown and values, requires the approval of the Designer and the UMA Project Manager and shall be used only as a basis for the General Contractor's request for payment.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013300
SECTION 013543
ENVIRONMENTAL PROTECTION PROCEDURES

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 – GENERAL REQUIREMENTS that are hereby made a part of this Section of the Specifications.

1.2 SUMMARY

A. Furnishing all labor, materials, and equipment and perform all work required for the prevention of environmental pollution in conformance with applicable laws and regulations, during and as the result of construction operation under this Contract. For the purpose of this Section, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for aesthetic and/or recreational purposes.

B. The control of environmental pollution requires consideration of air, water, and land, and involves management of runoff, dust, noise, and solid waste, as well as other pollutants. Work shall include installing, maintaining, and removing sedimentation and erosion control components within the Limits of Work.

C. This Section does not address erosion and sedimentation control requirements.

1.3 SECTION INCLUDES

A. Applicable Regulations
B. Notifications
C. Protection of Groundwater
D. Protection of Streams and Wetlands
E. Protection of Land Resources
F. Protection of Air Quality
G. Maintenance of Pollution Control Facilities During Construction
H. Noise Control
I. Diesel Equipment Emission Controls
J. Spill and Discharge Control

1.4 RELATED SECTIONS

A. Section 015000 - TEMPORARY FACILITIES AND CONTROLS:

1.5 APPLICABLE REGULATIONS

A. The General Contractor shall comply with all applicable Federal, State and local laws and regulations concerning environmental pollution control and abatement.

B. Fines and related costs resulting from failure to provide adequate protection against any environmentally objectionable acts and corrective action to be taken are the obligations of the General Contractor.

1.6 NOTIFICATIONS

A. UMA may notify the General Contractor in writing of any non-compliance with the foregoing provisions or of any environmentally objectionable acts and corrective action to be taken. State or local agencies responsible for verification of certain aspects of the environmental protection requirements may notify the General Contractor in writing, through UMA, of any non-compliance with State or local requirements. After receipt of such notice from UMA or from the regulatory agency through UMA, the General Contractor shall immediately take corrective action. Such notice, when delivered to the General Contractor or his/her authorized representative at the site of the Work, shall be deemed sufficient for the purpose. If the General Contractor fails or refuses to comply promptly, UMA may issue an order stopping all or part of the Work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess costs or damages by the General Contractor unless it is later determined that the General Contractor was in compliance.

PART 2 - PRODUCTS

2.1 WATER

A. Water used for dust control and equipment washes shall be clean and free of salt, oil, and other injurious materials. The General Contractor shall provide all necessary water.

2.2 ONSITE SPILL KIT

A. The General Contractor shall provide the following minimum equipment to be kept onsite at all times during site work activities for any unexpected spills or discharges:

1. Sand, clean fill and absorbent pillows,

2. Four drums (55 gallon, U.S. DOT 17-E or 17-H),

3. Shovels, and

4. Steam cleaner for decontamination of tools and equipment.
PART 3 - EXECUTION

3.1 PROTECTION OF GROUNDWATER

A. Care shall be taken to prevent, or reduce to a minimum, any discharges to the ground of liquids that may infiltrate to the underlying groundwater or enter on-site waterways. Water that has been used for washing or processing, or that contains oils or sediments that will reduce the quality of the groundwater or waterway shall not be discharged from the Site. Such waters shall be collected and disposed of by the General Contractor in accordance with all applicable Federal, State and local regulations.

3.2 PROTECTION OF STREAMS AND WETLANDS

A. Care shall be taken to prevent, or reduce to a minimum, any damage to any wetland from pollution by debris, sediment, or other material. Manipulation of equipment and/or materials in delineated wetland areas is prohibited. Water that has been used for washing or processing, or that contains oils or sediments that will reduce the quality of the water in downstream waters of the State, shall not be discharged from the Site. Such waters shall be collected and disposed of by the General Contractor in accordance with all applicable Federal, State and local regulations.

3.3 PROTECTION OF LAND RESOURCES

A. Land resources within the project boundaries and outside the limits of permanent work shall be restored to a condition, after completion of remediation activities that will appear to be natural and not detract from the appearance of the project. Confine all construction activities to Limits of Work areas shown on the Drawing.

B. Outside of the Limits of Work as shown on the Drawing, do not deface, injure, or destroy trees or shrubs, nor remove or cut them without prior approval. Snow fence or other approved equal shall be erected at the “fall line” of the tree canopy, and no vehicles or storage will be permitted within, to prevent damage to trees.

C. The locations of storage and other facilities, required in the performance of the Work, shall not be within wetlands or resource areas.

3.4 PROTECTION OF AIR QUALITY

A. Burning – The use of burning at the project site for the disposal of refuse and debris will not be permitted.

B. Dust Control – Maintain all demolition excavations, stockpiles, waste areas, and all other work areas within or without the project boundaries free from dust which could cause the standards for air pollution to be exceeded (MADEP 310 CMR 7.09.-7.10) and which would cause a hazard or nuisance to others.

C. The General Contractor shall provide adequate means for the purpose of preventing dust and odor caused by construction operations throughout the period of the construction contract. If UMA or the Designer indicates that the level of dust or odors is unacceptable, the General Contractor shall employ measures necessary to reduce dust or odors to an acceptable level.
D. The General Contractor shall implement engineering controls (e.g. watering, misting) to control dust whenever required by the Designer or UMA.

3.5 MAINTENANCE OF POLLUTION CONTROL FACILITIES DURING CONSTRUCTION

A. During the life of this Contract, maintain all facilities constructed for pollution, erosion, and sedimentation control as long as the operations creating the particular pollutant area being carried out.

3.6 NOISE CONTROL

A. The General Contractor shall develop and maintain a noise-abatement program and enforce strict discipline over all personnel to keep noise to a minimum. Local noise ordinances shall govern.

B. The General Contractor shall execute construction work by methods and by use of equipment which will reduce excess noise.

C. Equipment shall be equipped with silencers or mufflers designed to operate with the least possible noise in compliance with Federal and State regulations.

D. The General Contractor shall manage vehicular traffic and scheduling to reduce noise.

3.7 DIESEL EQUIPMENT EMISSION CONTROLS

A. All motor vehicles and construction equipment shall comply with all pertinent local, state, and federal regulations covering exhaust emission controls and safety.

B. All General Contractor and Subcontractor diesel-powered non-road construction equipment with engine horsepower (HP) ratings of 50HP and above, which are used on the Project Site for a period in excess of 30 calendar days over the course of the construction period on the Project Site, shall be retrofitted with Emission Control Devices in order to reduce diesel emissions.

C. The reduction of emissions of volatile organic compounds (VOCs); carbon monoxide (CO) and particulate matter (PM) from diesel-powered equipment shall be accomplished by installing Retrofit Emission Control Devices.

D. Acceptable Retrofit Emission Control Devices for the Project shall consist of oxidation catalysts or other comparable technologies that are (1) included on the US Environmental Protection Agency (EPA) Verified Retrofit Technology List and/or the California Air Resources Board Currently Verified Technologies List; and (2) are verified by EPA or CARB, to provide a minimum emissions reduction of 50 percent for VOCs, 40 percent for CO and 20 percent for PM. Attainment of the required reduction in PM emissions can also be accomplished by using less polluting Clean Fuels. Verified technologies can be identified on the following websites:

   EPA: http://www.epa.gov/otaq/refit/retroverifiedlist.htm
   CARB: http://www.arb.ca.gov/diesel/verdev/verifiedtechnologies/cvt.htm

E. The emission control equipment can be procured through the Statewide Contract #VEH71 that has fixed costs associated with retrofitting of diesel emission control devices. The following are the vendors listed on the State-wide Contract:
1) Cummins Northeast, Inc.
Contact: Scot Lengel
Telephone Number: 781-329-1750
E-Mail Address: Scot.L.Lengel@cummins.com

2) Patriot International Trucks, LLC/Anderson International Trucks of Boston
Contact: John Anderson, Jr.
Telephone Number: 800-277-4777
E-Mail Address: john@andersonmotors.com

3) Clean Diesel Technologies, Inc.
Contact: Glen Reid
Telephone Number: 203-327-7050
E-Mail Address: greid@cdti.com

F. Construction shall not proceed until the General Contractor has submitted a certified list of the non-road diesel-powered construction equipment subject to this specification which either are or will be retrofitted with emission control devices. The list shall include (1) the equipment number, type, make, and General Contractor/Subcontractor name; and the emission control device make, model, and EPA verification number. General Contractors shall also submit a receipt or other documentation from a manufacturer or installer that verifies that appropriate equipment has been installed. The General Contractor shall also identify any vehicles that will use Clean Fuels. Equipment that has been retrofitted with an emission control device shall be stenciled or otherwise clearly marked as "Low Emission Equipment".

G. The General Contractor shall submit monthly reports, updating the same information stated in Paragraph F above, including the quantity of Clean Fuel utilized. The addition or deletion of non-road diesel equipment shall be indicated in the report.

H. The General Contractor shall use methods to control nuisance odors associated with diesel emissions from construction equipment including but not limited to the following: (1) turning off diesel combustion engines on construction equipment not in active use and on trucks that are idling for five minutes or more; and (2) locating diesel equipment away from the general public and sensitive receptors.

I. All costs associated with implementation of the diesel equipment emissions control shall be borne by the respective General Contractor or Subcontractor and included in their cost for performing the work of the Contract.

3.8 SPILL AND DISCHARGE CONTROL

A. The General Contractor shall provide equipment and personnel to perform emergency measures required to contain any spillage and to remove spilled materials and soils or liquids that become contaminated due to spillage. The collected spill material shall be properly disposed of at the General Contractor's expense.
B. Costs to provide the above spill and discharge control materials shall be included in the contract base bid price.

END OF SECTION 013543
PART 1 - GENERAL

1.1 GENERAL PROVISIONS
A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 REQUIREMENTS INCLUDED
A. General Contractor’s Quality Assurance.
B. General Contractor’s Testing Responsibilities.
C. UMA’s independent agencies.
D. Duties of the General Contractor’s testing agencies.
E. Welding.
F. Field engineering.
G. Examination of substrate.
H. General Contractor’s Quality Assurance and Quality Control Plan.

1.3 RELATED SECTIONS
A. Section 013100 – PROJECT MANAGEMENT AND COORDINATION:
   1. General project management and coordination.

1.4 GENERAL CONTRACTOR’S QUALITY ASSURANCE
A. Qualifications for Service Agencies: Engage inspection and testing services agencies, including independent testing laboratories, which are pre-qualified as complying with "Recommended Requirements for Independent Laboratory Qualification" by the American Council of Independent Laboratories, and which specialize in the types of inspections and tests to be performed.
QUALITY REQUIREMENTS
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B. Each independent inspection and testing agency engaged on the project shall be authorized by authorities having jurisdiction to operate in the Commonwealth of Massachusetts.

1.5 GENERAL CONTRACTOR’S TESTING RESPONSIBILITIES

A. The General Contractor shall provide inspections, tests and quality control services specified in individual specification Sections and required by governing authorities, except where they are specifically indicated to be solely the responsibility of a Subcontractor in the respective specification section or solely the responsibility of UMA.

B. Engage and pay for the services of an independent agency acceptable to the UMA Project Manager to perform the specified inspections, testing, and quality control. Submit qualifications to the UMA Project Manager. General Contractor’s testing agency/laboratory shall be licensed by the Commonwealth of Massachusetts Department of Public Safety.

C. Re-testing: The General Contractor is responsible for re-testing where results of required inspections, tests or similar services prove unsatisfactory and do not indicate compliance with Contract Documents requirements, regardless of whether the original test or service was the General Contractor’s responsibility.

D. Substitutions, Suspicious Issues and Designer Initiated Testing: The General Contractor is responsible for inspections, tests and similar services for substitutions, suspicious issues identified by the General Contractor or UMA Project Manager, and testing initiated by the Designer.

E. Associated Services: The General Contractor shall cooperate with agencies performing required inspections, tests and similar services and provide reasonable auxiliary services as required. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include but are not limited to:

1. Provide access to the work and furnish incidental labor and facilities necessary to facilitate inspections and tests.
2. Take adequate quantities or representative samples of materials that require testing or assist the agency in taking samples.
3. Provide facilities for storage and curing of test samples and delivery of samples to testing laboratories.
4. Provide the agency with a preliminary design mix proposed for use for material mixes that require control by the testing agency.
5. Provide security and protection of samples and test equipment at the project site.

F. The General Contractor shall prepare and submit to the UMA Project Manager for approval a Quality Assurance and Quality Control Plan within 30 days from Notice to Proceed. A Quality Assurance and Quality Control (QA/QC) Plan shall promote completion of all work in accordance with the Contract Documents including Contract, Construction Drawings, Specifications, Project Procedures, Approved Submittals and Shop Drawings, Approved Changes, Applicable Codes and Regulations, Referenced Industry Standards, and similar items. The primary purpose of this quality plan is to ensure that all in place work by the General Contractor and all Subcontractors is performed correctly the first time and is turned over and represented as complete and defect free in accordance with the Contract Documents.
G. If required by the Contract, the General Contractor shall assign a dedicated Quality Assurance and Quality Control Manager for the duration of the project. If the Contract does not require a dedicated Quality Assurance and Quality Control Manager, the General Contractor shall prepare and submit to the UMA Project Manager their QA/QC Plan as discussed in Par. E above. In addition, if this Contract does not require a dedicated QA/AC Manager, the duties of the QA/AC Manager as delineated in Par. 1.5F6 shall be carried out by another qualified member of the General Contractor’s onsite staff.

1. The purpose of a QA/QC Manager shall be to prepare and submit the Quality Assurance and Quality Control Plan for approval and to be responsible for and to manage adherence to the plan throughout the construction process. The QA/QC Manager shall be designated for the project from the initial notice to proceed through system acceptances by both the designer and UMA Project Manager. The QA/QC Manager shall at all times instill an expectation that all work will be completed correctly and in an expeditious manner and shall be responsible for enforcement of the General Contractor’s Staff and all Subcontractors to this plan.

2. Have extensive experience in building construction, project controls, and previous QA/QC training and practical knowledge.

3. Have excellent communication and writing skills, be highly organized and be able to work with both management and Subcontractors.

4. Have a working knowledge of project scheduling.

5. The General Contractor shall submit substantiating documentation attesting to the proposed QA/QC Manager’s capabilities to the UMA Project Manager and the Designer for approval.

6. Duties of the QA/QC Manager:
   a. Prepare and submit QA/QC Plan for approval.
   b. Conduct and submit minutes for all requisite Quality Meetings.
   c. Coordinate and report on all daily quality activities.
   d. Verify accurate documentation by Subcontractors and Vendors.
   e. Work with UMA Commissioning Agent.
   f. Oversee final project records pertaining to quality.
   g. Report, photograph and distribute evidence of deficient and/or defective construction conditions or materials that cannot be corrected within three work days of observation. When such conditions or materials are remedied report, photograph and distribute evidence of remedial work prior to concealing. Photographs shall be dated and defects and/or deficiencies shall be clearly labeled on the photographs.

1.6 UMA’S INDEPENDENT TESTING AGENCIES

A. It is the General Contractor’s responsibility to provide and pay for its own inspection and testing to assure quality control. General Contractor shall be responsible for coordinating its work with requirements of UMA’s testing agencies, and shall provide reasonable services in support of facilitating work of UMA’s testing agencies as required.
1.7 DUTIES OF THE GENERAL CONTRACTOR’S TESTING AGENCIES

A. The General Contractor’s independent testing agency engaged to perform inspections, sampling and testing of materials and construction shall cooperate with the Designer and General Contractor in performing its duties, and shall provide qualified personnel to perform required inspections and tests.

B. The testing agency shall notify the Designer and General Contractor promptly of irregularities or deficiencies observed in the work during performance of its services.

C. The testing agency shall not perform any duties of the General Contractor.

D. The General Contractor is responsible for scheduling times for inspections, tests, taking samples and similar activities.

1.8 GENERAL CONTRACTOR’S QUALITY CONTROL REQUIREMENTS, GENERAL

A. Maintain quality control over suppliers, manufacturers, products, services, site conditions, and workmanship to produce work of the quality as specified.

B. Comply fully with manufacturer's instructions, including each step in sequence.

C. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

D. Perform work by persons qualified to produce workmanship of specified quality.

E. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortions, or disfigurement. Anchorage devices shall be labeled to allow for visual inspection and verification of type of anchorage device.

1.9 WELDING

A. Certified Welders:

1. Structural welds shall be made only by operators who have been qualified by tests, as prescribed in the "Standard Qualification Procedure" of the American Welders Society, to perform the type of work required. Operators shall be certified welders; certification must be shown to the Resident Engineer and must be current. Provide a copy of certification(s) to the UMA Resident Engineer and UMA Project Manager.

2. Pipe welds shall be made by operators who have been qualified by the National Certified Pipe Welding Bureau and each operator's qualification record shall be submitted to the Designer before any work is performed. Welders' certification card must be shown to the Resident Engineer. Provide a copy of certification(s) to the UMA Resident Engineer and UMA Project Manager.

3. Shop welding shall be in accordance with the "Code for Welding in Building Construction."
4. Welders shall provide their own portable generating equipment for electric welding. Use of the Commonwealth's electrical system for welding will not be permitted.

B. Welding and Cutting:

1. Where electric or gas welding or cutting work is done above or within ten (10) feet of combustible material or above a space that may be occupied by persons, use interposed shields of incombustible material to protect against fire damage or injury due to sparks and hot metal.
2. Place tanks supplying gases for gas welding or cutting at no greater distance from the work than is necessary for safety, securely fastened and maintained in an upright position in accordance with applicable codes. Store such tanks in a locked enclosure remote from any combustible material and free from exposure to the rays of the sun or high temperatures.
3. Maintain suitable fire extinguishing equipment near all welding and cutting operations. When operations cease for the noon hour or at the end of the day, thoroughly wet down the surroundings adjacent to welding and cutting operations.
4. Station a workman equipped with suitable fire extinguishing equipment near welding and cutting operations to see that sparks do not lodge in floor cracks or pass through floor or wall openings or lodge in any combustible material. Keep the workman at the source of work which offers special hazards for thirty (30) minutes after the job is completed to make sure that smoldering fires have not been started.
5. Place a qualified electrician in charge of installing and maintaining electric and arc welding equipment. Remove damaged electric, arc or gas welding equipment from the site.

1.10 MANUFACTURER'S REPRESENTATIVES

A. If required by specific Specification Sections, manufacturer's representative shall be present at the job site for supervision of work during installation of materials. Such representative shall be present during all aspects of construction to ensure proper installation of all applicable items. Refer to other sections of these specifications for additional requirements.

1.11 EXAMINATION OF SUBSTRATE

A. Installers of materials, products or equipment shall:

1. Examine base surfaces upon which materials, products or equipment are to be installed.
2. Examine conditions upon which materials, products or equipment are to be installed.
3. Where there is any question as to the dryness of a surface, test with a modern moisture-indicating machine.
4. Notify the General Contractor, in writing, with a copy to the Designer, if conditions are detrimental to proper and timely construction and completion of the work.

B. Do not proceed with work until unsatisfactory substrate, or not acceptable conditions have been corrected. Commencement of installation constitutes acceptance of substrate or base surfaces, and the cost of any corrective work due shall be borne by the installer applying his/her materials, products or equipment thereon.
1.12 GENERAL CONTRACTOR’S QUALITY ASSURANCE AND QUALITY CONTROL PLAN

A. The General Contractor’s Quality Assurance and Quality Control Plan shall instill an expectation that all work will be completed correctly and in an expeditious manner. In all instances the General Contractor shall be responsible for the adherence to and enforcement of the General Contractor’s Staff and all Subcontractors to this plan.

1. Submit the General Contractor’s Quality Assurance and Quality Control Plan to the UMA Project Manager within 30 days from the Notice to Proceed. Submit in format acceptable to UMA’s Project Manager. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out General Contractor’s quality-assurance and quality-control responsibilities. Coordinate with General Contractor's construction schedule.

B. The Plan shall include specific procedures for conducting formalized inspections of predetermined selected work items at the time the General Contractor first starts new work. These inspections are performed by a designated QA/QC Inspection Team composed of authorized representatives from UMA, the General Contractor, A/E, Subcontractor(s) (whose work is being inspected) and others as may be required.

C. The Quality Assurance and Quality Control Plan shall be created as a General Contractor Project Specific Quality Plan addressing at a minimum the following components:

1. Quality meetings.
   a. Pre-construction conference.
   b. Pre-installation review meetings.
   c. Coordination meetings.
2. Regular Daily Inspections.
4. First Delivery of Material / Equipment Inspections.
5. First Equipment in Place Inspections.
6. Mock-up Inspections.
7. Bench Mark Inspections.
8. Follow-Up Bench Mark Inspections.
9. Below Grade / In-Wall and Above Ceiling Inspections.

D. Quality Meetings:

1. Pre-construction Conference:
   a. A conference held to discuss all aspects of the construction project such as the schedule, payment procedures, change order procedures and much more. This meeting is held immediately after contract award.
   b. The UMA Project Manager, Designer, Design Consultants, General Contractor and Subcontractors will attend these meetings.
2. Pre-Installation Review Meetings:
   a. A review meeting shall be held for certain kinds of work requiring special coordination efforts between Subcontractors, a better understanding of how the work is to be performed by one or more Subcontractors, sequencing of work between the
Subcontractors, or a review of special requirements pertaining to the work to be performed. This type of meeting is conducted just prior to starting the actual work. The meeting is scheduled and run by the General Contractor on an as needed basis.

b. The UMA Project Manager, Designer, General Contractor and all applicable Subcontractors will attend these meetings.

c. The General Contractor’s Staff and Subcontractor’s actual supervisory people who will be performing the work in the field are to attend these meetings.

d. Safety precautions relating to the work to be performed are also to be discussed as part of this meeting.

3. Coordination Meetings:

a. The General Contractor shall conduct project Coordination Meetings at regular intervals. Project Coordination Meetings are in addition to specific meetings held for other purposes, such as regular progress meetings and special pre-installation meetings. An example would be regularly scheduled MEP coordination meetings to monitor the progress of the MEP coordination process.

b. General Contractor shall request representation by every party currently involved in coordination or planning for the construction activities involved.

c. General Contractor shall record meeting results and distribute copies to everyone in attendance and others affected by decisions or actions resulting from each meeting. The UMA Project Manager and the Designer are to be on the Distribution List.

E. Regular Daily Inspections:

1. The General Contractor will monitor the quality of the in-place construction work daily, to ensure that it complies with the requirements of the Contract Documents, Pre-Construction Meetings, Pre-Installation Meetings and Coordination Meetings.

2. The General Contractor shall log, record and distribute daily record of quality monitoring as a component of daily reporting and provide notification on a regular basis during construction of currently observed items requiring corrective action.

3. The QA/QC Inspection Team will inspect work periodically based on observations noted in General Contractor’s reporting to verify completion and compliance.

F. Building Exterior Envelope Review:

1. The design review will be performed by an independent consulting firm experienced with this type of work.

2. The scope of services for the building exterior envelope review shall include a documented review of the exterior building envelope design details and specifications, review of proposed product and material submittals prior to material acquisition, and on-site quality control inspections as deemed appropriate by the General Contractor and UMA Project Manager.

3. Physical inspections shall include on-site meetings with project personnel, including the UMA Project Manager, Designer, General Contractor and Subcontractors at various stages of installation.

4. The scope of the building envelope inspection, or review, should include, but is not limited to exterior building materials, flashings, bracing, anchors, weep holes and other water removal systems from with-in cavity walls, roofing systems, caulking and other sealants, parapet wall cap details, mullion details at openings, waterproofing below grade, and other abutting materials or systems.
5. The General Contractor will coordinate with and support the exterior envelope review inspections to include coordination of first delivery inspections, mock-ups and benchmarks called for within envelope system or specific materials specifications to which the design review of this section may apply.

G. First Delivery of Material/Equipment Inspection:
   1. The General Contractor shall manage and keep current an anticipated delivery schedule for all materials and equipment to be delivered to the site and provide regular updates or upon request to the UMA Project Manager and QA/QC Inspection Team.
   2. The General Contractor shall log, record and distribute any account on the first delivery of each type of material or equipment as a component of daily reporting and provide notification on a regular basis during construction of currently observed items requiring corrective action.
   3. First deliveries will be verified against the requirements of the design documents and the approved submittals. Nonconforming materials and/or equipment will not be allowed to be set into place and will be removed from the site.
   4. This inspection establishes the basis for judging all future deliveries of like material/equipment.

H. First Equipment In Place Inspection:
   1. The General Contractor shall manage and keep current an anticipated schedule for all materials and equipment to be inspected in place and provide regular updates or upon request to the UMA Project Manager and QA/QC Inspection Team.
   2. General Contractor and QA/QC Inspection Team will inspect and document the first setting of equipment to verify it is in conformance with the requirements of the Contract Documents.
   3. The installation and assembly will be verified against the requirements of the design documents and the approved shop drawings.
   4. The General Contractor shall log, record and distribute any account for each type of first in place equipment inspection as a component of daily reporting and provide notification on a regular basis during construction of currently observed items requiring corrective action or pending inspection.
   5. Upon acceptance of the equipment in place, the General Contractor can proceed with permanently anchoring it into place by the means prescribed in the Contract Documents.
   6. This inspection establishes the basis for judging all future setting of like equipment.

I. Mock-Up Inspections:
   1. The General Contractor will note all Mock-Ups required by the Contract Documents and include the activity in their construction schedule and submit for review and approval of the UMA Project Manager, the Designer and the QA/QC Inspection Team.
   2. The General Contractor shall log, record and distribute any account of Mock-Up(s) as a component of daily reporting and provide notification on a regular basis during construction of currently observed items in process, requiring corrective action, or follow up, and inspection.
   3. General Contractor will benchmark each work type within the Mock-Up for conformance with the requirements and review with the QA/QC Inspection Team.
4. The QA/QC Inspection Team shall review, comment that the work appears in conformance to the requirements. Comments are documented and distributed by the General Contractor. Non-conforming work will be corrected at no additional cost to UMA.

5. The approved Mock-Up establishes a basis for judgment for all later like construction.

6. The Mock-Up process and inspection(s) does not take away from the responsibility of the General Contractor and installing contractors to provide a finished and fully functioning product and to maintain the construction schedule.

J. Benchmark Inspections (In Sequence Work):

1. The General Contractor in consultation with the UMA Project Manager, Designer and QA/QC Inspection Team will establish which work will be scheduled for benchmarking during the normal course of construction.

2. The General Contractor shall log, record and distribute any account of Benchmark(s) as a component of daily reporting and provide notification on a regular basis during construction of currently observed items in process, requiring corrective action, or follow up, and that require inspection.

3. General Contractor shall note that the work to be inspected has been started and if found to be acceptable shall call for a benchmark inspection to be conducted by the QA/QC Inspection Team.

4. The QA/QC Inspection Team shall review, comment that the work appears in conformance to the requirements. Comments are documented and distributed by the General Contractor. Non-conforming work will be corrected at no additional cost to UMA.

5. This inspection establishes the basis for judging all future work of a like type, none of which shall commence until the benchmark is approved.

6. The Benchmark process and inspection(s) does not take away from the responsibility of the General Contractor and installing contractors to provide a finished and fully functioning product and to maintain the construction schedule.

K. Follow-Up Benchmark Inspections:

1. The General Contractor shall ensure that all subsequent work being built of the same type of work that was previously benchmarked will be built in conformance to the Benchmarked work without deviation.

2. The General Contractor and QA/QC Inspection Team will randomly inspect subsequent work being built of the same type of work that was previously benchmarked to ensure the work is being built in conformance with the benchmarked work.

3. The General Contractor shall log, record and distribute any account of follow-up benchmark(s) as a component of daily reporting and provide notification on a regular basis during construction of currently observed items in process, requiring corrective action, or follow up, and that require inspection.

L. Below Grade / In Wall and Above Ceiling Inspections:

1. It is the intent of this section to mandate inspection of as much of the work that is to be enclosed before it has been covered over to avoid having to reopen closed spaces to complete or correct work therein.

2. The General Contractor shall verify that all work is complete within the concealed space and is ready to be inspected before it is enclosed.
3. The General Contractor and all Subcontractors who have work installed within the work area shall sign a closure form stating that their work has been completed and has been inspected by all applicable code officials. General Contractor will be responsible for all costs to have the space reopened later to complete or correct any work within the space, and to have the space closed again, including all costs incurred for any schedule impacts due to this work.

4. Photographs of areas to be permanently enclosed will be taken by General Contractor and retained as a part of the project record.

5. The General Contractor shall log, record and distribute account of below grade, in wall or above ceiling inspections as a component of daily reporting and provide notification on a regular basis during construction of currently observed items in process, requiring corrective action, or follow up.

6. No closure or covering of work shall proceed until all requirements are met and approval given by the QA/QC Inspection Team where such inspections are to be conducted.

M. Utility Activation and Start-Up Inspection Procedures for Equipment/Systems Prior to Validation.

1. Activation Inspection:
   a. The Activation Inspection is required when the General Contractor has verified that system work meets the contract document requirements and has completed the static installation of equipment/systems, and is ready to place it into dynamic operation for the purposes of shakedown, debugging, check-out and similar activities.
   b. The General Contractor shall log, record and distribute any account of pending activations as a component of daily reporting and provide separate individual notification at a minimum of 48 hour notice prior to the scheduled time for placing specific equipment into dynamic operation.
   c. The General Contractor will notify the QA/QC Inspection Team who will inspect the work, the surroundings and provide comment that the installation is safe and appears meets the requirements for operation.
   d. Any deficiencies noted shall be corrected immediately.
   e. The General Contractor will then place the equipment/systems into operation for his use, shakedown, debugging, check-out, and similar activities.

2. Start-Up Inspection:
   a. The General Contractor will coordinate with UMA’s Commissioning Agent to ensure that start-up procedures, O&M’s, prefuctional checklists and testing, equipment manufacturer’s representation are completed and/or in place according to the approved Commissioning Plan.
   b. The General Contractor shall log, record and distribute any account of pending startups as a component of daily reporting and provide separate individual notification at a minimum of 48 hour notice prior to the scheduled time for placing specific equipment into final operation.
   c. The General Contractor shall coordinate with the QA/QC Inspection Team and UMA CA to ensure that the installation operates as required.
   d. All non-conforming work will be corrected immediately.
PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014000
PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract including, but not limited to, the following:

1. UMA.
2. The Designer (the Architect-of-Record or Engineer-of-Record as applicable).
3. The UMA Project Manager.
4. The UMA Resident Engineer.
5. The General Contractor.

B. "Reviewed": When used to convey Designer's action on General Contractor's submittals, applications, and requests, "reviewed" is limited to Designer's duties and responsibilities as stated in the Conditions of the Contract.

C. "Directed": A command or instruction by Designer. Other terms including "requested," "authorized," "selected," "approved," "required," and "permitted" have the same meaning as "directed."

D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
H. "Provide": Furnish and install, complete and ready for the intended use.

I. "Project Site": Space available for performing construction activities subject to UMA approval. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of the Contract Documents, unless otherwise indicated.

C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source, and have available on site for reference.

1.4 ABBREVIATIONS AND ACRONYMS

A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale Research's "Encyclopedia of Associations" or in Columbia Books' "National Trade & Professional Associations of the U.S."

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Name</th>
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<tbody>
<tr>
<td>AA</td>
<td>Aluminum Association, Inc. (The)</td>
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<tr>
<td>AAMA</td>
<td>American Architectural Manufacturers Association</td>
</tr>
<tr>
<td>AASHTO</td>
<td>American Association of State Highway and Transportation Officials</td>
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<tr>
<td>ABAA</td>
<td>Air Barrier Association of America</td>
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<tr>
<td>ACI</td>
<td>ACI International (American Concrete Institute)</td>
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<tr>
<td>AGC</td>
<td>Associated General Contractors of America (The)</td>
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<tr>
<td>AIA</td>
<td>American Institute of Architects (The)</td>
</tr>
<tr>
<td>AISC</td>
<td>American Institute of Steel Construction</td>
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<tr>
<td>AISI</td>
<td>American Iron and Steel Institute</td>
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<tr>
<td>ALSC</td>
<td>American Lumber Standard Committee, Incorporated</td>
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<tr>
<td>AMCA</td>
<td>Air Movement and Control Association International, Inc.</td>
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<td>ANSI</td>
<td>American National Standards Institute</td>
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<tr>
<td>APA</td>
<td>APA - The Engineered Wood Association</td>
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<tr>
<td>ARMA</td>
<td>Asphalt Roofing Manufacturers Association</td>
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<tr>
<td>ASCE</td>
<td>American Society of Civil Engineers</td>
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<tr>
<td>ASHRAE</td>
<td>American Society of Heating, Refrigerating and Air-Conditioning Engineers</td>
</tr>
<tr>
<td>ASME</td>
<td>ASME International</td>
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(The American Society of Mechanical Engineers International)
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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</table>
| ASTM    | ASTM International  
(American Society for Testing and Materials International) |
| AWI     | Architectural Woodwork Institute |
| AWPA    | American Wood-Preservers' Association |
| AWS     | American Welding Society |
| BHMA    | Builders Hardware Manufacturers Association |
| BIA     | Brick Industry Association (The) |
| CDA     | Copper Development Association |
| CISCA   | Ceilings & Interior Systems Construction Association |
| CRI     | Carpet & Rug Institute (The) |
| CSI     | Construction Specifications Institute (The) |
| DHI     | Door and Hardware Institute |
| EPA     | Environmental Protection Agency (United States) |
| FM      | Factory Mutual |
| FMRC    | Factory Mutual Research  
(Now FM Global) |
| FSC     | Forest Stewardship Council |
| GA      | Gypsum Association |
| GANA    | Glass Association of North America |
| GS      | Green Seal |
| HPVA    | Hardwood Plywood & Veneer Association |
| ICRI    | International Concrete Repair Institute, Inc. |
| IESNA   | Illuminating Engineering Society of North America |
| ILI     | Indiana Limestone Institute of America, Inc. |
| ISO     | International Organization for Standardization |
| ISSFA   | International Solid Surface Fabricators Association |
| ITS     | Intertek Testing Service NA |
| LEED    | Leadership in Energy & Environmental Design (USGBC) |
| MFMA    | Maple Flooring Manufacturers Association, Inc. |
| NAAMM   | National Association of Architectural Metal Manufacturers |
| NAIMA   | North American Insulation Manufacturers Association |
| NBGQA   | National Building Granite Quarries Association, Inc. |
| NCMA    | National Concrete Masonry Association |
| NeLMA   | Northeastern Lumber Manufacturers' Association |
| NEMA    | National Electrical Manufacturers Association |
| NFPA    | NFPA  
(National Fire Protection Association) |
| NFRC    | National Fenestration Rating Council |
| NOFMA   | NOFMA: The Wood Flooring Manufacturers Association  
(Formerly: National Oak Flooring Manufacturers Association) |
| NRCA    | National Roofing Contractors Association |
| NSF     | NSF International  
(National Sanitation Foundation International) |
| NTMA    | National Terrazzo & Mosaic Association, Inc. (The) |
| NWWDA   | National Wood Window and Door Association  
(Now WDMA) |
| SDI     | Steel Deck Institute |
| SDI     | Steel Door Institute |
| SGCC    | Safety Glazing Certification Council |
| SJI     | Steel Joist Institute |
SMACNA  Sheet Metal and Air Conditioning Contractors' National Association
SSINA  Specialty Steel Industry of North America
SSPC  SSPC: The Society for Protective Coatings
TCA  Tile Council of America, Inc.
UL  Underwriters Laboratories Inc.
USGBC  U.S. Green Building Council
WCLIB  West Coast Lumber Inspection Bureau
WDMA  Window & Door Manufacturers Association
       (Formerly: NWWDA - National Wood Window and Door Association)
WWPA  Western Wood Products Association

B. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of current edition of Codes in the Commonwealth of Massachusetts.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014200
SECTION 014339

MOCKUPS

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 SUMMARY

A. This Section specifies requirements for mockups. Provide and coordinate mockup assemblies at Project site for Designer’s and the UMA Project Manager’s review and acceptance, in accordance with requirements of the Contract Documents. Refer also to individual specification sections for mockup requirements. Generally, without limitation, mockups on site include the following:

1. Mockups of individual pieces of the work, as specified within individual specification section.
2. Field Mockup of sheet metal configurations. Refer to Specification Section 040120 – MASONRY RESTORATION and Section 076200 – SHEET METAL FLASHING.

B. It shall be the responsibility of the Contractor to coordinate the work of the related Specification Sections so that each mockup meets the specified requirements.

C. Examine Contract Documents for requirements that affect Work of this Section.

1.3 DEFINITIONS

A. Freestanding Mockups: Full-size, physical assemblies that are constructed on-site in a protected location.

1. Freestanding mockups are not part of the final construction. Freestanding mockups will be used to verify selections made under sample submittals, to demonstrate aesthetic effects, qualities of materials and execution, and to review construction, coordination, testing, and operation.
2. Approved freestanding mockups establish the standard by which the Work will be judged.
3. Approved freestanding mockups remain on site during the balance of construction and are demolished and removed from site at completion of the Work they represent.

B. In-Place Mockups: Full-size, physical assemblies that are constructed in-place and remain part of final construction.
1. In-place mockups will be used to verify selections made under sample submittals, to demonstrate aesthetic effects, qualities of materials and execution, and to review construction, coordination, testing, or operation.
2. Approved in-place mockups establish the standard by which the Work will be judged.
3. Approved mockups remain part of the completed Work.

1.4 SUBMITTALS

A. Schedule: General Contractor shall submit a schedule of mockup construction, including dates for mockup review by the Designer.
   1. Mockup schedule shall be reviewed at each progress meeting, revised and resubmitted as required.
   2. Schedule shall allow sufficient time for mockups which are not accepted to be reconstructed and reviewed until accepted by the Designer.

B. Shop Drawings of Mockups: Provide large scale shop drawings for fabrication, installation and erection of all parts of each mockup. Include plans, elevations, and details of anchorage, connections and accessory items. Include details of foundation and temporary supports.

C. Photographs of Mockups: Submit 20 digital photographs of mockups after completion of installation and acceptance of each mockup. Submit on CD to the UMA Project Manager.

D. Submittal Samples: Refer to individual Specification Sections for submittal requirements of mockup components and coordinate accordingly.

1.5 QUALITY ASSURANCE

A. Mockup Modifications: Make design modifications to work only as required to meet performance requirements and to coordinate the work. Indicate proposed design modifications on shop drawings. Maintain original design concept without altering profiles and alignments indicated.

PART 2 - PRODUCTS

2.1 MATERIALS AND PRODUCTS

A. Provide materials, components, and products for mockups as specified in individual Specification Sections.

PART 3 - EXECUTION

3.1 GENERAL

A. Refer to individual specification sections for specific requirements regarding condition of surfaces, erection, and erection tolerances.
3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as non-visible as possible.

B. Protect construction exposed by or for quality-control service activities.

3.3 REMOVAL AND DISPOSAL

A. Demolish and remove mockups from site at the completion of the Project. Legally dispose of demolished mockup materials. Comply with requirements of Section 017419 – CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.

END OF SECTION 014339
1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 REQUIREMENTS INCLUDED

A. Temporary Facilities and Controls including the following:
1. Temporary Water.
2. Weather Protection.
3. Temporary Power.
4. Hoisting Equipment and Machinery.
5. Staging.
7. Dust Control.
8. Noise Control.
9. Indoor Air Quality (IAQ) Management.
10. Enclosures.
11. Cleaning During Construction.
12. Field Offices.
13. Telephone Service.
15. Construction Barriers.
17. Debris Control and Removal.
20. Shoring.
22. Project Identification Sign.
25. Construction Cores.
26. Covered Walkways

1.3 TEMPORARY WATER

A. Water will be furnished by the General Contractor up to the point indicated on the Drawings for the permanent connection to the water supply system.
B. Water shall be distributed by means of connections to the permanent service lines that are to be installed at the expense of the General Contractor.

C. Any temporary hoses and pipe lines and connections from the permanent service lines either outside or within the building, necessary for the use of the General Contractor and his Subcontractors shall be installed, protected, and maintained at the expense of the Plumbing Subcontractor.

D. Temporary hoses and temporary pipe lines used for transporting water shall not be run unattended or unprotected across parking areas, parking area entrance, walkways, plazas, or steps. Temporary hoses and temporary pipelines shall not be permitted to be installed along, through or across corridor and occupied rooms or spaces.

E. The General Contractor shall provide an adequate supply of drinking water from approved sources of acceptable quality, satisfactorily cooled, for his employees and those of his Subcontractors.

F. Use of the water may be discontinued by the Commonwealth if, in the opinion of the UMA Project Manager, it is wastefully used.

1.4 WEATHER PROTECTION

A. It is the intent of these Specifications to require that the General Contractor shall provide temporary enclosures and heat to permit construction work to be carried on during the months of November through March in compliance with M.G.L. Chapter 149, Section 44D(G). Under no circumstances shall the General Contractor suspend any work during the months of November through March because of their reluctance to provide and pay for temporary weather protection. These Specifications are not to be construed as requiring enclosures or heat for operations that are not economically feasible to protect in the judgment of the Designer. Included in the preceding category, without limitation, are such items as site work, excavation, steel erection, erection of certain "exterior" wall panels, roofing, and similar operations.

B. "WEATHER PROTECTION" shall mean the temporary protection of that work adversely affected by moisture, wind, and cold, by covering, enclosing and/or heating. This protection shall provide adequate working areas during the months of November through March as determined by the Designer and consistent with the approved construction schedule to permit the continuous progress of all work necessary to maintain an orderly and efficient sequence of construction operations. The General Contractor shall furnish and install all "weather protection" material and be responsible for all costs, including heating required to maintain a minimum temperature of 50 degrees F. at the working surface. This provision does not supersede any specific requirements for methods of construction, curing of materials or the applicable general conditions set forth in the Contract Articles with added regard to performance obligations of the General Contractor.

C. Within 30 calendar days after his award of contract, the General Contractor shall submit in writing to the Designer for approval, three copies of his proposed methods for "Weather Protection."

D. Installation of weather protection and heating devices shall comply with all safety regulations including provisions for adequate ventilation and fire protection devices. Heating devices which may cause damage to finish surfaces shall not be used.
E. The General Contractor shall furnish and install one accurate Fahrenheit thermometer at each work area as designated by the Designer. However, one additional accurate Fahrenheit thermometer shall be provided for every 2,000 square feet of floor space where the work areas exceed 2,000 square feet.

1.5 TEMPORARY POWER

A. Electrical service will be provided in its current state to the Contractor free of charge by the Owner through electrical outlets if operable. Use shall be limited to construction hours. The Owner reserves the right to charge the Contractor for excessive electrical service usage (i.e., wasteful usage). Should charges be considered, the Owner will notify the Contractor in writing of his intent, 48 hours in advance. Should the Contractor require greater electrical service than is provided by existing service the Contractor will provide generators at no additional cost to the Owner. Generators will be required to operate hot air welding equipment. All temporary wiring installed by the Electrical Subcontractor shall be removed after it has served its purpose. Use copper wire only.

B. All relocations of temporary service to meet construction and/or phasing requirements shall be performed at no additional cost to the Commonwealth.

1.6 HOISTING EQUIPMENT AND MACHINERY

A. All hoisting equipment and machinery required for the proper and expeditious prosecution and progress of the work shall be furnished, installed, operated and maintained in safe condition by the individual Subcontractors and is so stated in each appropriately related Section of the Specifications. All costs for hoisting operating services shall be borne by the Subcontractors unless specifically excepted in the Contract Documents.

1. A licensed equipment manufacturer’s representative shall be present at all times, to witness the erection and dismantling of all hoisting equipment and machinery, whenever such equipment is being erected or dismantled. No such work will be performed without the presence of such representative.

2. Hoisting equipment and machinery erection and dismantling shall be performed only by trained, certified, and experienced riggers qualified to perform such work.

3. Copies of such licenses and/or certifications, clearly indicating qualifications, shall be provided to the UMA Resident Engineer and UMA Project Manager prior to commencement of such erecting and dismantling work.

B. Review Drawings for hoisting requirements and openness of traffic access routes to installed destinations of specified equipment and furnishings.

1.7 STAGING

A. All staging, planking and scaffolding, exterior and interior, required for the proper execution of the work and over eight feet in height, shall be furnished, installed, and maintained by the General Contractor.

1. Erection and dismantling of staging shall be performed only by trained, certified, and experienced staging personnel qualified to perform such work.
2. Copies of such certifications, clearly indicating qualifications, shall be provided to the UMA Resident Engineer and UMA Project Manager prior to commencement of such erecting and dismantling work.

B. All staging up to eight feet in height shall be provided by the individual Subcontractors as applicable to their work.

1.8 MAINTENANCE OF ACCESS

A. The General Contractor shall provide and maintain for the duration of his contract, a means of access to, around and within the site, as indicated on the Contract Drawings, for vehicular traffic and authorized personnel. This means of access shall be construed to sustain the weight of equipment customarily engaged for use in construction projects of this type and magnitude. The General Contractor shall, without additional compensation from the Commonwealth, furnish labor and materials as may be required from time to time to maintain this means of access in an acceptable condition as determined by the Designer. Pedestrian access shall provide adequate protection against falling debris, slippage, adequate lighting, warning and directional signs, and protection against construction activities.

1.9 DUST CONTROL

A. The General Contractor shall have all Subcontractors 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.

1.10 NOISE CONTROL

A. Work must be scheduled and performed in such a manner as to not interfere with the operations of the Owner. Construction work that is deemed by the UMA Project Manager to be excessively noisy may be required to be done during non-normal working hours and at no additional expense to the University.

B. Comply with requirements of authorities having jurisdiction. Develop and maintain a noise-abatement program and enforce strict discipline over all personnel to keep noise to a minimum.

C. Execute construction work by methods and by use of equipment which will reduce excess noise.

1. Equip air compressors with silencers, and power equipment with mufflers.
2. Manage vehicular traffic and scheduling to reduce noise.
3. No heavy equipment may be started or idled before 7A.M.
1.11 INDOOR AIR QUALITY (IAQ) MANAGEMENT

A. Minimize exposure of building occupants, indoor surfaces, and ventilation air distribution systems to environmental tobacco smoke. At a minimum, take the following measures:

1. Prohibit on the job site including campus grounds.
2. Enforcement of this measure shall be by warning on the first offense, and permanent barring from the job site on the second offense.

B. The General Contractor shall develop a Construction Indoor Air Quality Management Plan for this Project.

C. During Construction: Comply with the following requirements:

1. During construction meet or exceed the recommended Control Measures of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guidelines for Occupied Buildings under Construction, Chapter 3, November 2007.
2. If the UMA Project Manager authorizes the use of permanent heating, cooling, and ventilating systems during construction, install filter media having a Minimum Efficiency Reporting Value (MERV) of 8 according to ASHRAE 52.2 at each return-air inlet for the air-handling system used during construction. Replace air filters immediately prior to occupancy. Replacement air filters shall have a MERV 13 according to ASHRAE 52.2.

D. Construction Indoor Air Quality Management Plan Submittal:

1. Within twenty (20) calendar days after receipt of Notice to Proceed, the General Contractor shall submit to the UMA Project Manager a finalized Construction IAQ Management Plan.
2. The proposed Plan shall include, but not be limited to, the following:
   a. Protection of ventilation system components during construction.
   b. Cleaning and replacing contaminated ventilation system components after construction, including filtration media.
   c. Temporary ventilation.
   d. Protection of absorptive materials from moisture damage when stored on-site and after installation, including exterior wall rain protection.
   e. Sequence of finish installation plan.
   f. Selection of cleaning products and procedures to be used during construction and final cleaning.
   g. Schedule of emission test data recorded by General Contractor’s testing laboratory.

E. Take special care to prevent accumulation of moisture on materials and within packaging during delivery, storage, and handling to prevent development of mold and mildew inside packaging and on products.

F. Immediately remove from site and properly dispose of materials showing signs of mold and mildew, including materials with moisture stains.
G. IAQ Plan Implementation:

1. IAQ Manager: The General Contractor shall designate an on-site person responsible for instructing workers and overseeing and documenting results of the Construction IAQ Management Plan for the Project.

2. Distribution: The General Contractor shall distribute copies of the Construction IAQ Management Plan to the jobsite foreman, each Subcontractor, UMA’s Project Manager, and the Designer.

3. Instruction: The General Contractor shall provide on-site instruction of appropriate procedures and methods to be used by all parties at the appropriate stages of the Project.

4. Preconditioning: Allow products, which have odors and significant VOC emissions, to off-gas in a dry, well-ventilated space for sufficient period to dissipate odors and emissions prior to delivery to Project.

5. Remove containers and packaging from materials prior to conditioning to maximize off-gassing of VOCs.

6. Condition products in ventilated warehouse or other building.


1.12 ENCLOSURES

A. Provide temporary, insulated, weather tight closures of openings in exterior surfaces for providing acceptable working conditions and protection for materials, allowing for heating during construction, and preventing entry of unauthorized persons. Provide doors with self-closing hardware and locks.

B. All utilities including electric ducts, conduits, telephone lines, sprinklers, and other utilities shall be protected against damage from construction activity. The General Contractor shall be responsible for all damage to the utilities from construction and shall repair all such damage at no additional cost to UMA.

C. Provide temporary partitions and ceiling as required to separate work areas from occupied areas, to prevent penetration of dust and moisture into occupied areas, to prevent damage to existing areas and equipment. Construction shall be framing and sheet materials with closed joints and sealed edges at intersections with existing surfaces; (STC rating 35 in accordance with ASTM E900. Flame Spread Rating of 25 in accordance with ASTM E84. Paint surfaces exposed to view in occupied areas.)

1.13 CLEANING DURING CONSTRUCTION

A. Unless otherwise specified under the various Sections of the Specifications, the General Contractor shall perform clean-up operations during construction as herein specified.

1. Refer to Section 017418 – DEMOLITION WASTE MANAGEMENT AND DISPOSAL for additional requirements.

2. Refer to Section 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL for additional requirements.
B. Control accumulation of waste materials and rubbish; periodically dispose of off-site in a legal manner. The General Contractor shall bear all costs, including fees resulting from such disposal.

C. Clean interior areas prior to start of finish work and maintain areas free of dust and other contaminants during finish operations.

D. Maintain project in accordance with all local, Commonwealth of Massachusetts, and Federal Regulatory Requirements.

E. Store volatile wastes in covered metal containers, and remove from premises.

F. Prevent accumulation of wastes which create hazardous conditions.

G. Provide adequate ventilation during use of volatile or noxious substances.

H. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
   1. Do not burn or bury rubbish and waste materials on site.
   2. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
   3. Do not dispose of wastes into streams or waterways.
   4. Identify potential sources of cleaning water runoff and propose abatement procedures.

I. Use only those materials which will not create hazards to health or property and which will not damage surfaces.

J. Use only those cleaning materials and methods recommended by manufacturer of surface materials to be cleaned.

K. Execute cleaning to ensure that the buildings, the sites, and adjacent properties are maintained free from accumulations of waste materials and rubbish and windblown debris, resulting from construction operations.

L. Provide on-site containers for collection of waste materials, debris, and rubbish.

M. Remove waste materials, debris and rubbish form the site periodically and dispose of at legal disposal dump site (DEP approved).

N. Handle material in a controlled manner with as few handlings as possible. Do not drop or throw materials from heights.

O. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not damage surrounding surfaces.

1.14 SANITARY FACILITIES

A. The General Contractor shall provide suitable toilet facilities for its staff, the Resident Engineer and the Designer, and additional facilities for the workmen on the job, including personnel of Subcontractors.
B. Provide chemical toilets where work is in progress and in quantity required by OSHA Code. Ballast the units to prevent over turning, and provide a lock to prevent unauthorized access.

C. Chemical toilets and their maintenance shall meet requirements of state and local health regulations and ordinances and shall be subject to the approval the Resident Engineer and Designer.

1.15 CONSTRUCTION BARRIERS

A. Proper construction barriers shall be provided around the contract work areas as defined by the Contract Drawings or as directed by the Resident Engineer.

B. Construction barriers shall consist of traffic cones, ribbons, tapes, secure fencing, trench covers, wood barriers, warning signs, directional signs, and other traffic materials to keep traffic and people from area of construction and maintain ongoing operations per the Contractor’s Site Specific Safety Plan.

C. Barriers shall be erected at such approved locations as are necessary, sufficiently cross-braced and supported adequately from floors and ceilings as required.

1.16 PARKING

A. Parking: Parking spaces on Campus are very limited and the University will not provide designated parking lot spaces near the construction site for the Contractor’s use. The Contractor shall contact Parking Services (413-545-0065) to determine the location of the nearest available parking spaces. The Contractor will be required to pay all fees for parking. The Contractor shall state his/her parking and staging area requirements during the Pre-Construction Meeting. The area(s) for materials storage will then be agreed to between the Contractor and the UMA Project Manager. The limits of material storage will be delineated by the Contractor with construction fencing and enforced throughout the Contract.

1.17 DEBRIS CONTROL AND REMOVAL

A. Debris shall not be permitted to accumulate or migrate and the work shall at all times be kept satisfactorily clean. Facility trash receptors shall not be used for the disposal of debris. Dumpster shall be provided by the General Contractor for removal of debris for all Subcontractors.

B. Remove debris from the work site on a daily basis and dispose of same at any (private or public) DEP approved dump that the General Contractor may choose providing that the General Contractor shall make all arrangements and obtain all approvals and permits necessary from the owner or officials in charge of such dumps. Proposed dump site shall be submitted to be approved by UMA prior to start of demolition. During disposal process, copies of daily receipts from dumpsite shall be submitted on a regular basis.
1.18 SAFETY PROTECTION

A. At no time shall the work be left unattended without proper safety protection and shall not be left unprotected to the weather and accessible to the public. It is the responsibility of the General Contractor to maintain proper safety protection for the public while work is in progress or unattended.

1.19 TREE, VEHICLE AND EQUIPMENT PROTECTION

A. All construction activities shall be performed in such a manner so as not to dust, stain or damage any building elements, equipment, vehicles, etc. within general vicinity of the construction work area. Any damage to these items shall be cleaned and repaired at the expense of the General Contractor.
   1. Trees within 50 ft. of work areas, including temporary laydown and crane locations, shall be protected in accordance with UMass Tree Protection Guidelines.
   2. All construction vehicles and equipment on site shall be effectively disabled and secured when not in use.

1.20 SHORING

A. The Subcontractors shall provide all temporary shoring and bracing as required for the proposed work. Comply with all applicable codes and standards.

1.21 CONSTRUCTION FENCE

A. A construction fence shall be provided along the entire perimeter of the contract limit lines, and shall be kept in good repair at all times, and shall be arranged to maintain ongoing operation’s access and egress.

B. Construction fences shall be six feet high and of chain link, or approved equal, erected in a substantial manner, straight, plumb and true as approved by the Designer.

C. Gates shall be built into fence at such approved locations as are necessary, well cross-braced and hung on heavy strap hinges with proper post and hook for double gates. Provide heavy hasps and padlocks for each gate. Provide a set of three keys for each lock to UMA Project Manager and Resident Engineer to facilitate emergency access.

D. Fencing shall be removed by the General Contractor at no cost to the Commonwealth at such time before final completion as the Designer directs. Restore site to acceptable condition after removing fence.

1.22 DELIVERY OF MATERIALS

A. All Materials shall be delivered to the Contractor’s or Sub-Contractor’s warehouse or may be delivered to the site if the Contractor’s representative is present to receive them.
B. No materials will be received by UMA personnel, either on site or at the UMA’s shipping and receiving dock.

1.23 SHUT DOWN NOTICE

A. The Contractor shall notify the UMA Project Manager or Resident Engineer, at least fourteen (14) working days in advance, of the need for University personnel to shut down or modify any utilities or building systems. If, due to University emergencies or staffing shortages, the Physical Plant personnel are unable to provide the required shut down or modifications, the contractor shall reschedule their work at no cost to the University.

1.24 COVERED WALKWAYS

A. Install temporary overhead protection at building entrances, for an appropriate distance from the building, when performing construction work above the entrance on the roof or building façade.

B. Comply with standards and code requirements for erecting structurally adequate overhead protection. Erect overhead protection using appropriate scaffold and wood plank decking to provide safe passage.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 015000
SECTION 016000

PRODUCT REQUIREMENTS

1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 REQUIREMENTS INCLUDED

A. Products include material, equipment, and systems.
B. Comply with Specifications and referenced standards as minimum requirements.
C. Components required to be supplied in quantity within a Specification Section shall be the same, and shall be interchangeable.
D. Do not use materials and equipment removed from existing structures, except as specifically required, or allowed, by the Contract Documents.
E. In the case of an inconsistency between Drawings and the Project Manual, or within either document which is not clarified by addendum, the product of greater quality or greater quantity of work shall be provided in accordance with the Designer’s interpretation.

1.3 WORKMANSHIP

A. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
B. Perform work by persons qualified to produce workmanship of specified quality.
C. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.

1.4 MANUFACTURERS' INSTRUCTIONS

A. When work is specified to comply with manufacturers’ instructions, submit copies as specified in Section 013300 - SUBMITTAL REQUIREMENTS, distribute copies to persons involved, and maintain one set in field office.
B. Perform work in accordance with details of instructions and specified requirements.
1.5 TRANSPORTATION AND HANDLING

A. Refer to the Contract and General Conditions and Specifications Sections for requirements pertaining to transportation and handling of materials and equipment.

B. Transport products by methods to avoid product damage; deliver in undamaged condition in manufacturers labeled and unopened containers or packaging, dry.

C. Provide equipment and personnel to handle products by methods to prevent soiling or damage.

D. Promptly inspect shipments to assure that products comply with requirements, that quantities are correct, and products are undamaged.

1.6 STORAGE AND PROTECTION

A. Refer to the Contract and General Conditions and Specifications Sections for requirements pertaining to storage and protection of materials and equipment.

B. Store products in accordance with manufacturers' instruction, with seals and labels intact and legible. Store sensitive products in weather tight enclosures; maintain within temperature and humidity ranges required by manufacturers' instructions.

C. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation.

D. Store loose granular materials on solid surfaces in a well-drained area; prevent mixing with foreign matter.

E. Arrange storage to provide access for inspection. Periodically inspect to assure that products are undamaged, and are maintained under required conditions.

F. Protect masonry and stone products from damage and staining.

G. Protect finished materials, including window frames and doors, with protection acceptable to the UMA Project Manager.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000
PART 1 - GENERAL

1.1 GENERAL PROVISIONS
A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.

1.2 SUMMARY
A. This Section includes administrative and procedural requirements for recycling and disposing of demolition waste.
B. Related Work: The following items are not included in this Section and will be performed under the designated Sections:
   1. Section 013543 - ENVIRONMENTAL PROTECTION PROCEDURES:
      a. Environmental-protection measures during construction.
   2. Section 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL
      a. Additional requirements for addressing existing materials in renovation and/or remodeling projects; not applicable to new construction.
   3. Section 017700 – CONTRACT CLOSEOUT:
      a. Reporting requirements for construction and demolition material disposition.

1.3 DEFINITIONS
A. Asphalt Pavement, Brick, and Concrete (ABC) Rubble: Rubble that contains only weathered (cured) asphalt pavement, clay bricks and attached mortar normally used in construction, or concrete that may contain rebar. The rubble shall not be mixed with, or contaminated by, another waster or debris.
B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
C. Disposal: Removal off-site of demolition waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.4 PERFORMANCE REQUIREMENTS

A. General: Develop waste management plan that results in end-of-Project rates for salvage/recycling of 75 percent by weight of total waste generated by the Work.

B. Salvage/Recycle Requirements: Salvage and recycle as much non-hazardous demolition and construction waste as possible including the following materials:

1. Asphaltic concrete paving.
2. Concrete and concrete reinforcing steel.
3. Brick and concrete masonry units.
4. Coated brick, concrete, and concrete masonry units. Coatings shall include, but not be limited to: paint, stucco applications, plaster, etc.
5. Wood studs, wood joists, plywood, oriented strand board, paneling and trim.
6. Casework and cabinetry.
7. Structural steel, miscellaneous steel and rough hardware.
8. Roofing.
9. Insulation.
10. Doors, door frames and door hardware.
11. Windows, glass, plastic and glazing.
12. Metal studs.
15. Carpet and carpet pad.
16. Demountable partitions.
17. Equipment.
18. Plumbing fixtures, piping, supports, hangers, valves, and sprinklers.
19. Mechanical equipment and refrigerants.
20. Electrical conduit, copper wiring, lighting fixtures, lamps, and ballasts.
21. Electrical devices, switchgear, panelboards and transformers.

C. In the event the General Contractor encounters previously unidentified material that is reasonably believed to be hazardous, asbestos containing, coated with lead-based paint, or oily debris, the General Contractor shall immediately stop work in the affected area and report the condition to the Designer and UMA. At no time shall such material be handled or disposed of by the General Contractor. The General Contractor agrees to cooperate with UMA and any consultants engaged by UMA to perform services with respect to the analysis, detection, removal, containment, treatment, and disposal of such regulated materials.

1.5 SUBMITTALS

A. Waste Management Plan (WMP): Submit three copies of plan within 30 days of date established for the Notice to Proceed, in a format acceptable to the UMA Project Manager.

B. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit three copies of report. Include the following information:
1. Material category.
2. Generation point of waste.
3. Total quantity of waste in tons.
4. Quantity of waste salvaged, both estimated and actual in tons.
5. Quantity of waste recycled, both estimated and actual in tons.
6. Total quantity of waste recovered (salvaged plus recycled) in tons.
7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.

C. Waste Reduction Calculations: Before submitting a request for Substantial Completion, submit three copies of calculated final rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.

D. Facility Permitting Information: For disposal and incinerator facilities provide a copy of the facility’s current solid waste management facility permit in accordance with 310 CMR 19.000.

E. Facility Permitting Information: For off-site ABC rubble crushing and/or recycling facilities, provide a statement from the facility that references its specific exemption from the solid waste regulations (per 310 CMR 16.05 (3) (e)) or provide a copy of the facility’s current solid waste management facility permit in accordance with 310 CMR 19.000.

F. Record Keeping for Recycling and Landfill and/or Incinerator Disposal: Documentation to be submitted by the Contractor shall include the following as a condition of each payment:
   1. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, and/or receipts.
   2. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, and/or receipts.

G. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.

H. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.

I. Qualification Data: The Refrigerant Recovery Technician shall be certified by EPA-approved certification program and shall provide a copy of current certification to the Designer prior to starting work.

J. Statement of Refrigerant Recovery: The Refrigerant Recovery Technician responsible for recovering refrigerant shall prepare and sign a document stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations and using equipment that has a current EPA Registration. The document shall include the name and address of technician, date refrigerant was recovered, amount of refrigerant recovered and shipped, and date of receipt of shipment by the reclaimer.
1.6 QUALITY ASSURANCE

A. Refrigerant Recovery Technician Qualifications: The Refrigerant Recovery Technician will use recycling/recovery equipment that has a current EPA Registration.

B. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction, including but not limited to, Massachusetts solid waste regulations contained in 310 CMR 16.00 and 310 CMR 19.000.

1.7 WASTE MANAGEMENT PLAN

A. General: Develop plan consisting of waste identification, and waste reduction, handling, transportation and recycling/disposal procedures. Include separate sections in plan for recycling and disposal of demolition waste. Indicate quantities by weight throughout waste management plan.

B. Waste Identification: Indicate anticipated types and quantities of demolition and site-clearing waste generated by the Work. Include estimated quantities and assumptions for estimates.

C. Waste Reduction Program: List each type of waste and whether it will be recycled or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.

1. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.

2. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.

3. Donated Materials: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt. Include names, addresses, and telephone numbers.

4. Sold Materials: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt. Include names, addresses, and telephone numbers.

D. Handling and Transportation Procedures: Include methods that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location(s) on Project site where materials separation will be located.

E. Waste Management Coordinator: Identify General Contractor employee who will be the Waste Management Coordinator for the project. The Waste Management Coordinator will be responsible for implementing, monitoring, and reporting status of waste management work plan.

PART 2 - PRODUCTS (Not Used)
PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement Waste Management Plan as approved by the Designer. Provide containers, storage, signage, transportation, and other items as required to implement WMP for the entire duration of the Contract.

B. The General Contractor shall conduct a Waste Management Meeting at the Site. The General Contractor shall review methods and procedures related to waste management including, but not limited to, the following:

1. Distribute approved WMP to everyone concerned within three days of approved submittal return.
2. Clearly identify the Waste Management Coordinator and explain the Coordinator's responsibilities.
3. Review WMP with each subcontractor when they first begin work on-site. Review plan procedures and locations established for recycling and disposal.
4. Review and finalize procedures for material separation and verify availability of containers and bins needed to maintain production.
5. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
6. Provide recycling educational literature for all workers, Subcontractors, and suppliers engaged in on-site activities.
7. Provide appropriate recycling signage for containers and workspaces.

C. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walkways, and other adjacent occupied and used facilities.

1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, sold, and disposed.
2. Comply with project requirements for controlling dust and dirt, environmental protection, and noise control.

3.2 SALVAGING DEMOLITION WASTE

A. Salvaged Items for Sale and Donation: Sale activities are not permitted on Project site. Labor for loading donated items acceptable to local trade practices; union labor if applicable

3.3 RECYCLING DEMOLITION WASTE, GENERAL

A. General: Recycle paper and beverage containers used by on-site workers.

B. Recycling Receivers and Processors: Available recycling receivers and processors include, but are not limited to, those listed in the Massachusetts Recycling Directory, available from the Massachusetts State Bookstore (617-727-2834) located in the Massachusetts State House, for recycling operations within the Commonwealth of Massachusetts.
C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical. For waste, which cannot be separated at Project site, co-mingle only with waste which is to be separated later at a recycling facility. Contamination of recycling containers with trash or other contaminants will be addressed by the General Contractor and who will be solely responsible for payment of all fines and penalties.

1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin. Inspect containers and bins for contamination and remove contaminated materials if found.
2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
4. Store components off the ground and protect from the weather.
5. Remove recyclable waste off UMA's property and transport to recycling receiver or processor.

D. On-site crushing of non-coated asphalt pavement, brick, and concrete (ABC) rubble as described in 310 CMR 16.05, is allowed, provided performed in accordance with 310 CMR 16.05. All coated ABC waste must be transported off-site to an asphalt batching plant or to an ABC crushing or recycling operation that is either conditionally exempt from 310 CMR 16.00 or has been sited and permitted in accordance with 310 CMR 16.00 and 310 CMR 19.00, respectively.

3.4 RECYCLING DEMOLITION WASTE

A. Masonry: Deposit all masonry debris in designated container to be transported to approved aggregate recycling facility to be crushed and screened for use as satisfactory soil for general fill or satisfactory soil for fill or sub-base. Clean and stack undamaged whole masonry units on wood pallets for reuse.

B. Wood Materials: Sort and stack salvageable members according to size, type, and length. Separate lumber waste and deposit into appropriate container. Separate engineered wood products, panel products, and treated wood materials into designated containers.

C. Metals: Separate metals by material type if practical. Stack salvageable structural steel members according to size, type of member, and length.

D. Glass: Deposit glass debris into designated containers to be transported to approved glass-recycling facility.

E. Plastics: Deposit plastic containers and debris into designated containers to be transported to approved plastic recycling facility.

F. Acoustical Ceiling Panels and Tile: Deposit pulp able mineral fiber panels into designated container protected from weather and prepare for transport, as directed by manufacturer, to appropriate recycling facility to be processed into new acoustic ceiling panels. Separate suspension system, trim, and other metals from panels and tile and sort with other metals.
G. Equipment: Drain tanks, piping, and fixtures. Seal openings with caps or plugs. Protect equipment from exposure to weather.

H. Plumbing Fixtures: Separate by type and size fixtures suitable for reuse. Deposit all other fixtures into designated containers by material type to be transported to approved recycling facility.

I. Piping: Separate piping materials by material composition. Deposit in designated containers. Separate supports, hangers, valves, sprinklers, and other components by material type and deposit in designated containers for transport to approved recycling facility.

J. Electrical Devices: Separate switches, receptacles, switchgear, transformers, meters, panelboards, circuit breakers, and other devices by type.

K. Conduit: Deposit conduit and fittings into designated container.

3.5 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of to accumulate on-site.

2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

3. For solid waste disposal facilities located in the Commonwealth of Massachusetts, dispose of materials only in facilities which currently comply with applicable state regulations, including requirements of 310 CMR 16.00 {Site Assignment for Solid Waste Facilities} and 310 CMR 19.000 {Solid Waste Management}, and local bylaws.

B. Burning: Do not burn waste materials.

C. Disposal: Transport waste materials off the Owner’s property and legally dispose of them.

END OF SECTION 017418
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SECTION 017419

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for recycling and disposing of construction waste.

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

1. Section 013543 - ENVIRONMENTAL PROTECTION PROCEDURES:
   a. Environmental-protection measures during construction.

2. Section 017418 – DEMOLITION WASTE MANAGEMENT AND DISPOSAL
   a. Additional requirements for addressing existing materials in renovation and/or remodeling projects; not applicable to new construction.

3. Section 017700 – CONTRACT CLOSEOUT
   a. Reporting requirements for construction and demolition material disposition.

1.3 DEFINITIONS

A. Asphalt Pavement, Brick, and Concrete (ABC) Rubble: Rubble that contains only weathered (cured) asphalt pavement, clay bricks and attached mortar normally used in construction, or concrete that may contain rebar. The rubble shall not be mixed with, or contaminated by, another waste or debris.

B. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, and/or installation of new materials as part of remodeling, renovation, or repair operations. Construction waste includes packaging.

C. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations prior to renovations or remodeling.

D. Disposal: Removal off-site of construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

E. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
F. **Salvage:** Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

G. **Salvage and Reuse:** Recovery of demolition or construction waste and subsequent incorporation into the Work.

### 1.4 PERFORMANCE REQUIREMENTS

A. **General:** Develop a Waste Management Plan that states as its objective to attain at project completion a recycling rate of 75 percent or more by weight of the total waste generated by the Work.

B. **Recycling Requirements:**

1. Maximize recycling of non-hazardous construction waste including the following materials:
   a. Site-clearing waste.
   b. Masonry and CMU.
   c. Lumber, wood sheet materials, and wood trim.
   d. Metals.
   e. Roofing.
   f. Insulation.
   g. Glass.
   h. Plastics.
   i. Gypsum board, refer to paragraph below.
   j. Acoustical ceiling panels.
   k. Carpet and pad.
   l. Piping.
   m. Wire and cable.
   n. Electrical conduit.
   o. Packaging: 100 percent of the following uncontaminated packaging materials: Paper, cardboard, boxes, plastic sheet and film, polystyrene packaging, wood crates, plastic pails.

2. **Clean Gypsum Board Waste:** For new construction and renovation projects involving 20,000 square feet or greater, divert clean (virgin material) gypsum board waste from disposal to recycling and/or reuse outlets.
   a. For new construction and renovation projects involving less than 20,000 square feet, contractors are encouraged to divert clean gypsum board waste from disposal to recycling and/or reuse outlets.
   b. Clean (virgin material) gypsum board is defined as material without any existing attached material, including but not limited to adhesives, mastics, and paints.

### 1.5 SUBMITTALS

A. **Waste Management Plan (WMP):** Submit 3 copies of Plan within 30 days of date established for the Notice to Proceed, in a format acceptable to the UMA Project Manager.

B. **Waste Management Progress Reports:** Concurrent with each Application for Payment, submit three copies of report. The following information shall be included:
1. Material category.
2. Generation point of waste.
3. Total quantity of waste in tons.
4. Quantity of waste recycled, both estimated and actual in tons.
5. Total quantity, of waste recovered (recycled) as a percentage of total waste.

C. Waste Management Calculations: Before submitting a request for Substantial Completion, submit three copies of calculated final rates for recycling and disposal as a percentage of total waste generated by the Work.

D. Facility Permitting Information: For landfill and/or incinerator facilities, provide a copy of the facility’s current solid waste management facility permit in accordance with 310 CMR 19.000.

E. Record Keeping for Recycling and Landfill and/or Incinerator Disposal: Documentation to be submitted by the General Contractor shall include the following:

1. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, and/or receipts.
2. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, and/or receipts.

F. Facility Permitting Information: For ABC rubble crushing and/or recycling facilities, provide a statement from the facility that references its specific exemption from the solid waste regulations (per 310 CMR 16.05 (3) (e)) or provide a copy of the facility’s current solid waste management facility permit in accordance with 310 CMR 19.000.

G. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.

H. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.

1.6 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction, including but not limited to, Massachusetts solid waste regulations contained in 310 CMR 16.00 and 310 CMR 19.000.

1.7 WASTE MANAGEMENT PLAN

A. General: Develop plan consisting of waste identification, and waste reduction, handling, transportation, and recycling/disposal procedures. Include separate sections in plan for recycling and disposal of construction waste. Indicate quantities by weight throughout waste management plan.
B. Waste Identification: Indicate anticipated types and quantities of site-clearing and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.

C. Waste Reduction Program: List each type of waste and whether it will be recycled or disposed in a landfill or incinerator. Include points of waste generation, total quantity by weight of each type of waste, quantity for each means of recovery, and handling and transportation procedures.

1. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
2. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
3. Donated Materials: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt. Include names, addresses, and telephone numbers.
4. Sold Materials: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt. Include names, addresses, and telephone numbers.

D. Handling and Transportation Procedures: Include methods that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location(s) on Project site where separated materials will be stockpiled.

E. Waste Management Coordinator: Identify General Contractor employee who will be the Waste Management Coordinator for the project. The Waste Management Coordinator will be responsible for implementing, monitoring, and reporting status of waste management activities.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement Waste Management Plan as approved by the Designer. Provide containers, storage, signage, transportation, and other items as required to implement WMP for the entire duration of the Contract.

B. The General Contractor shall conduct a Waste Management Meeting at the Site. The General Contractor shall review methods and procedures related to waste management including, but not limited to, the following:

1. Distribute approved WMP to everyone concerned within three days of approved submittal return.
2. Clearly identify the Waste Management Coordinator and explain the Coordinator's responsibilities.
3. Review WMP with each subcontractor when they first begin work on-site. Review plan procedures and locations established for recycling and disposal.
4. Review and finalize procedures for material separation and verify availability of containers and bins needed to maintain production.
5. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
6. Provide recycling educational literature for all workers, Subcontractors and suppliers engaged in on-site activities.
7. Provide appropriate recycling signage for containers and workspaces.

C. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walkways, and other adjacent occupied facilities.
   1. Designate and label specific areas on Project site necessary for separating materials that are to be recycled, reused, donated, sold, and disposed.
   2. Comply with project requirements for controlling dust and dirt, environmental protection, and noise control.

3.2 RECYCLING CONSTRUCTION WASTE, GENERAL

A. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical. For waste, which cannot be separated at Project site, co-mingle only with waste, which is to be separated later at a recycling facility. The General Contractor will address contamination of recycling containers with trash or other contaminants and who will be solely responsible for payment of all fines and penalties.
   1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin. Inspect containers and bins for contamination and remove contaminated materials if found.
   2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
   3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
   4. Store components off the ground and protect from the weather.
   5. Remove recyclable waste off User Agency's property and transport to recycling receiver or processor.

B. On-site crushing of asphalt pavement, brick, and concrete (ABC) rubble as described in 310 CMR 16.05, is not allowed. All ABC waste must be transported off-site to an asphalt batching plant or to an ABC crushing or recycling operation facility that is either conditionally exempt from 310 CMR 16.00 or has been sited and permitted in accordance with 310 CMR 16.00 and 310 CMR 19.000, respectively.

3.3 RECYCLING CONSTRUCTION WASTE

A. Packaging:
   1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
3. Pallets: To the extent feasible, require shippers using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

B. Site-Clearing Wastes: Chip brush, branches, and trees on-site.

C. Concrete: Deposit all debris in designated containers to be transported to approved aggregate recycling facility to be crushed and screened for use as satisfactory soil for fill or sub-base.

D. Masonry: Deposit all masonry debris in designated containers to be transported to approved aggregate recycling facility to be crushed and screened for use as satisfactory soil for general fill or satisfactory soil for fill or sub-base. Clean and stack undamaged whole masonry units on wood pallets.

E. Wood Materials:
   1. Clean Cut-Offs of Lumber: Deposit into designated clean wood container to be transported to designated recycling facility for use as mulch or bio-fuel.
   2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

F. Metals: Separate metals by material type if practical. Stack salvageable structural steel members according to size, type of member, and length.

G. Asphalt Shingle Roofing: Deposit asphalt shingles in designated containers for off-site reuse. Nails, staples acceptable, flashing trim and accessories shall be recycled as metals.

H. Glass: Deposit glass debris into designated containers to be transported to approved glass-recycling facility.

I. Plastics: Deposit plastic containers and debris into designated containers to be transported to approved plastic recycling facility.

J. Clean Gypsum Board: Deposit scraps of clean gypsum board into designated container protected from weather and transport to an appropriate gypsum board recycling outlet or permitted construction and demolition debris processing facility that will divert clean gypsum board to an appropriate gypsum board recycling outlet.

K. Acoustic Ceiling Panels: Deposit pulp able mineral fiber panels into designated container protected from weather and prepare for transport, as directed by manufacturer, to appropriate recycling facility to be processed into new acoustic ceiling panels. Separate suspension system, trim, and other metals from panels and sort with other metals.

L. Carpet: Deposit carpet into designated container protected from weather and prepare for transport, as directed by manufacturer, to appropriate recycling facility to be processed into new products.

M. General: Recycle paper and beverage containers used by on-site workers.
3.4 DISPOSAL OF WASTE

A. Except for items or materials to be recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
3. For solid waste disposal facilities located in the Commonwealth of Massachusetts, dispose of materials only in facilities which currently comply with applicable state regulations, including requirements of 310 CMR 16.00 {Site Assignment for Solid Waste Facilities} and 310 CMR 19.000 {Solid Waste Management}, and local bylaws.

B. Burning: Do not burn waste materials.

C. Disposal: Transport waste materials off Owner's property and legally dispose of them.

END OF SECTION 017419
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SECTION 017700
CONTRACT CLOSEOUT

1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 FINAL CLEANING

A. Unless otherwise specified under the various Sections of the Specifications, the General Contractor shall perform final cleaning operations as herein specified prior to final inspection.

B. Maintain project site 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; leave project clean and ready for occupancy.

C. Cleaning shall include all surfaces, interior and exterior in which the General Contractor has had access whether existing or new.

D. Refer to Sections of the Specifications for cleaning of specific products or work.

E. Use only those materials which will not create hazards to health or property and which will not damage surfaces.

F. Use only those cleaning materials and methods that are recommended by the manufacturer of surface material to be cleaned.

G. Employ experienced workmen, or professional cleaners, for final cleaning operations.

H. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from sight-exposed interior and exterior surfaces.

I. All new and existing glass and plastic surfaces throughout the building shall be thoroughly cleaned and washed by qualified window cleaners at the expense of the General Contractor just prior to acceptance of the Work.

J. Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces as acceptable to the UMA Project Manager.

K. Polish glossy surfaces to a clear shine and provide wax where necessary.

L. Ventilating Systems: Clean permanent filters and replace disposable filters if units were operated during construction. Units should not be operated without filters at all. Throw away filters should be used when operating units prior to Substantial Completion. Submit report of ventilation system cleanliness including ductwork to the UMA Project Manager.

CONTRACT CLOSEOUT
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M. Broom clean exterior paved surfaces and rake clean other surfaces of the grounds.

N. Leave all architectural metals, hardware, and fixtures in undamaged polished conditions.

O. Leave pipe and duct spaces, plenums, furred spaces and the like clean of debris and decayable materials.

P. At the end of the project, General Contractor and each Subcontractor shall remove all his tools, equipment, machinery, and surplus materials from the job site. The General Contractor shall remove all waste materials and rubbish from the project at this time. All temporary structures shall be removed and the project shall be left clean.

1.3 LANDSCAPE REPAIRS

A. All lawn areas used for contractor parking and material storage shall have the topsoil removed, the subsoil shall be loosened to 12” below finished grade, the topsoil shall be replaced and amended with a complete, slow release fertilizer, proof rolled and seeded with the seed mix Game Day by Harrell’s. Contact Mike Nagel at (508) 380-1668.

B. All lawn areas damaged by pedestrian or vehicular traffic due to the contractor’s operations shall be aerated. Aeration shall consist of 9”-10” deep infraction at areas free of tree roots and at areas within tree drip lines shall be aerated 1”-3” with a tow behind 3- point hitch aerator. If in the opinion of the Campus Landscape Architect, the lawn areas require over-seeding or restoration, the following seed mixture shall be used at a rate to be determined:

Game Day by Harrell’s. Contact Mike Nagel at (508) 380-1668

1.4 AS-BUILT DRAWINGS

A. As-built Drawings shall consist of all the Contract Drawings. As-built Drawings shall be kept up-to-date. Information from on-going Work shall be recorded on As-built Drawings within 48 hours of Work being performed.

B. The General Contractor and each Subcontractor shall be required to maintain one set of As-built Drawings, as the work relates to their Sections of the Specifications, at the site.

C. The As-built Drawings shall be stored and maintained in the General Contractor's field office apart from other documents used for construction. The As-built Drawings shall be maintained in a clean, dry, and legible condition and shall not be used for construction purposes.

D. As-built Drawings, as submitted by the General Contractor shall be verified in the field by the Designer or his Consultants. Verification by the Designer shall occur during the construction process and prior to the related work being completed and covered up.

E. The As-built Drawings shall be available at all time for inspection by the UMA Project Manager or Designer. All deficiencies noted shall be promptly corrected.

F. The following information shall be indicated on the As-Built Drawings:
1. Record all changes, including change orders, in the location, size, number and type both horizontally and vertically of all elements of the project which deviate from those indicated on all the Contract Drawings.

2. The tolerance for the actual location of utilities and appurtenances within the building to be marked on the As-built Drawings shall be plus or minus two (2) inches.

3. The location of all underground utilities and appurtenances referenced to permanent surface improvements, both horizontally and vertically at ten (10) ft. intervals and at all changes of direction.

4. The location of all internal utilities and appurtenances, concealed by finish materials, including but not limited to valves, coils, dampers, vents, cleanouts, strainers, pipes, junction boxes, turning vanes, variable and constant volume boxes, ducts, traps and maintenance devices. The location of these internal utilities, appurtenances, and devices shall be shown by offsets to the column grid lines on the Drawings.

5. Each of the utilities and appurtenances shall be referenced by showing a tag number, area served and function on the As-built Drawings.

G. At the end of each month and before payment for materials installed, the General Contractor, each Subcontractor, and agents of the Commonwealth shall review As-built Drawings for purpose of payment.

1. If the changes in location of all installed elements are not shown on the As-Built Drawings and verified in the field, then the material shall not be considered as installed and payment will be withheld.

H. Prior to the installation of all finish materials, a review of the As-built Drawings shall be made to confirm that all changes have been recorded. All costs to investigate such conditions shall be borne by the applicable party as determined by the Designer.

I. At the completion of the contract, each Subcontractor shall submit to the General Contractor a complete set of his respective As-built Drawings indicating all changes. After checking the above drawings, the General Contractor shall certify in writing on the title sheet of the drawings that they are complete and correct and shall submit the As-built Drawings to the Designer.

1. As-Built Drawings shall be submitted electronically to the Designer, in a format which can be added to the complete plans as constructed.

J. The Designer shall review the drawings and shall verify by letter to the UMA Project Manager that the work is accurate. The Designer shall incorporate all changes on the original drawings; thus creating Record Drawings. The Designer shall submit to the UMA Project Manager, electronic files in AutoCAD 2013 (or later version) format with two (2) sets of prints to be used for the final inspection of the project. Inaccuracies in As-built Drawings, as determined by the Designer and the UMA Project Manager, may be grounds for postponement of the final inspection or delay the processing of final payment until such inaccuracies are corrected by the General Contractor.
1.5 OPERATING AND MAINTENANCE REQUIREMENTS

A. At least two weeks prior to the time of turning over this contract to the Operating Agency for Use and Occupancy, or Final Acceptance, the General Contractor shall secure and deliver to the Operating Agency via the Designer, three (3) complete, indexed files and three (3) CD or DVD copies, containing approved operating and maintenance manuals, shop drawings, record of paint colors, floor and ceiling materials and other data as follows.

1. Operating manuals and operating instructions for each model and type of equipment in each of the various systems. Include operating instructions for systems integrating several pieces of equipment.

2. Catalog data sheets for each item of mechanical or electrical or equipment actually installed including performance curves, rating data and parts lists.

3. Catalog sheets, maintenance manuals, and approved shop drawings of all mechanical or electrical equipment controls and fixtures with all details clearly indicated, including size of lamps and other maintenance supplies.

4. Operating procedures, including startup, shutdown, seasonal and weekend operations.

5. Description of controls and sequence of operations.

6. Maintenance Data:
   a. Manufacturer's information, including list of spare parts.
   b. Name, address, and telephone number of Installer or supplier.
   c. Maintenance procedures.
   d. Maintenance and service schedules for preventive and routine maintenance.
   e. Maintenance record forms.
   f. Sources of spare parts and maintenance materials.
   g. Copies of maintenance service agreements.
   h. Copies of warranties and bonds.
   i. Name, address and telephone numbers of repair and service companies for each of the systems installed.

7. Names, addresses and telephone numbers of all Subcontractors and suppliers, together with repair and service companies for each of the major systems installed under this contract.

8. Provide a steel cabinet for storage of manuals and operating instructions.

B. Non-Availability of operating and maintenance manuals or inaccuracies therein may be grounds for cancellation and postponement of any scheduled final inspection by the UMA Project Manager until such time as the discrepancy has been corrected.

1.6 DEMONSTRATION AND TRAINING

A. Instruction: Instruct University’s personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

1. Provide instructors experienced in operation and maintenance procedures.

2. Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at the start of each season.

3. Schedule training with Physical Plant personnel with at least fourteen (14) days' advance notice.

4. Coordinate instructors, including providing notification of dates, times, length of instruction, and course content.
B. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections. For each training module, develop a learning objective and teaching outline. Include instruction for the following:
1. System design and operational philosophy.
2. Review of documentation.
3. Operations.
4. Adjustments.
5. Troubleshooting.
7. Repair.

1.7 CLOSEOUT REQUIREMENTS AND SUBMITTALS

A. Procedural Requirements Prior to Use and Occupancy: Punch List:

1. During the finishing stages of the project, the General Contractor shall make frequent inspections with Subcontractors, the Designer, and the UMA Resident Engineer, so as to progressively check for and correct faulty work.
2. During the course of construction of the project, the General Contractor shall procure and maintain test records and certificates that will be required prior to issuance of the Department of Public Safety (DPS) Certificate of Occupancy and the Division of Capital Asset Management and Maintenance (UMA) Certificate of Agency Use and Occupancy.
3. When the General Contractor determines that he/she is Substantially Complete*, he/she shall prepare for submission to the Designer a list of items to be completed or corrected. The failure to include any items on such list does not alter the responsibility of the General Contractor to complete all work in accordance with contract Documents. The General Contractor’s list shall be accompanied with certificates that will be required as prerequisites for applying for a DPS inspection
   a. *NOTE: Substantially Complete means that less than one percent (1%) of all contract work, including change orders, remains to be done, and that none of the remaining work will affect health, safety, or function.
4. Upon receipt of the General Contractor’s list of items to be completed or corrected, the Designer will promptly make a thorough observations, together with representatives of UMA and the Operating Agency, and prepare a “punch list”, setting forth in accurate detail any items on the General Contractor’s list and additional items that are not acceptable. Concurrently, the General Contractor will arrange for a DPS inspection, Amherst Fire Department, Town of Amherst Electrical and other required inspections through UMA EH &S or as directed by UMA Project Manager.
5. When the punch list has been prepared, and any DPS Inspector comments* have been included, the Designer will arrange a meeting with the General Contractor and Subcontractors, and the UMA Project Manager, to identify and explain all punch list items and answer questions on the Work that must be done before Final Acceptance.
   a. If a DPS inspector (including, but not limited to AABA, boiler, elevator or any other authorized inspector) requires modifications and/or additions that were not included in the construction documents, the Designer should review the applicable code(s) and provide written interpretation to the UMA Project Manager together with his/her recommendations.

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6. The General Contractor shall immediately correct all punch list items that affect health, safety or function (as determined by the Designer, completion of which is required before issuance of a UMA Certificate of Agency Use and Occupancy).

7. Upon receipt of the UMA Certificate of Agency Use and Occupancy, and its adjunct monetized punch list, the General Contractor shall cause the completion of all of the other punch list items within the timeframe required by said certificate, but not more than 45 calendar days if the timeframe is not indicated on the said certificate.

8. There is a history of specific items that are essential to the Use and Occupancy, but are frequently overlooked. Some things to watch for are:
   a. Final cleaning.
   b. Ventilating systems:
      1) Clean permanent filters and replace disposable filters if units were operated during construction.
      2) Clean ducts, blowers, and coils if units were operated without filters during construction.
      3) Leave pipe and duct spaces, plenums, furred spaces and the like clean of debris and materials subject to decay.
   c. Assure that exterior and interior fire rated and egress doors are operating properly and have the proper hardware.
   d. Assure that fire-rating labels are on doors and frames that are supposed to have them.
   e. As-built marked-up drawings should be completed and transferred over to the Designer.
   f. Make final changeover of permanent locks and cores. Advise UMA Project Manager of changeover in security provisions.
   g. Perform landscape repairs.

B. Prerequisites for Department of Public Safety (DPS) Certificate of Inspection and/or Certificate of Occupancy: Prior to requesting a Department of Public Safety (DPS) inspection, the General Contractor shall provide (via transmittal to the UMA Resident Engineer) the following “closeout submittals:”
   1. Project record documents and as-built marked-up drawings.
   2. Recycling and Landfill records per Section 017419 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL, para. 1.5, E.
   3. Approved operating and maintenance (O & M) data.
   4. Extended guarantees and warranties.
      a. General Contractor’s General Guarantee shall effectively include:
         1) A written guarantee, for one (1) year from date of Substantial Completion of the project, against defective workmanship, material, installation and equipment for all work of the project. Repair or replacement of defective workmanship, material, installation or equipment that develop within this period shall be accomplished promptly upon notification to the General Contractor, to the satisfaction of the Operating Agency, at no cost.
         2) Replace or repair material or equipment that requires excessive service during the guarantee period.
         3) Guarantee shall include 24-hour service of complete system(s) during guarantee period at no additional cost.
         4) Provide manufacturer’s engineering and technical staff at site promptly to analyze and rectify problems that develop during guarantee period. If problems cannot be rectified promptly, to the satisfaction of the User Agency,
advise the Designer in writing; describe efforts to rectify situation and provide analysis of cause of problem.

b. Manufacturer’s Guarantee or Warranty
1) In addition to guarantee requirements above, obtain manufacturers’ written installation, equipment, and material warranties for time periods indicated in the various Specification Sections of the Contract Documents. Such manufacturers’ warranties contained within the Specification Sections, together with any other warranties offered in manufacturers published data, are to be transferred to the User Agency.

c. Keys and keying schedule.

d. Evidence of compliance with requirements of governing authorities including, without limitations, the following:
1) Certificate of Inspection, in form of signed permits from the electrical, plumbing, gas, fire department, boiler, and any other required inspectors.
2) Certification from the local fire department to the effect that all detection, alarm and suppression systems, and other equipment or systems under fire department jurisdiction are approved.
3) When carpeting and/or draperies are provided, a flame, smoke and fuel-rating certificate provided by the supplying General Contractors.
4) Elevator certification(s) from the elevator inspector obtained through the General Contractor’s Elevator Subcontractor.
5) A letter from the Plumbing Subcontractor. that the potable water supply has been sanitized.
6) Septic system certification obtained from the town by the General Contractor (when applicable).
7) Pressurized vessel certifications from the boiler inspector obtained through the Mechanical Subcontractor.
8) When air balancing is required, the air balancing report prepared by the Mechanical Subcontractor (or commissioning agent, when applicable), and accepted by the design Registered Professional Engineer.
9) When smoke control/fire emergency ventilation system is required, the test report prepared by the Mechanical Subcontractor (or commissioning agent, when applicable), and accepted by the design Registered Professional Engineer.
10) Evidence of test and approval for Department of Environmental Protection (DEP) and Department of Public Health (DPH), when applicable.

C. Prerequisites for Department of Public Safety (DPS) Certificate of Inspection and/or Certificate of Occupancy: Prior to requesting a Department of Public Safety (DPS) inspection, the Designer shall provide (via transmittal to the UMA Resident Engineer) the following “closeout submittals:”

1. Certification, from the design Registered Professional Engineer, stating that the fire protection systems have been installed in accordance with the approved fire protection construction documents and meet the requirements of 780 CMR 903.1.
2. Structural Engineer-of-Record (SER) final report as required by 780 CMR 1705.3.
3. Certification, from the design Registered Professional Engineer, stating that the emergency lighting and power systems have been installed in accordance with the approved electrical construction documents.
D. Upon completion of the Work for which a permit has been issued, the DPS building official shall conduct a final inspection pursuant to 780 CMR 110.3.

E. Beneficial and Temporary Occupancy:

1. Beneficial (partial) Occupancy:
   a. UMA may allow beneficial (partial) occupancy of portions of a building in order to allow a User Agency to set up and test their own operational equipment in select building areas. It does not allow for use and/or occupancy of the general public when, in fact, the building cannot function for the use(s) it is intended to accommodate, nor when there are outstanding items that affect health, safety and/or function.
   b. It is UMA policy to disallow beneficial occupancy if the fire alarm and suppression systems are inoperative.
   c. Beneficial occupancy of building areas shall not constitute Substantial Completion, or Final Acceptance of work by UMA, and shall not institute the guarantee period for any work.
   d. A punch list will be developed for building areas to receive beneficial occupancy and the building areas will be photographed prior to such occupancy of said portion or portions of the work.

2. Temporary Occupancy:
   a. When, according to 780 CMR 111.3 – Temporary Occupancy upon the request of the holder of a permit, a Temporary Certificate of Occupancy (TCO) may be issued before the completion of the entire work covered by the permit, provided that such portion or portions shall be occupied safely prior to full completion of the building or structure without endangering life or public welfare. The Building Official may consult with all Subcontractor Inspectors for issues pertaining to life safety and shall consult with the Fire Official pertaining to issues of adequacy of fire protection systems prior to the issuance of a Temporary Certificate.
   b. The Building Official may issue a Temporary Certificate of Occupancy (TCO) that can allow public use and occupancy of said portion or portions of the work, subject to punch list(s) being established prior to such occupancy.
   c. Issuance of a Department of Public Safety (DPS) Temporary Certificate of Occupancy (TCO) does not relieve the General Contractor of the UMA requirements of the contract and does not constitute Substantial Completion of the project.
   d. Temporary Occupancy of building areas will institute the guarantee period for completed work of all Divisions except 21 through 28 of the Specifications for those building areas so used and occupied, exclusive of remaining work indicated on associated punch lists. Use of systems provided under Divisions 21 through 28 of the Contract Documents for temporary services and facilities shall not constitute Substantial Completion, or Final Acceptance of work by UMA, and shall not institute the guarantee period.

   (1) If it is determined that there are no items on the punch list that affect health, safety or function and it is agreed by the Building Official, the Designer and the UMA Project Manager that the entire building can be granted a Temporary Certificate of Occupancy (TCO), the work of all Divisions including 21 through 28 of the Specifications for the entire building so used and occupied, exclusive of remaining work indicated on associated punch lists, will institute
the guarantee period for completed work of all Divisions including the systems provided under Divisions 21 through 28.

(2) Whereas a User Agency cannot properly maintain building systems without operating and maintenance documentation, subcontractors for Divisions 21 through 28 will be responsible for maintaining their respective building systems at no additional cost to the contract until the project is substantially complete and Operating and Maintenance (O & M) manuals, reviewed and approved by the Designer, are provided to the UMA Project Manager.

(3) Issuance of a Temporary Certificate of Occupancy (TCO) may require remaining punch list work to be completed during irregular work hours. Such work will be performed at no additional cost to the contract.

e. The following UMA criteria, and any other criteria that may be imposed by the Building Official, are required for a DPS Temporary Certificate of Occupancy (TCO):

(1) Upon receipt of the General Contractor’s list of items to be completed or corrected, the Designer will promptly make a thorough inspection, together with representatives of UMA and the Operating Agency, and prepare a “punch list”, setting forth in accurate detail any items on the General Contractor’s list and additional items that are not acceptable. The Designer and UMA Project Manager will identify and tag (by asterisk) all items that, in their opinion, affect health, safety or function. The Building Official may include additional items that, in her/his opinion, affect items that endanger life or public welfare.

(2) When the punch list has been prepared, and all DPS Inspector comments* have been included, the General Contractor shall immediately correct all punch list items that affect health, safety or function (all asterisked items). This work must be completed before the issuance of a DPS Temporary Certificate of Occupancy (TCO).

* NOTE: If a DPS inspector (including, but not limited to AABA, boiler, elevator or any other authorized inspector) requires modifications and/or additions that were not included in the construction documents, the Designer should review the applicable code(s) and provide written interpretation to the UMA Project Manager together with their recommendations.

f. Exclusive of other items that the DPS inspector may impose, there is a history of specific items that are essential for, temporary occupancy. These items include, but are not limited to the following:

(1) Clean ducts, blowers, and coils if units were operated without filters during construction.

(2) Install permanent filters and replace disposable filters if units were operated during construction.

(3) Assure that exterior and interior fire rated and egress doors are operating properly and have the proper hardware.

g. Evidence of compliance with requirements of governing authorities including, without limitations, the following:

1) Certificate of Inspection, in form of signed permits from the electrical, plumbing, gas, fire department, boiler, and any other required inspectors.

2) Certification from the local fire department to the effect that all detection, alarm and suppression systems, and other equipment or systems under fire department jurisdiction are approved.
3) When carpeting and/or draperies are provided, a flame, smoke and fuel-rating certificate provided by the supplying General Contractor.
4) Elevator certification(s) from the elevator inspector obtained through the General Contractor’s elevator subcontractor.
5) A letter from the Plumbing Subcontractor that the potable water supply has been sanitized.
6) Septic system certification obtained from the town by the General Contractor (when applicable).
7) Pressurized vessel certifications from the boiler inspector obtained through the Mechanical Subcontractor.
8) When air balancing is required, the air balancing report prepared by the Mechanical Subcontractor (or commissioning agent, when applicable).
9) When smoke control/fire emergency ventilation system is required, the test report prepared by the Mechanical Subcontractor (or commissioning agent, when applicable).
10) Evidence of test and approval for Department of Environmental Protection (DEP) and Department of Public Health (DPH), when applicable.

F. Prerequisites for UMA Certificate of Agency Use and Occupancy: UMA Certificate of Agency Use and Occupancy E-1 Form. Prior to requesting a Division of Capital Asset Management (UMA) Certificate of Agency Use and Occupancy, the UMA Resident Engineer will procure and have ready and available the following approved items (referred to as Closeout Submittals):

1. Operating and maintenance (O & M) manuals and written operating instructions for the various systems.
2. Catalog data sheets for each item of mechanical or electrical equipment actually installed including performance curves, rating data and parts lists.
3. Catalog sheets, maintenance manuals, and approved shop drawings of all mechanical and electrical equipment controls and fixtures with all details clearly indicated, including size of lamps.
5. Names, addresses, and telephone numbers of repair and service companies for each of the major systems installed under the construction contract.
6. Signed Department of Public Safety (DPS) Certificate of Occupancy per 780 CMR 111.2
9. Subcontractor Affidavits that specified equipment and installed items have been seismically braced in accordance with code requirements.
10. Monetized punch list of the remaining Work that must be done before Final Acceptance.
11. As-built documents should be completed (both electronic files and transparencies) and ready to transfer over to the UMA Project Manager. As-built documents shall consist of, but not be limited to, the following:
   a. Drawings (in AutoCAD ver. 2013 or later format)
      1) Contract drawings, for all disciplines, marked-up to clearly indicate as-built conditions.
      2) All clarification and/or changed conditions sketches (SK’s).
   b. Specifications (in .pdf format)
      1) All construction specifications.
      2) All addenda.
   c. Shop drawings, submittals, etc. (scanned format)
1) All approved shop drawings, submittals, etc.

12. Approved documents submitted to the UMA or the Designer shall be electronically scanned (including the associated transmittals and, where applicable, the Designer-of-Record’s and UMA’s comments) as a .pdf document. All scanned approved submittals shall be included on a CD.

13. The electronic file names, for each approved submittal, shall contain the following information:
   a. For APPROVED or APPROVED AS NOTED Shop Drawings:
      1) Project Number Submittal’s Date, APPROVED, Submittal Name, Submittal’s Specification Section Name and Number, and Submittal’s Revision Number.
      2) As an example, the file name of an approved submittal for Concrete
         a) Design Mix: DFS991DC1 030106 APPROVED Concrete Design Mix Cast In Place Concrete 033000 Rev0.PDF
   b. For Shop Drawings submitted for information only, e.g. welders certificate, the electronic file name shall contain the following information:
      1) Project Number Submittal’s Date, FOR INFO, Submittal Name, Submittal’s Specification Section Name and Number, and Submittal’s Revision Number.
      2) As an example, the file name of a for information only submittal for a welder’s certificate:
         a) DFS991DC1 030106 FOR INFO Welders Certificate Quality Requirements 014000 Rev0.PDF
   c. Unless otherwise stated all submitted documents shall include an electronic scanned image as noted above.
   d. The electronic file name shall be printed on every shop-drawing page.

14. The UMA Project Manager will attach the monetized punch list to the UMA Certificate of Agency Use and Occupancy, indicate the official date of Use and Occupancy, establish the date upon which all remaining punch list items must be completed (normally 30-45 calendar days), and procure appropriate signatures on the original and seven (7) copies.

15. After receipt of signatures, the UMA Project Manager will distribute the signed copies.

16. Project schedules (in Primavera format, unless otherwise authorized), baseline, and all updates.

17. Notification to Operating Agency and/or User Agency of Proposed Use and Occupancy Date: The UMA Project Manager is to notify the Operating Agency and/or User Agency of the project Use and Occupancy date at least seven (7) calendar days in advance.

G. Prerequisites for UMA Certificate of Final Inspection, Release, and Acceptance: UMA Final Certificate of Final Inspection, Release, and Acceptance (E-2 Form). Upon receipt of the UMA Certificate of Agency Use and Occupancy, and its adjunct monetized punch list, the General Contractor shall cause the completion of all of the other punch list items within timeframe required by said certificate, but not more than 45 calendars days if the timeframe is not indicated on the said certificate.

1. If the General Contractor fails to pursue completion of the remaining monetized punch list work, on a continual basis, within the timeframe required by the certificate, UMA may, after seven (7) calendar days written notice, elect to complete the work with separate forces and charge the work against the General Contractor.
2. At the end of the General Contractor’s one (1) year guarantee period, the General Contractor shall transfer manufacturers’ equipment and material warranties that are still in force to the Operating Agency.

1.8 GUARANTEES AND WARRANTIES

A. Submit to the Designer all extended guarantees and warranties that have been specified in various, individual Sections of the Specifications. Guarantees shall be assembled by Specification No. and Section in accordance with Specifications Table of Contents.

1. Guarantees and warranties shall be enforceable in the Commonwealth of Massachusetts and subject to interpretation in accordance with the laws of the Commonwealth of Massachusetts.

2. Guarantees and warranties shall begin at the date of Substantial Completion of the Project. Guarantees and warranties which start at the date of shipment from the factory, or from the completion date of an individual portion of the project, are not acceptable.

B. Unless more stringent requirements are otherwise specified, guarantee all work against defects of materials, equipment and workmanship for one year from the date of Substantial Completion or the date of issue of Certificate of Use and Occupancy for the building or portion thereof, whichever occurs first.

C. If, within any guarantee period, repairs or changes are required in connection with guaranteed work, General Contractor shall promptly upon receipt of notice from UMA, and without additional expense to UMA, within ten business days:

1. Place in satisfactory condition in every particular all guaranteed work and correct all defects.

2. Make good all damage to building, site equipment, or contents thereof, including redecoration which, in the opinion of the Designer, results from the use of material, equipment or workmanship which are inferior, defective or not in accord with the terms of the Contract.

D. If General Contractor, after such notice, fails to proceed immediately to comply with terms of guarantee, UMA may correct defects and hold General Contractor liable for all expenses incurred.

E. Promptly after completion of the work, obtain from each Subcontractor where a guarantee is required, a warranty addressed to and in favor of UMA or the User Agency if directed by UMA.

F. Delivery of any warranty required does not relieve the General Contractor from any obligation assumed under other provisions of the Contract.

G. Deliver guarantees and warrantees to the Designer before or with the application for Final Payment.

H. The general warranty set forth in the General Conditions is in addition to, exclusive of, and not in substitution of such guarantees as may be required in the Specifications.
PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 017700
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SECTION 024100

SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 040120 – Masonry Restoration
B. Section 061000 – Rough Carpentry
C. Section 075200 – SBS Modified Bitumen Roofing
D. Section 076200 – Sheet Metal Flashing and Trim
E. Section 085000 – Metal Window
F. Section 223000 – Plumbing
G. Section 261000 – Temporary Mechanical/Electrical Disconnects

1.3 DESCRIPTION OF WORK

A. Work Included:

1. Demolition and removal of selected portions of buildings and structures and as required for new work. Refer to the appropriate technical Section and Contract Drawings for additional requirements.

2. Salvage of existing items to be reused or turned over to the facility.

3. Removal and legal 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 her/his expense. Salvage value belongs to the Contractor. On-site sale of materials is not permitted.

4. Scheduling and sequencing operations without interrupting utilities serving occupied areas. If interruption is required, obtain written permission from the utility company and the UMA Project Manager. Schedule interruption when the least amount of inconvenience will result.
1.4 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 User Agency ready for reuse, at a location designated by the User Agency. Protect from weather until accepted by User Agency.

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.

1.5 MATERIALS OWNERSHIP

A. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques, antiques, and other items of interest or value to UMA that may be encountered during selective demolition remain property of the Commonwealth or user Agency as applicable. Carefully remove each item or object in a manner to prevent damage and deliver promptly to a location acceptable to the UMA Project Manager.

1.6 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 User Agency's on-site operations are uninterrupted if applicable.
2. Interruption of utility services. Indicate how long utility services will be interrupted.
3. Coordination for shutoff, capping, and continuation of utility services.
4. Use of elevator and stairs.
5. Locations of proposed dust- and noise-control temporary partitions and means of egress, including for other occupants affected by selective demolition operations.
7. Means of protection for 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 to the User Agency.

C. Predemolition Videotapes: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by selective demolition operations. Comply with Division 01. Submit before Work begins.
D. Landfill Records: Provide trip tickets (receipts) indicating receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1. Comply with submittal requirements in Section 017418 – DEMOLITION WASTE MANAGEMENT AND DISPOSAL.

2. Comply with submittal requirements in Section 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.

E. Contractor to provide site safety plan UMA’s EHS.

1.7 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. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

C. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

D. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

E. Standards: Comply with ANSI A10.6 and NFPA 241.

F. Predemolition Conference: Conduct conference at Project site to comply with requirements in Section 013100 - PROJECT MANAGEMENT AND COORDINATION. 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.
1.8 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

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Designer.

E. Engage a professional engineer registered in the Commonwealth of Massachusetts to survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective demolition operations.

F. Survey of Existing Conditions: Record existing conditions by use of preconstruction videotapes.

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.

G. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.

1. Arrange to shut off indicated utilities with utility companies and User Agency.
2. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.

3. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing. Where entire wall is to be removed, existing services/systems may be removed with removal of the wall.

4. Prior to commencing cutting work in existing surfaces, take all precautionary measures to assure that mechanical and electrical services to the particular area have been made inactive. Coordinate with Fire Protection, Plumbing, HVAC, and Electrical subcontractors. Only licensed tradesmen of that particular trade shall disconnect and cap existing mechanical and electrical items that are to be removed, abandoned and/or relocated.

5. If, during the process of cutting work, existing utility lines are encountered which are not indicated on the Drawings, regardless of their condition, immediately report such items to the Designer. Do not proceed with work in such areas until instructions are issued by the Designer. Continue work in other areas.

3.3 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. Before any work is done which significantly alters access or egress patterns, consult with the Designer and obtain approval of code required egress. 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. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

1. Strengthen or add new supports when required during progress of selective demolition.

2. Remove temporary shoring, bracing and structural supports when no longer required.

3. Post warning signs and place barricades as applicable during placement and removal of temporary shoring.

C. 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.
D. Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with demolition operations.

3.4 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, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during and after flame-cutting operations.
5. Maintain adequate ventilation when using cutting torches.
6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
9. Dispose of demolished items and materials promptly. Comply with requirements in Section 017418 - DEMOLITION WASTE MANAGEMENT AND DISPOSAL and Section 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.

B. Removed and Salvaged Items:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to User Agency.
4. Transport items to storage area designated by the UMA Project Manager.
5. Protect items from damage during transport and storage.

C. 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.

D. 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.

E. Items for Re-use and Preservation of Existing Surfaces to Remain:

1. The Contractor shall inspect closely each item specifically designated to be relocated, reused, or turned over to the Owner prior to its removal, and immediately report damages and defects to the Designer and UMA Project Manager. The Contractor shall be responsible for any subsequent damage to the same other than latent defects not readily apparent from close inspection, and shall bear responsibility for its repair or same replacement as directed by the Designer, to the satisfaction of the UMA Project Manager.

2. Unless special surface preparation is specified under other Specification Sections, leave existing surfaces that are to remain in a condition suitable to receive new materials and/or finishes.

3.5 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 Commonwealth’s employees 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 Designer, and to the satisfaction of the UMA Project Manager.

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.

D. Every precaution shall be taken to protect against movement or settlement of the building, of adjacent buildings, structures, sidewalks, roads, streets, curbs and pavements. Provide and place at the Contractor’s own expense, all necessary bracing and shoring in connection with demolition and removal work.

E. Remove portions of structures with care by using tools and methods that will not transfer heavy shocks to existing and adjacent building structures, both internal and external of the particular work area.
F. Provide and maintain in proper condition, suitable fire resistive dust barriers around areas where interior demolition and removal work is in progress. Dust barriers shall prevent the dust migration to adjacent areas. Remove dust barriers upon completion of major demolition and removal in the particular work area.

G. Protect unaltered portions of existing construction, including finishes, furnishings and equipment

H. Provide secure weather protection where demolition has removed a portion of the exterior envelope.

3.6 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, cease work in affected area only and immediately notify the Designer and the UMA Project Manager of such discovery. Do not proceed with work in such areas until instructions are issued by the Designer. Continue work in other areas.

B. If unmarked containers are discovered during the course of the work, cease work in the affected area only and immediately notify the Designer and the UMA Project Manager of such discovery. Do not proceed with work in such areas until instructions are issued by the Designer. Take immediate precautions to prohibit endangering the containers integrity. Continue work in other areas.

3.7 CUTTING

A. Perform all cutting of existing surfaces in a manner which will ensure a minimal difference between the cut area and new materials when patched. Use extreme care when cutting existing surfaces containing concealed utility lines which are indicated to remain and bear full responsibility for repairing or replacement of all such utilities that are accidentally damaged.

B. Provide a flush saw cut edge where pavement, curb and concrete removals abut new construction work or existing surfaces to remain undisturbed.

3.8 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Comply with requirements of Section 017418 - DEMOLITION WASTE MANAGEMENT AND DISPOSAL and Section 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL and the following.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
B. Burning: Do not burn demolished materials.

3.9 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 024100
PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 024100 – Selective Demolition
B. Section 061000 – Rough Carpentry
C. Section 075200 – SBS Modified Bitumen Roofing
D. Section 076200 – Sheet Metal Flashing and Trim
E. Section 085000 – Metal Windows

1.3 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 existing designated brick masonry units to install new throughwall flashing components, where indicated on the Contract Drawings. Coordinate with Section 075200 – SBS MODIFIED BITUMEN ROOFING, Section 076200 – SHEET METAL FLASHING AND TRIM, and Section 085000 – METAL WINDOWS for finished tapered insulation height(s) at each designated location.

2. Remove designated existing brick masonry mortar joints and repoint masonry joints where indicated on the Contract Drawings. The Contractor shall be aware that the majority of the head mortar joints appear to be approximately 5/8-inch in width and the bed mortar joints appear to be approximately 3/8-inch in width. However, these widths vary and will require confirmation by the Contractor during the bidding phase.

3. Prepare, clean, and paint portions of the existing steel relieving angles at designated locations, where indicated on the Contract Drawings.

4. Coordination with General Contractor for use of staging, planking and scaffolding, interior and exterior, which is the responsibility of the General Contractor as specified in Section 015000 - TEMPORARY FACILITIES AND CONTROLS.

5. Clean all surfaces where masonry renovations are performed.
1.4 DEFINITIONS

A. Low-Pressure Spray: 100 to 400 psi; 4 to 6 gpm.
B. Medium-Pressure Spray: 400 to 800 psi; 4 to 6 gpm.
C. High-Pressure Spray: 800 to 1200 psi; 4 to 6 gpm.

1.5 SUBMITTALS

A. Product Data: For each type of product indicated. Include recommendations for application and use. Include test data substantiating that products comply with requirements.

B. Samples for Verification: Before erecting mockup, submit samples of the following:
   1. Each type of exposed masonry unit to be used for replacing existing units.
      a. For each brick type, provide straps or panels containing at least four bricks.
   2. Each type of sand used for pointing mortar.
      a. For blended sands, provide samples of each component and blend.
      b. Identify sources, both supplier and quarry, of each type of sand.
   3. Each type of pointing mortar in the form of sample mortar strips, 6 inches long by 1/2-inch-wide, set in aluminum or plastic channels.
      a. Include with each sample a list of ingredients with proportions of each. Identify sources, both supplier and quarry, of each type of sand and brand names of cementitious materials and pigments if any.

C. Qualification Data: For restoration specialists including field supervisors and chemical manufacturer.

D. Restoration Program: For each phase of restoration process, provide detailed description of materials, methods, equipment, and sequence of operations to be used for each phase of restoration work including protection of surrounding materials on building and Project site.
   1. Include methods for keeping pointing mortar damp during curing period.
   2. If materials and methods other than those indicated are proposed for any phase of restoration work, provide a written description, including evidence of successful use on comparable projects, and a testing program to demonstrate their effectiveness for this Project.

E. Contractor to provide site safety plan UMA’s EHS.

1.6 QUALITY ASSURANCE

A. Restoration Specialist Qualifications: Engage an experienced, masonry restoration and cleaning firm to perform work of this Section. Firm shall have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance.
1. At Contractor's option, work may be divided between two specialist firms: one for cleaning work and one for repair work.

2. Field Supervision: Restoration specialist firms shall maintain experienced full-time supervisors on Project site during times that clay masonry restoration and cleaning are in progress. Supervisors shall not be changed during Project except for causes beyond the control of restoration specialist firm.

3. Restoration Worker Qualifications: Persons who are experienced and specialize in restoration work of types they will be performing.

B. Chemical Manufacturer Qualifications: A firm regularly engaged in producing masonry cleaners that have been used for similar applications with successful results, and with factory-trained representatives who are available for consultation and Project-site inspection and assistance at no additional cost.

C. Source Limitations: Obtain each type of material for masonry restoration (face brick, cement, sand, etc.) from one source with resources to provide materials of consistent quality in appearance and physical properties.

D. Mockups: Prepare mockups of restoration as follows to demonstrate aesthetic effects and qualities of materials and execution. Prepare mockups on existing walls under same weather conditions to be expected during remainder of the Work.

1. Before full scale work is commenced, execute the following work for trial work areas to be reviewed by the Owner as to acceptability of color, texture and appearance match with the existing construction. The Contractor shall coordinate with other trades to finalize mockups. Test areas will be at locations established by the Owner and Engineer:
   a. 2 linear feet of throughwall flashing mock-up into the wall system.
   b. 5 individual brick masonry units showing the range and blend of the colors
   c. 2 square feet of brick masonry repointing.

2. A minimum of three (3) mortar samples will be required for the owner’s review. In wall samples are preferred for large scale repointing, whereas sample cubes will be considered for isolated repair locations to match the existing mortar.

3. Prepare, install and cure all materials in accordance with these specifications and the manufacturer’s instructions.

4. Trial areas shall be repeated until acceptable results are obtained. The accepted work shall be a standard for all subsequent work. Areas of masonry repointing shall be allowed to weather for seven days prior to Owner acceptance.

E. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver masonry units to Project site strapped together in suitable packs or pallets or in heavy-duty cartons.
B. Deliver other materials to Project site in manufacturer's original and unopened containers, labeled
with manufacturer's name and type of products.

C. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not
use cementitious materials that have become damp.

D. Store hydrated lime in manufacturer's original and unopened containers. Discard lime if
containers have been damaged or have been opened for more than two days.

E. Store lime putty covered with water in sealed containers.

F. Store sand where grading and other required characteristics can be maintained and contamination
avoided.

1.8 ROOF PROTECTION

A. The roof systems are required to be totally protected in the masonry repair work areas by installing
a layer of rigid board insulation followed by a layer of plywood. Plywood shall be adequately
ballasted to prevent wind uplift of the plywood and roof system. The Contractor is responsible
for any damages to the existing or new roof systems.

B. Install tarpaulins secured with duct tape over all wall penetrations and over roof systems during
brick masonry repair work and cleaning.

C. The Contractor is responsible for the prompt repair of any damage to the roof systems resulting
from the work at the project at no additional cost to the Owner.

D. Masonry work will be performed prior to roof replacement and window replacement.

1.9 PROJECT CONDITIONS

A. Repoint mortar joints and repair masonry only when air temperature is between and 40 and
90 deg F and is predicted to remain so for at least 7 days after completion of work.

B. Cold-Weather Requirements: Comply with the following procedures for masonry repair and
mortar-joint pointing:

1. When air temperature is below 40 deg F, heat mortar ingredients, masonry repair materials,
and existing masonry walls to produce temperatures between 40 and 120 deg F.
2. When mean daily air temperature is below 40 deg F, provide enclosure and heat to maintain
temperatures above 32 deg F within the enclosure for 7 days after repair and pointing.

C. Hot-Weather Requirements: Protect masonry repair and mortar-joint pointing when temperature
and humidity conditions produce excessive evaporation of water from mortar and repair materials.
Provide artificial shade and wind breaks and use cooled materials as required. Do not apply
mortar to substrates with temperatures of 90 deg F and above.
D. Patch masonry only when air and surface temperatures are between and 55 and 100 deg F and are predicted to remain above 55 deg F for at least 7 days after completion of work. On days when air temperature is predicted to go above 90 deg F, schedule patching work to coincide with time that surface being patched will be in shade or during cooler morning hours.

E. Clean masonry surfaces only when air temperature is 40 deg F and above and is predicted to remain so for at least 7 days after completion of cleaning.

1.10 SEQUENCING AND SCHEDULING

A. Order replacement materials at earliest possible date, to avoid delaying completion of the Work.

B. Order sand for repointing mortar immediately after approval of mockups. Take delivery of and store at Project site a sufficient quantity of sand to complete Project.

C. Perform masonry restoration work in the following sequence:

1. Repair existing masonry, including replacing existing masonry with new masonry materials.
2. Rake out joints that are to be repointed.
3. Point mortar joints.
4. Inspect for open mortar joints and repair before cleaning to prevent the intrusion of water and other cleaning materials into the wall.
5. Clean masonry surfaces.

1.11 WARRANTY

A. The Contractor shall supply the Owner with a minimum two-year workmanship warranty for their work. In the event any work related to this section is found to be defective within two years of substantial completion, the Contractor shall remove and replace such at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 SALVAGED MATERIALS AND ITEMS

A. All building materials, equipment and debris of whatever nature from the portions of the existing structure removed under this project and not designated to be reused or reinstalled shall become the property of the Contractor and legally disposed of offsite. The Contractor will be required to place all discarded materials in the appropriate rubbish receptacles for legal disposal by the Contractor.
2.2 MASONRY MATERIALS

A. Replacement brick masonry shall conform to ASTM C 216, Grade SW, Type FBS specifications. Brick shall match existing in size, configuration, color and texture. The majority of the brick masonry units appear to be 3-3/4” x 2-1/4” x 8” in dimension. However, these units vary and will require confirmation prior to ordering.

B. All brick shall be submitted to the Owner for acceptability as to color and appearance match with the existing brick. The Contractor may be required to submit additional brick samples for approval. No brick shall be purchased or installed until approval by the Owner is obtained.

2.3 MORTAR MATERIALS

A. Mortar for rebuilding and replacing brick masonry shall be Type N, conforming to ASTM C270 specifications and shall match the existing in color, texture and appearance. Mortar shall conform to Parts 8 and 11 E of the BIA Technical Notes.

B. Mortar for tuck pointing shall be Type N, conforming to ASTM C270 specifications and shall match the existing in color, texture and appearance. Mortar shall be prehydrated and conform to Part 7 of the BIA Technical Notes.

C. Portland cement shall be Type II (Type III may be used only if previously approved) conforming to ASTM C150, specifications.

D. Hydrated lime shall conform to ASTM C207, Type S specifications.

E. Sand shall conform to ASTM C144, amended as follows:

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<thead>
<tr>
<th>Sieve Size</th>
<th>% Passing (By Weight)</th>
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<tr>
<td>#4</td>
<td>100</td>
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<tr>
<td>#8</td>
<td>95-100</td>
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<tr>
<td>#16</td>
<td>70-100</td>
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<td>40-75</td>
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F. Tinting or coloring agent shall be added to the sand, lime cement to color the fully-cured, in-place mortar to match the physical and chemical characteristics and specified requirements of the Type N mortar.

G. Admixtures - No admixtures shall be allowed.

H. Water shall be clean, potable tap water.
2.4 MASONRY CLEANERS

A. Cleaner for newly-installed brick masonry and repointing areas shall be Sure-Kleen 101 lime solvent by Pro-So-Co, Inc., Hydroclean HT 455 by Hydrochemical Techniques, Inc. 200 Lime Solvent as manufactured by Diedrich Technologies, or approved equal. The cleaner shall be specifically recommended by the manufacturers for the removal of stains and efflorescence from brick masonry.

B. Masking materials shall be commercially available masking or duct tape of appropriate width. Self-adhesive materials shall be completely strippable, leaving no adhesive residue when removed.

C. Plastic sheet for masking tape areas shall be 4 mil. thick minimum polyethylene sheet of appropriate size to cover the required areas.

2.5 WEEPS

A. Baffles to be installed in full head joint weeps of brick masonry shall be minimum 3/8” x 3-1/2” x 3-1/2” baffle comprised of a bonded cellular material such as Wire Bond - Cell Vent, No. 3601 as manufactured by Masonry Reinforcing Corporation of America, Quadro-Vent by Hohmann & Barnard, Inc., Cell Vent by Dur-O-Wall, Inc. or approved equal.

2.6 THROUGHWALL FLASHING AND ACCESSORIES

A. Copper fabric flashing shall consist of a full 5 oz. copper sheet permanently bonded between two layers of textured, woven high tensile strength glass fabric with asphalt compound or epoxy based coating. Primers and mastic adhesive required for the proper installation of the fabric flashing shall be as specifically recommended by the fabric flashing manufacturer. Fabric flashings shall be as manufactured by York Manufacturing, Inc., Advanced Building Products, Inc., Sandell Manufacturing Company, Inc. or approved equal.

B. All accessories, including but not limited to mastic, polyurethane sealants, nails, screws and clip strips shall be copper, brass, stainless steel or galvanized steel and completely compatible with the surrounding metal to prevent galvanic reaction.

C. Termination bar shall be 1/8” x 1” copper or stainless steel bar stock with pre-punched holes spaced at 6” on center.

D. Fasteners for securing termination bar at top of throughwall flashing shall be 1” to 1-1/2” long masonry drive pins with zinc alloy sheaths as manufactured by Star, Rawl, OMG, or approved equal.

E. Coordinate with Section 076200 – SHEET METAL FLASHING AND TRIM of sheet metal throughwall and counterflashing components.
2.7 LATERAL MASONRY TIES

A. Lateral masonry ties shall be stainless steel, #345 BT - Flexible Tie as manufactured by Hohmann & Barnard, Inc., #103-C Triangular Wire Veneer Anchor with #316 Triangle Tie as manufactured by Heckman Building Products, Inc., or and approved equivalent acceptable to the Designer.

2.8 ANTI-RUST STEEL COATINGS

A. All paint materials shall be products of a recognized reliable manufacturer and shall be of the best quality and grade (1st line) for each type. To establish a standard of quality, painting materials shall be supplied from the following manufacturers. Only top quality materials are to be used on the project. Where a question of quality occurs, the Contractor will submit an affidavit from the materials manufacturer stating the quality range of the product to be used, as compared to other top quality products made by that manufacturer. Final color for all steel to be painted shall be selected by the Owner.

1. Tnemec Co. Inc.:
   Primer: ST Typoxy Series N27
   Paint: Endure Shield Series 73
2. Rust Oleum:
   Primer: 9100 Rust-O-Poxy High Performance
   Paint: 9700 Rust-O-Thane (semi-gloss)
3. Dupont Coatings:
   Primer: Corlar 25 P Epoxy Mastic
   Paint: Impron 333 Polyurethane Enamel
4. Or approved equal.

B. Paint Schedule

1. Steel Lintels:
   a. Primer – Number of Coats: One, dry film thickness, 5-8 mils.
   b. Finish Coating – Number of Coats: Two, with a dry film thickness of 2 mils

C. Owner to select color of final coating.

PART 3 - EXECUTION

3.1 PROTECTION

A. Protect persons, motor vehicles, surrounding surfaces of building being restored, building site, plants, and surrounding buildings from harm resulting from masonry restoration work.

1. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during course of restoration and cleaning work.
B. Comply with chemical cleaner manufacturer's written instructions for protecting building and other surfaces against damage from exposure to its products. Prevent chemical cleaning solutions from coming into contact with pedestrians, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.

1. Cover adjacent surfaces with materials that are proven to resist chemical cleaners used unless chemical cleaners being used will not damage adjacent surfaces. Use materials that contain only waterproof, UV-resistant adhesives. Apply masking agents to comply with manufacturer's written instructions. Do not apply liquid masking agent to painted or porous surfaces. When no longer needed, promptly remove masking to prevent adhesive staining.
2. Keep wall wet below area being cleaned to prevent streaking from runoff.
3. Do not clean masonry during winds of sufficient force to spread cleaning solutions to unprotected surfaces.
4. Neutralize and collect alkaline and acid wastes for disposal off Agency's property.
5. Dispose of runoff from cleaning operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.

C. Prevent mortar from staining face of surrounding masonry and other surfaces.

1. Cover sills, ledges, and projections to protect from mortar droppings.
2. Keep wall area wet below rebuilding and pointing work to discourage mortar from adhering.
3. Immediately remove mortar in contact with exposed masonry and other surfaces.
4. Clean mortar splatters from scaffolding at end of each day.

3.2 MASONRY STORAGE

A. Storage of all masonry shall be in the area designated by the Owner. All stored masonry units shall be covered.

3.3 MASONRY SHORING

A. It is the responsibility of the Contractor to design and carry out shoring procedures sufficient to comply with applicable regulations, securely support all masonry or other elements left unsupported by the required removals of brick masonry, and permit the work of other trades to proceed.

B. The Contractor shall be present to remove and reinstall shoring as required to install new throughwall flashings and to coordinate with other trades’ work.

C. The Contractor shall protect recently installed throughwall flashing components and membranes from being damaged by the shoring components. If damages occur, the Contractor shall be responsible to replace damage sections at no additional cost to the Owner.

D. Masonry is to be removed in 4-foot maximum lengths and shored.
E. Notify Engineer and UMA’s project manager immediately if cracks occur in mortar joints of brick intended to remain. Contractor will be responsible to cut out the damaged joint area and repoint it after removal of shoring at no additional cost to the Owner.

F. Point all holes left in mortar by withdrawal of shore fastenings, if used.

G. Completely remove shoring system when no longer needed.

H. Notify the Owner 48 hours in advance of installation of shoring.

3.4 BRICK REMOVAL

A. Coordinate the elevation height of the finished roof surface with that of Section 075200 – SBS MODIFIED BITUMEN ROOFING to confirm the location of the new throughwall flashing heights.

B. Remove bricks at designated locations where indicated on the Contract Drawings. Carefully demolish or remove entire units from joint to joint, without damaging surrounding masonry, in a manner that permits replacement with full-size units.

1. When removing single bricks, remove material from center of brick and work toward outside edges.

C. Support, shore, and protect remaining masonry that surrounds removal area. Maintain flashing, reinforcement, lintels, and adjoining construction in an undamaged condition.

D. Notify Designer of unforeseen detrimental conditions including voids, cracks, bulges, and loose masonry units in existing masonry backup, rotted wood, rusted metal, and other deteriorated items.

E. Remove in an undamaged condition as many whole bricks as possible.

1. Remove mortar, loose particles, and soil from brick by cleaning with hand chisels, brushes, and water.
2. Store brick for reuse, as indicated.
3. Deliver cleaned brick not required for reuse to Agency, unless otherwise directed.

F. Clean bricks surrounding removal areas by removing mortar, dust, and loose particles in preparation for replacement.

G. Removal of brick masonry units at designated window head/steel relieving angle locations shall include the removal of existing brick masonry a minimum of 16-inches beyond the window “opening” to install new end dams and coat the existing steel relieving angles.

3.5 PAINTING OF STEEL RELIEVING ANGLES

A. Refer to the Contract Drawings for limits of painting of the existing steel relieving angles.
B. Items not to be painted which are in contact with or adjacent to painted surfaces shall be removed or protected prior to surface preparation and painting operations.

C. The Contractor shall coordinate the shoring of the existing masonry with the preparation and coating of the existing steel relieving angles as well as the installation of the sheet metal throughwall flashings.

D. The Contractor shall extend the preparation, cleaning, and coating of the existing steel relieving angle a minimum of 16-inches beyond the window opening.

E. Surface Preparation: Remove paint, rust, and other contaminants according to SSPC-SPG or SSPC-SP11, unless otherwise required to comply with paint manufacturer's recommended preparation. Wipe down all steel with solvent to remove greases, oils, and dust.

F. Prior to installing primer provide one coat of the specified cold galvanizing compound to the exposed surfaces of the metal to be painted. Apply compound to the manufacturer’s recommendations and as required by the finish coat manufacturer. Apply primer to the previously prepared base metal in accordance with manufacturer requirements to a dry film thickness as listed in PART 2.

G. Surfaces to be painted shall be cleaned before applying paint or surface treatment. Oil and grease shall be removed with clean cloths and cleaning solvents prior mechanical cleaning. Cleaning solvents shall be of low toxicity with a flashpoint in excess of 100 degrees Fahrenheit. Cleaning shall be programmed so that dust and other contaminants will not fall on wet, newly painted surfaces.

H. All surfaces shall be properly smoothed. All surfaces shall be properly prepared, clean and dry when a coating is applied. Any bare or abraded spots in base coats shall be touched up before next coat is applied.

I. Finishing materials shall be free from skins, lumps or any foreign matter when used, and shall be kept well stirred while being applied.

J. Each coat of finish shall be evenly brushed out and allowed to dry before any subsequent coat is applied. Each coat shall be a different tint from that of the preceding coat and may be reviewed by the Owner before the next coat is applied. Finish coats shall be the exact shade and textures selected. The finished work shall be free from runs, sags, defective brushing and clogging of lines or angles. Drying time between coats or paint shall be in accordance with the manufacturer's labeled instructions. Spray painting will not be allowed. All materials shall be applied in accordance with manufacturer's recommendations.

K. Repair brush marks, scratches, abrasions, and minor surface defects in coatings finish in accordance with manufacturer’s printed instructions. Finish of repaired surfaces shall be uniform and free from blemishes and variations in color and surface texture.
THROUGHWALL FLASHINGS

A. Coordinate the installation of the roof flashings, sheet metal flashings, metal windows, and associated sheet metal flashing with Section 075200 – SBS MODIFIED BITUMEN ROOFING and Section 076200 – SHEET METAL FLASHING AND TRIM.

B. Note, the existing backup wall configurations vary; provide field confirmation of all dimensions prior to fabricating the flashings. Where irregularities in the surface occur, backer rod and filler material can be used to provide positive support for fabric coated copper flashings. Unsupported flashing will not be acceptable.

C. Install copper fabric flashing in a full bed of sealant over the vertical surface of the existing concrete masonry unit wall and flashing. All seams shall be lapped 3" minimum and set in full bed of sealant. Secure copper fabric to concrete masonry unit/concrete surfaces with pre-punched termination bar at 6" on center. Extend fabric 1/2" minimum beyond the exterior face of the brick masonry wall face and 8" minimum up the back of the wall. Secure the copper fabric flashing to the backup wall with the specified fasteners and termination bar. Provide a bead of sealant at the top of the termination bar, tooled to shed water.

BRICK REPLACEMENT

A. Coordinate the installation of new throughwall flashings with Section 075200 – SBS MODIFIED BITUMEN ROOFING, Section 076200 – SHEET METAL FLASHING AND TRIM, and Section 085000 – METAL WINDOWS. Install weeps at base of new throughwall flashing at 24-inches on center, maximum. Weeps are to be set directly on the throughwall flashings without a bed of mortar. Should the weeps be set in the mortar bed, they shall be spaced at 16-inches on center, maximum.

B. Reconstruct brickwork with new brick to follow the existing profile and configuration. All brick masonry shall be plumb, level and true to the lines and dimensions of existing wall. Chipped or broken units shall not be used. If any such units are placed in the finished wall they shall be removed and replaced with new units at no additional cost to the Owner.

C. Provide supplemental anchors/lateral ties into the back-up wall at 16-inches on center both horizontally and vertically. Where anchors penetrate throughwall flashings, seal fastener heads with mastic to provide a watertight assembly.

D. The Contractor shall supply all jacks, shoring and temporary supports necessary to support brickwork above and adjacent to any area to assure proper installation of the work. The Contractor will be responsible to remove and reinstall this shoring as required to install the new flashings.

E. Wet all new and existing masonry units in the work area. Masonry shall be kept damp but without standing water.

F. Utilize rotary mixers when fabricating all mortar. Be sure to maintain relative proportions of mortar materials to provide the texture and color to match the existing mortar. No anti-freeze compounds or other substances shall be added to the mortar. Mix all mortar for at least three (3)
minutes and not more than five (5) minutes with the minimum amount of water to produce a workable consistency. The maximum allowable air content of cured mortar shall be 12% by volume. Retempering of mortars that have stiffened because of evaporation of water will be allowed in order to provide the proper consistency provided all mortar in a batch is utilized within two (2) hours of initial mixing.

G. Set each brick in a full bed of mortar and build upward. Tool all joints to a concave profile. Fully butter all heads.

H. Exercise extreme caution to avoid damaging the existing flashing while installing new brick masonry units and while removing shoring.

I. Work mortar into joints for complete width and depth. Consolidate and tool into joint using concave tooling equipment to completely fill the joint cavity to match the existing joint profile. Tool exposed joints slightly concave with a round or other suitable jointer when the mortar is thumbprint hard. For horizontal joints, jointers shall be at least 12 inches long for brickwork. Jointers shall be slightly larger than the width of the joint so that complete contact is made along the edges of the units, compressing and sealing the surface of the joint. Strike flush joints that will not be exposed. Tool vertical joints first. Brush joints to remove all loose and excess mortar. Horizontal joints shall be level, vertical joints shall be plumb and in alignment from top to bottom of wall.

J. Set new masonry unit in full beds of mortar, top, bottom and sides. Utilize slate wedges as required to maintain mortar joint width. Masonry above throughwall flashings shall be set in full beds of mortar. Should new masonry set in mortar require removal due to un-level/plumb conditions, that masonry unit shall be removed from the work area, cleaned and allowed to dry prior to reinstallation.

K. Provide full joint depth of new mortar. Strike off and tool joints to match existing joint configuration. Allow areas to fully cure prior to cleaning.

L. Where brick masonry replacement occurs in areas to be repointed, rake back joints and repoint together with the wall area.

M. Totally clean the areas of masonry rebuilding only after the rebuilding is completed and the mortar has been allowed to cure for 8 days minimum. Clean surfaces free of all dust, dirt and mortar stains as described in this section.

3.8 REPOINTING

A. Any masonry unit damaged during the repointing process shall be replaced by the Contractor at no additional cost to the Owner. Repoint the deteriorated brick masonry mortar joints as designated on the Contract Drawings.

B. Cut and point all brick masonry mortar joints designated to be repointed.

C. Refer to Technical Notes, Section 7 of the Brick Industry Association concerning methods and materials for tuck pointing repairs.
D. Remove existing mortar to a depth of at least ¾” in the areas to be repointed. Removal shall be accomplished using hand and power tools so as not to damage the existing brick. Remove both horizontal and vertical joints. Brush the joint clean of all loose mortar and dust and wet the exposed surface down with a light water spray. Keep exposed surface damp throughout procedure.

E. Utilize rotary mixers when fabricating mortar. Be sure to maintain relative proportions of mortar materials to provide the texture and color to match the existing mortar. No antifreeze compounds or other substances shall be added to the mortar. Mix dry ingredients before adding water. Mix all mortar for at least 3 minutes and not more than 5 minutes with the minimum amount of water to produce a workable consistency. The maximum allowable air content of cured mortar shall be 12% by volume. Retempering of mortars that have stiffened because of evaporation of water will be allowed in order to provide the proper consistency, provided all mortar in a batch is utilized within 2 hours of initial mixing.

F. Prehydrated mortar shall be used for tuck pointing of masonry. Add only a sufficient amount of water to produce a damp mass of such a consistency that it would retain its form when pressed into a ball with hands, but will not flow under a trowel. Allow mortar to stand for not less than 1 hour nor more than 2 hours. Be sure that the color and texture sample of the cured mortar has been viewed and approved by the Owner.

G. Work mortar into prepared joints for complete width and depth. Consolidate and tool into joint using concave tooling equipment to completely fill the joint cavity and to match the existing joint profile. Repoint rebuilt masonry areas along with the existing. Repointed masonry shall be raked or concave as required to match the existing wall mortar joints.

H. Protect areas of repointing from inclement weather during cure.

I. Allow repointing areas to fully cure prior to masonry cleaning as described in this section.

3.9 MASONRY CLEANING

A. Totally clean all repaired, or repointed masonry areas of all construction stains and excess mortar. Do not perform any cleaning until mortar joints and adjacent sealants are fully cured.

B. Test the specified cleaners on a small area of masonry wall to determine compatibility with the masonry, window units, sealants, etc. Evidence of discoloration, metallic salts or other detritus shall be grounds for requiring the use of a substitute cleaner.

C. The Contractor will be required to clean the masonry units with the minimum cleaning solution mix ratios as recommended by the cleaner manufacturer. Should the minimum dilution ratios not clean the masonry, the Contractor will be required to slightly decrease the dilution rates to clean the surfaces. It is recommended that the Contractor use care when performing the masonry repairs to prevent increasing the mixing solutions.

D. Apply the cleaner at the manufacturer’s recommended dilution rate and dwell duration. Pre-wet the wall if the manufacturer so recommends.
E. Allow the cleaner to stand for the manufacturer’s recommended dwell period while monitoring to ensure that the surface does not dry. Steel bristle wire brushes are not to be used.

F. Rinse all cleaner from the wall with water applied at the manufacturer’s recommended flow and pressure. High pressure washing equipment may be required. Any acid neutralizing agent required by the manufacturer shall be applied as part of this rinse. Ensure that effluent does not accumulate at ground level, and fully rinse all effluent from sidewalks, streets and landscaping each day.

G. The Contractor must provide sufficient site protection to prevent the cleaning effluent from draining into the adjacent storm drains. The Contractor will provide a narrative as to how the site protection will be performed.

3.10 FINAL CLEANING

A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water, spray applied at low pressure.
   1. Do not use metal scrapers or brushes.
   2. Do not use acidic or alkaline cleaners.

B. Wash adjacent nonmasonry surfaces. Use detergent and soft brushes or cloths.

C. Clean masonry debris from roof; remove debris drains. Rinse off roof and flush drainage systems.

D. Sweep and rake adjacent pavement and grounds to remove masonry debris. Where necessary, pressure wash surfaces to remove mortar, dust, dirt, and stains.

END OF SECTION
SECTION 061000
ROUGH CARPENTRY

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 024100 – Selective Demolition
B. Section 040120 – Masonry Restoration
C. Section 075200 – SBS Modified Bitumen Roofing
D. Section 076200 – Sheet Metal Flashing and Trim
E. Section 085000 – Metal Windows
F. Section 261000 – Temporary Mechanical/Electrical Disconnects

1.3 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. Coordinate this work with all trades to provide orderly progress of the tasks.

2. Install new wood blocking at roof penetrations, roof perimeters, roof to wall locations, and as required to properly terminate the new roofing and flashing systems. Coordinate the final wood blocking heights with the insulation configuration to provide a uniform height around the perimeter of each roof – refer to Section 075200 – SBS MODIFIED BITUMEN ROOFING for additional information.

3. Install wood blocking at perimeter of window opening. Coordinate with Section 075200 – SBS MODIFIED BITUMEN ROOFING and Section 085000 – METAL WINDOWS.

4. Re-secure bottom layer of existing wood blocking at roof penetrations and roof perimeters locations where the existing wood blocking is designated to remain. Remove and replace any deteriorated wood blocking designated to remain.

5. Install wood curb extensions at rooftop mechanical vents and fan units as required to provide minimum 8-inch flashing height.

6. Remove designated existing steel mechanical unit supports. Fabricate and install new wood curb to support designated rooftop equipment. Coordinate with Section 075200 – SBS MODIFIED BITUMEN ROOFING for the installation of the insulation and vapor
7. Clean and restore all areas affected by the work.

1.4 SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

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, both before and after exposure to elevated temperatures when tested according to ASTM D 5516 and ASTM D 5664.

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. Contractor to provide site safety plan UMA’s EHS.

1.5 QUALITY ASSURANCE

A. Forest Certification: Provide rough carpentry produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC’s "Principles and Criteria for Forest Stewardship."

1.6 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber, plywood, and other panels; place spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

1.7 GUARANTEE

A. The Contractor shall supply the Owner with a minimum two-year workmanship warranty for their work. In the event any work related to this section is found to be defective within two years of substantial completion, the Contractor shall remove and replace such at no additional cost to the Owner.
PART 2 - PRODUCTS

2.1 DIMENSIONAL LUMBER

A. All dimensional lumber for roofs and walls shall be construction grade Douglas Fir, Hem-Fir or Southern Yellow Pine, formed to the dimensions shown on the Detail Drawings and as required for proper installation of the new work. All new exterior perimeter woodwork, nailers, and wood blocking used on the building shall be minimum 6-inch wide, except where otherwise detailed. Wood furring/blocking shall be permitted to be minimum 4-inch wide at expansion joints and wall locations.

B. All woodwork shall have a maximum moisture content of 19% by weight on a dry weight basis. Kiln drying may be required to conform to maximum 19% moisture content.

C. Pressure treated wood blocking/sleepers will only be permitted when wood furring or blocking is in direct contact with concrete, masonry, or exposed to the exterior.

D. Shims for roof edge blocking shall be continuous cedar of the size required to provide a sloped surface for the roof edge detail as shown in the Contract Drawings.

2.2 PLYWOOD

A. Plywood shall be APA Grade CD, Exterior, minimum 1/2" thick for wall systems, unless designated otherwise on the detail drawings. Pressure treated plywood will not be permitted.

2.3 MISCELLANEOUS LUMBER

A. General: Provide lumber for support or attachment of other construction, including the following:

1. Rooftop equipment bases and support curbs.
2. Blocking.

B. For items of dimension lumber size, provide Construction, Stud, or No. 2 grade lumber with 15 percent moisture content.

2.4 FASTENERS

A. In general, all fasteners, anchors, nails, straps and other accessories shall be of stainless steel, galvanized steel or fluorocarbon coated steel. Galvanizing shall be hot dip in accordance with ASTM A153 Specifications. Electro-galvanized items shall not be used.

B. Fasteners for securing wood blocking to wood blocking shall be galvanized annular threaded ring shank nails. Fasteners shall be of sufficient length to penetrate the receiving member 1-1/2" minimum, except full depth into plywood.
C. Fasteners for securing plywood to concrete or masonry surfaces shall be 1/4” diameter hammer drive anchors with zinc-alloy sheaths and stainless steel inserts as manufactured by Star Fasteners, Rawl, OMG or approved equal. Anchors shall be of sufficient length to penetrate the receiving substrate 1-1/4” minimum.

D. Fasteners for securing wood blocking to concrete deck substrates shall be one-piece fluorocarbon coated, ¼” diameter flat head anchors such as CD-10 by OMG, Rawl drives by the Rawl Plug Company or approved equal, with a minimum 1-1/2” embedment into the substrate.

E. Fasteners for securing wood blocking to concrete or brick masonry shall be 1/2” diameter stainless steel epoxy anchor bolts. Anchors shall be of sufficient length to penetrate the substrate 4-1/2” minimum. Anchors shall be Chem Stud Bolts as manufactured by the Rawl Plug Company, Parabond by Molly, Hit C-20 System by Hilti or approved equal. Revisions to anchor size and strength shall be as recommended by the window manufacturer.

F. Fasteners for securing to pressure treated wood blocking shall be stainless steel.

2.5 EPDM WALKWAY PADS

A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, solid-rubber, slip-resisting, surface-textured walkway pads or rolls approximately 3/16-inch thick, and acceptable to membrane roofing system manufacturer, as manufactured by Firestone Building Products, Carlisle SynTec Systems, Versico, or approved equal.

PART 3 - EXECUTION

3.1 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.

B. 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.

C. Apply field treatment complying with AWPA M4 to cut surfaces of preservative-treated lumber and plywood.

D. Securely attach carpentry work as indicated and according to applicable codes and recognized standards.

E. Countersink fastener heads on exposed carpentry work and fill holes with wood filler.

F. Use fasteners of appropriate type and length. Predrill members when necessary to avoid splitting wood.
3.2 REMOVAL OF WOOD BLOCKING

A. Remove and dispose of all deteriorated wood blocking and all blocking scheduled to be removed and replaced in accordance with the Contract Drawings and this Specification.

B. During removal and replacement of woodwork, the Contractor shall report to the Owner and Engineer any existing wood blocking designated to remain which is deteriorated or unsuitable. Do not cover unacceptable areas until reviewed by the Engineer, and provide temporary protection to the area in question. Existing blocking scheduled to remain shall be resecured with the appropriate fasteners spaced 24-inches on center to the existing roof deck or structure.

3.3 PERIMETER WOOD BLOCKING INSTALLATION

A. At roof perimeters, the wood blocking and plywood shall be installed as detailed. Provide 8-inch nominal wide blocking at roof perimeters unless otherwise detailed.

B. Existing wood blocking and curbs may be required to be cut back or trimmed to provide an even flush assembly as shown on the Detail Drawings. This shall be accomplished with power or hand tools. Should cutting of existing components reduce or eliminate securement of their components, the Contractor shall resecure with the appropriate fasteners.

3.4 WOOD BLOCKING INSTALLATION AT WINDOW OPENING

A. Coordinate the installation of new wood blocking at window openings with Section 085000 – METAL WINDOWS.

B. Install new wood blocking at the window sills, head conditions, and jambs with the approved fasteners to sound substrates. Wood blocking shall be installed level and plumb.

C. Notify UMA’s Project Manager if masonry substrate requires repairs prior to installing new wood blocking. Coordinate necessary repairs with Section 040120 – MASONRY RESTORATION.

3.5 FASTENING OF WOODWORK

A. All existing woodwork to be reused shall be resecured with the specified fasteners spaced 24-inches on center maximum.

B. Wood blocking to wood blocking connections shall be made using the specified fasteners spaced 12-inches on center maximum and staggered off the centerline of the woodwork being secured. Nails shall be of sufficient length to penetrate the receiving member 1-1/2” minimum.

C. Wood blocking shall be fastened directly to the roof deck and not to the brick masonry with the specified fasteners spaced 12-inches on center maximum, staggered off the centerline of the woodwork being secured. Predrilling of fastener holes shall be completed prior to installing fasteners.
D. Plywood shall be fastened to vertical concrete or masonry surfaces with the specified fasteners spaced 8-inches on center both vertically and horizontally.

3.6 CURB EXTENSIONS

A. Coordinate final roof flashing heights with Section 075200 – SBS MODIFIED BITUMEN ROOFING.

B. Coordinate temporary disconnection of existing rooftop mechanical units with Section 261000 – TEMPORARY MECHANICAL/ELECTRICAL DISCONNECTS.

C. New wood blocking shall be secured to the existing curb with approved fasteners.

3.7 WOOD CURB FABRICATION

A. Coordinate final roof flashing heights with Section 075200 – SBS MODIFIED BITUMEN ROOFING.

B. Coordinate temporary disconnection and shoring of existing rooftop mechanical units with UMA’s Project Manager and Section 261000 – TEMPORARY MECHANICAL/ELECTRICAL DISCONNECTS.

C. Remove and dispose of the existing steel angle supports/dunnage that supports the existing designated mechanical units.

D. The size overall length and width of the new wood curb shall be larger than the mechanical unit it will support. Refer to the Contract Drawings for additional information.

E. Construct the new wood curb to support the weight of the existing mechanical units with approved fasteners and secure to existing roof deck, while providing slope to the top of the curb. Provide wood joists at 16-inches on center perpendicular to the new unit support sleepers.

F. Coordinate with Section 076200 – SHEET METAL FLASHING AND TRIM to install new self-adhering modified bitumen underlayment and sheet metal cap flashing.

G. Adhere EPDM walkway pad over sheet metal cap flashing

H. Install wood sleeper over EPDM walkway pad and secure existing mechanical unit to wood sleeper. Secure new wood sleepers to curb with approved fasteners and cut-off sealant.

END OF SECTION
PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 1 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 024100 – Selective Demolition
B. Section 040120 – Masonry Restoration
C. Section 061000 – Rough Carpentry
D. Section 076200 – Sheet Metal Flashing and Trim
E. Section 085000 – Metal Windows
F. Section 223000 – Plumbing
G. Section 261000 – Temporary Mechanical/Electrical Disconnects

1.3 DESCRIPTION OF WORK

A. In general, the Contractor shall supply all labor, materials, equipment, temporary protection, tools and appliances necessary for the proper completion of the work in this Section, as required in the Specifications and in accordance with good construction practice. The work under this Section generally includes the following:

B. Supply all shoring and protection necessary to protect the building areas, building systems, and landscape areas.

C. Supply all necessary chutes, disposal facilities, transportation and labor necessary to dispose of all demolished materials, dirt, and debris off-site in a legal dumping area. The Contractor shall obtain all permits necessary to transport and dispose of all materials, rubbish and debris.

D. Remove existing SBS modified bitumen roof system components, including roof membrane and roof insulation, down to the surface of the existing roof deck where shown on the Contract Drawings. Note, it is the intent of these specifications to remove the existing roof system, in its entirety, down to the existing roof deck, which is to remain. For coordination reasons, the roof system will be removed by the roofing contractor to ensure a water tight roof system on a daily basis.

E. Perform concrete roof deck spall repairs. Contractor shall carry two (2) square feet of concrete spall repair in base bid.
F. Remove all existing base flashings. Remove other existing flashings such as unit curbs, as required to properly complete the work.

G. Clear roof surfaces of debris by sweeping and vacuuming methods as required to remove all debris from the roof deck surface.

H. Perform the installation of additional wood blocking to match the insulation height at the roof perimeter and at curbs; wood blocking shall be uniform around the entire perimeter of the roof areas, and shall match the insulation height. Note, due to potential coordination issues and temporary weather conditions, the roofing contractor shall be responsible for all wood blocking installation related to the roofing operations, as outlined in Section 061000 – ROUGH CARPENTRY. Review the final insulation height with the blocking configuration.

I. Remove, protect, and/or store all materials and assemblies designated to be reinstalled.

J. Install a vapor retarder, insulation, and coverboard systems atop the properly prepared roof decks.

K. Fabricate and install sheet metal edge and curb flashings; refer to section 076200 SHEET METAL FLASHING AND TRIM.

L. Install a SBS Modified Bitumen roofing membrane, flashing, sheet metal flashings, and associated components.

M. Coordinate the installation of the new roof drain components with Section 223000 – PLUMBING.

N. Coordinate the extension of all existing vent pipes with that of the plumbing Contractor. Coordinate with Section 223000 – PLUMBING.

O. Provide pourable sealer boxes where indicated on the Contract Drawings or install manufacturer’s approved fluid-applied flashings at no additional cost to the Owner.

P. Remove and replace the existing roof access hatch. Install a curb-mounted guardrail with gate system to new roof hatch’s curb.

Q. Install new fall arrest davit anchors at designated locations where indicated on the Contract Drawings. It is not the intent to use the new davit anchors for window washing purposes or for any maintenance on the building’s facades, only for initial tie-off to access the roof area and perform maintenance on the roof and the mechanical equipment. Coordinate access to the interior, as required, to secure the anchor system to the roof deck. Remove, store, and reinstall existing ceiling finishes.

R. Coordinate work with Section 040120 – MASONRY RESTORATION and Section 085000 – METAL WINDOWS.

S. Coordinate the coring of new hole(s) for relocating designated electrical conduits at roof top units with Section 261000 – TEMPORARY MECHANICAL/ELECTRICAL DISCONNECTS.

T. Provide extensions to the existing interior ladder access.
U. Complete all associated work.

V. Clean and restore all areas affected by the work.

1.4 JOB CONDITIONS

A. All surfaces to receive new insulation, membrane 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. No open flames shall be permitted on the roof at any time.

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

C. The Contractor will be required to investigate the underside of the existing roof decks within each day’s work location to identify potential under deck components which may be present and could affect the installation of the new roof system.

D. Roofing shall not be applied when ambient temperature is less than 40 degrees F unless approved in writing by the Engineer and membrane manufacturer.

E. Temporary waterstops shall be installed at the end of each day's work and shall be removed before proceeding with the next day's work. Waterstops shall be compatible with all materials and shall not emit dangerous or incompatible fumes. Waterstops must be installed to permit proper roof drainage. Waterstops shall not be installed to impede roof surface drainage.

F. Cover sidewall areas with canvas tarps where existing roof system is discarded into refuse containers via trash chutes. Plastic or "poly" tarps shall not be used at these locations.

G. All new and temporary construction, including equipment and accessories, shall be secured from wind damage or blow-off.

H. Equipment required to hoist materials to the roof and remove debris from the roof shall be supplied, maintained, and operated by the Contractor.

I. The Contractor shall provide protection for sitework, plantings, landscaping, building surfaces, and similar items to protect from damage. Items damaged as a result of the work in this section shall be repaired or replaced by the Contractor to the satisfaction of and at no additional cost to the Owner.

J. Any mechanical/electrical disconnects/reconnects required for this project to complete the roof renovations shall be performed by a licensed trades person.

K. The Contractor shall clean all debris which may infiltrate through the roof decking into the interior prior to demobilization from the site. This shall include, but not be limited to, floors, cabinets, and drop ceilings.

L. The Contractor shall notify the Owner at least 48 hours in advance of doing any interior demolition work so that the Owner may provide entry into required areas.
M. No removal, replacement, repair or covering of potentially deteriorated roof deck shall be performed without authorization from both the Designer and Owner.

N. The Contractor is cautioned to take all necessary precautions and make all investigations necessary to install the work. The Owner will not consider unfamiliarity with the job conditions as a basis for additional compensation.

1.5 PERFORMANCE REQUIREMENTS

A. General: Provide installed roofing membrane and base flashings that remain watertight; do not permit the passage of water; and resist specified uplift pressures, thermally induced movement, and exposure to weather without failure.

B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.

C. Roofing System Design: Roofing system shall be designed to withstand Code required loads and wind speeds.

D. Flashings: Provide base flashings, perimeter flashings, detail flashings and component materials that comply with requirements and recommendations in FMG 1-49 Loss Prevention Data Sheet for Perimeter Flashings; FMG 1-29 Loss Prevention Data Sheet for Above Deck Roof Components; NRCA Roofing and Waterproofing Manual (Fourth Edition) for Construction Details and SMACNA Architectural Sheet Metal Manual (Fifth Edition) for Construction Details, as applicable.

1.6 REFERENCES

A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

B. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

1. ANSI/ASSE Z359.1-2007 – Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components
2. ANSI/ASSE Z359.6-2009 – Specifications and Design Requirements for Active Fall Protection Systems

1.7 SUBMITTALS

A. Submittals shall be made in accordance with the General Conditions and Section 013300 - SUBMITTAL REQUIREMENTS.

B. Prior to the review of any roofing submittals, the Contractor must provide the following information on the proposed roof manufacturer’s company letter head and signed by a principal of the company:
1. Provide a listing of at least ten (10) projects which are greater than 10,000 square feet, and have been in services for at least seven (7) years in either the states of Massachusetts, New Hampshire, Maine, Vermont, Connecticut, or Rhode Island. The listing shall include the following:
   - Project Name
   - Project Location (City and State)
   - Project Contact Name
   - Project Contact Name’s Phone Number
   - Project Designer
   - Project Roof Installer
   - Project Area (in square feet)
   - Project Materials used (roofing ply types and application manor)
   - Project Warranty Duration
   - Year of installation (if less than seven (7) years, will be excluded from the project consideration)

C. A sample roofing system warrantee and letter of confirmation from the roof membrane manufacturer stating that the Contract Documents have been reviewed and that there are no exceptions to the Specifications and Contract Drawings shall be submitted.

D. A letter from the roofing manufacturer that the insulation system has been approved for this project.

E. A letter from the roofing manufacturer identifying the attachment rates and adhesive rates that are required to place the approved insulation system, and multi-ply roof membrane. Specific attention related to the field, perimeters and corners shall be provided in the letter to identify the securement pattern, and distance from the roof edge to meet their specific uplift requirements.

F. A letter from the roofing manufacturer outlining how the roof inspections will be performed in accordance with the specifications. Inspector resumes will be required at the submittal phase to confirm compliance with the specifications. Refer to the warranty section of this document for additional information.

G. The Contractor shall provide adequate staging and protection of the interior building as required to perform the work. Provide submittals for site protection and staging as specified in Section 013300 - SUBMITTAL REQUIREMENTS.

H. Shop Drawings: For roofing system. Include plans, elevations, sections, details in compliance with performance requirements, and attachments to other Work.
   1. Base flashings, cants, and membrane terminations.
   2. Tapered insulation, including slopes.
   3. Crickets, saddles, and tapered edge strips, including slopes.
   4. Insulation fastening patterns.

I. Qualification Data: For Installer and manufacturer.

J. Maintenance Data: For roofing system to include in maintenance manuals.
K. Inspection Report: Copy of roofing system manufacturer's inspection report of completed roofing installation.

L. Certification from a professional engineer that the new fail arrest anchors are intended to meet the 5000 psi fall rating requirements.

M. At the completion of the work, the testing agency’s certification that the new davits meet the fall arrest requirements.

N. Contractor to provide site safety plan UMA’s EHS.

1.8 WARRANTY

A. Roofing Contractor’s Warranty: The Contractor shall supply the Owner with a minimum (2) two-year workmanship warranty for their work. In the event any work related to the roofing, flashing, or metalwork is found to be defective within two years of substantial completion, the roofing contractor shall remove and replace such at no additional cost to the Owner. The roofing Contractor’s warranty obligation shall run directly to the building Owner, and a copy of the roofing signed warranty shall be sent to the roofing system’s manufacturer.

1. The duration of the Roofing Contractor’s (2) two-year warranty shall run concurrent with the roofing system’s manufacturer’s warranty.

B. Roofing Systems Manufacturer’s Warranty: The roofing manufacturer shall guarantee the roof assembly to be in a watertight condition, for a period of 20 years, from the date of final acceptance of the roofing system. The warranty shall be a 20-year no dollar limit, non-prorated total system labor and material warranty, for wind speeds up to 75 miles per hour. The total system warranty shall include all roofing materials, related components and accessories including, but not limited to the substrate board, vapor retarder, insulation board, cover board, roofing membrane, membrane flashings, fasteners, adhesives and termination metals and roof drain flashings. The manufacturer shall repair leaks and defects in materials and workmanship as promptly after observation as weather and site conditions permit.

C. It is the intent of these specifications to provide an FM Class 1-90 wind resistant roof system. The roofing installation and warranty requirements shall adhere to the manufacturer’s installation requirements to meet these specifications.

D. Roofing Systems Manufacturer’s Roof Inspections: The Owner has requested that the roofing system’s manufacturer provide a minimum of one (1) site visit per week, or as required to monitor the roof and flashing installations, during the construction duration to monitor the project operations, and provide comment on the activities that are taking place. The roof system’s manufacturer will be required to provide written reports for each field day noting the work conditions and acceptance of the work that was performed. This coverage shall include, but not be limited to, all material installations that will be covered under the manufacturer’s warranty requirements, including the perimeter edge metals. The inspector will be subject to approval, and may be one of the following:

1. A technical representative who is employed full time by the manufacturer
2. A Registered Roof Observer (RRO) as certified by RCI, Inc.
3. An employee under direct supervision of a Registered Roof Consultant (RRC) as certified by RCI, Inc.

E. Roofing Systems Manufacturer’s Warranty Coverage: As part of the warranty coverage, the Owner has requested that the roofing system manufacturer be required to provide the Owner with follow-up inspections during the service life of the roof to identify the conditions and provide recommendations related to repairs which may be required to maintain the roof cover. Warranty inspections shall be at the 2, 10, 15, and 19 year intervals. The Roofing System Manufacturer will be required to provide written confirmation that the warranty inspections will be provided as part of the Manufacturer’s warranty.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storage.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.

1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.

D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

PART 2 - PRODUCTS

2.1 SALAVAGED MATERIALS AND ITEMS

A. All building materials, equipment, and debris of whatever nature from the portions of the existing structure removed under this project and not designated to be reused or reinstalled shall become the property of the Contractor and legally disposed of off-site.

2.2 COLD-ADHERED SBS MODIFIED BITUMEN ROOFING

A. Roofing system shall be a three-ply modified bitumen cold applied system meeting the minimum reinforcing requirements of ASTM D 6163 such as the StressPly Plus FR/StressPly EUV FR system as manufactured by the Garland Company, Inc., the POWERply system manufactured by Tremco, or the Paradiene 20/30 system manufactured by Siplast. The two base plies shall be smooth surfaced Type 1, Grade S, and the color of the cap sheet shall be selected by UMA, granular surfaced Type 1, Grade G sheet, as supplied by the manufacturer.
B. Two-ply stripping and base flashing membrane shall consist of one ply of asphalt coated sheet and one ply of the roof membrane manufacturer's premium, granular surfaced, SBS modified bitumen membrane. The color of the granular sheet shall match that of the field of roof sheet. Thickness of modified bitumen membrane shall be not less than 90 mils. Sheet reinforcement shall be as supplied by the manufacturer, but at a minimum shall be glass fiber reinforced. Should the manufacturer have an approved liquid applied flashing system (color to match the granular sheet) or elastomeric flashing membrane which is compatible with the approved roof system, and part of their system warranty, these substitutions will be considered for this project at no additional cost to the Owner, and shop drawings will be required to show the representative changes.

2.3 ADHESIVES AND CEMENTS

A. Adhesive to adhere roof membrane base plies and cap sheet shall be FM approved to meet the intent of and provide the specified roofing system and shall be the manufacturer’s premium cold adhesive. All adhesives shall be solvent free.

B. Base-Ply Adhesive: Cold-process interply adhesive for base-ply sheets, shall be VOC compliant, UL and FM approved, asbestos-free, low-odor, spray-grade adhesive approved and warranted by the membrane manufacturer.

C. Cap-Sheet Adhesive: Modified-bitumen cap-sheet adhesive shall be VOC compliant, asbestos free, cold process adhesive approved and warranted by the membrane manufacturer.

D. Flashing adhesive for base flashings, reinforcing plies, and stripping shall be trowel grade adhesive for vertical surfaces conforming to ASTM D 4586, Type I or II, specifically manufactured for adhering modified bitumen sheets, as recommended by the roofing membrane manufacturer.

2.4 REINFORCED FLUID-APPLIED FLASHINGS

A. Reinforced liquid applied flashings shall consist of a multi-component, flexible resin with fleece or glass mat reinforcement, as manufactured and approved by the SBS Modified Bitumen roof manufacturer.

2.5 VAPOR RETARDER

A. Self-Adhering Sheet Vapor Retarder: ASTM D 1970, minimum 40-mil- thick film laminated to layer of rubberized asphalt adhesive; maximum permeance rating of 0.1 perm; cold-applied, with slip-resisting surface and release paper backing, or as required to meet the manufacturer’s warranty requirements.

B. Provide primer when recommended by vapor-retarder manufacturer.

2.6 SELF-ADHERED MEMBRANE FLASHING

A. Self-Adhering Modified Bitumen shall be a minimum 30-mil thick minimum with 4-mil, high-density polyethylene film and release paper backing formulated for high temperature installation in accordance with ASTM D 1970, such as Grace Ultra, as manufactured by WR Grace, Winterguard HT, as manufactured by CertainTeed, WIP 300 HT, as manufactured by Carlisle Products, or approved equal.
2.7 MEMBRANE SEPARATION LAYER
   A. Membrane separation layer shall consist of 5-pound red rosin paper.

2.8 MEMBRANE PROTECTION PAD
   A. Membrane protection pad shall be a homogeneous non-laminated, skid resistant, pad (3 feet wide minimum) with a ceramic granule surface as recommended by the roof system manufacturer.

2.9 INSULATION AND ACCESSORIES
   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. Flat Stock and tapered polyisocyanurate insulation shall be skinned with factory-applied fiberglass bituminous felt as manufactured by Celotex, Johns Manville, or as supplied by the membrane manufacturer as required to meet membrane manufacturer’s requirements.

      1. The polyisocyanurate insulation shall have an area weighted aged R-Value of 30 to meet the Long Term Thermal Resistance (LTTR) value in accordance with ASTM C518 and the 8th Edition Massachusetts State Building Code. Note that tapered insulation more than 1” above the thinnest spot is not allowed to be factored into the average insulation value. (Not including drain sump areas.)

      2. Tapered insulation shall be required to provide a minimum 1/4” per foot slope to drainage system; 1/2” minimum per foot at crickets, saddles, drain sumps (8’x8’), and around mechanical equipment.

      3. The polyisocyanurate insulation board shall conform to ASTM Specification C 1289, Type II, Class 1, Grade 2 (20 psi minimum).

      4. The polyisocyanurate insulation board size to be adhered directly over base sheets or the concrete roof deck shall be 4’ x 4’ square and of uniform dimension.

      5. Insulation fillers shall be of the thickness required to match surrounding insulation when step tapering tapered edge strips.

      6. Polyisocyanurate insulation shall be approved in writing by the insulation and membrane manufacturer that the methods of attachment are covered under the membrane manufacturer’s labor and material warranty. Copies of the written acceptance shall be forwarded to the Engineer.

   C. Wood fiberboard insulation for use as tapered edge strips:

      1. Fiberboard shall be high density, non-asphalt impregnated and conform to ASTM C208-72 Specifications.

      2. Tapered edge strips shall be 18” wide and 1-5/8” thick, tapering to a feathered edge.
3. Fiberboard insulation shall be approved in writing by the membrane manufacturer. A copy of the written acceptance shall be forwarded to the Engineer.

2.10 COVERBOARD

A. Coverboard shall be 1/2” minimum thick, gypsum-fiber, moisture resistant board such as Securock as manufactured by National Gypsum Products or approved equal as required by the roof manufacturer. The boards shall be a maximum of 4’ x 8’ in size and shall conform to ASTM E84. Boards shall be square with uniform thickness and dimensions. The board shall be approved in writing by the membrane manufacturer. A copy of the written acceptance shall be forwarded to the Engineer. Coverboard shall be adhered to insulation.

B. If approved by the manufacturer at no additional cost to the Owner, coverboard insulation shall be High Density polyisocyanurate coverboard. Coverboard shall be ½” minimum thick, glass mat faced high density polyisocyanurate insulation board as required by the roofing manufacturer. The boards shall be a maximum of 4’ x 8’ in size and approved in writing by the membrane manufacturer. Coverboard insulation shall conform to ASTM C1289 Type II specifications. Compressive strength shall be greater than 90 psi minimum in accordance with ASTM D 1621. Dimensional stability shall be less than 0.5% in accordance with ASTM D 2126. Water Absorption shall be 3.0% or less in accordance with ASTM C 209. Should the manufacturer require another form of cover board, specific to their warranty requirements, such as a moisture resistant gypsum product, it shall be submitted as part of their assembly letter, and at no additional cost to the Owner.

2.11 COLD ADHESIVE

A. Adhesive to adhere the insulation boards and coverboard systems shall be a two component, cold-process, asbestos free, low-rise polyurethane foam adhesive conforming to ASTM D276, D2556, D1875, D429, D816, D1876, D412. Adhesive shall meet the projects uplift rating and shall be approved in writing by the membrane manufacturer and included as part of the warranty coverage. Adhesive shall be I.S.O. stick as manufactured by Firestone, Insta-Stik Professional Roofing Adhesive as manufactured by Insta-Foam Products, Inc., Olybond by Olympic or an approved equal.

B. Water-based, quick drying, asphalt primer for metal flanges and masonry surfaces shall conform to ASTM D276, D562, D3278, D3960, and shall be as manufactured by Karnak, Bull Dog, Monsey or approved equal.

2.12 ACCESSORIES

A. All accessories, including but not limited to nails, screws and clips shall be copper, brass, stainless steel or galvanized steel and completely compatible with the surrounding metal to prevent galvanic reaction.

B. All flashing materials and accessories used to install the flashing membrane systems shall be of the same manufacturer as the sheet membrane. These materials include, but are not limited to, the following:

1. Surface cleaners and primers
2. Flashing mastic
3. Caulking and sealants.

C. Termination bars shall be 1/8" x 1" stainless steel (as required to prevent galvanic action with the flashings being secured) with pre-punched holes at 6" on center, or as required by the membrane manufacturer.

2.13 FASTENERS

A. In general, fasteners, straps and other hardware shall be copper, brass, stainless steel, galvanized steel or fluorocarbon coated steel. Galvanizing shall be hot dip in accordance with ASTM A153 specifications. Electro-galvanized items shall not be used.

B. All accessories, including, but not limited to nails, screws, clips, fastening strips, etc. shall be completely compatible with the material being fastened to prevent galvanic reaction and premature deterioration.

C. Nails for membrane termination shall be hot dip galvanized or stainless steel, large head annular ring roofing nails of sufficient length to penetrate the wood blocking 1-1/2" minimum.

D. Fasteners for terminating roof membrane and flashing at masonry substrates shall be minimum 1-1/2" long drive pins in zinc sheaths as manufactured by Star, Rawl or equal. Embedment into substrate shall be 1-1/4" minimum.

E. Nails for flashing securement at wood substrates shall be No. 12 Stubbs gauge, large head, threaded shank, stainless steel nails, of sufficient length for 1-1/4” embedment.

F. Fasteners for securing fan and vent unit covers and termination bars to existing wood construction shall be stainless steel hex head self-drilling screws. Use stainless steel capped EPDM washers of the next larger size than the existing fastener to re-secure existing fan unit covers.

2.14 POURABLE SEALER BOXES

A. Inorganic filler for pourable sealer pockets shall be a pre-mixed spray applied polyurethane foam such as Froth-Pak by Insta-Foam Products, Inc., as required by the membrane manufacturer for their appropriate warranty requirements, or an approved equal.

B. Pourable sealer for boxes shall be two part, fluid applied polyurethane based material of 100% solids as manufactured by the membrane manufacturer.

2.15 CONCRETE PATCHING COMPOUND

A. Repair mortar for concrete deck repairs shall be a polymer modified Portland cement based patch mortar. Mortar shall be fast-setting, non-sag material such as SikaQuick 1000 as manufactured by the Sika Corporation, 10-60 Rapid Mortar as manufactured by BASF, FastSet as manufactured by Quikrete, or approved equal.
2.16 ROOF ACCESS HATCH AND ACCESSORIES

A. Roof access hatch curb and cover shall be constructed of 11-gauge mil finished aluminum with factory welded corners and shall be 2'-9" by 3'-3" minimum. Curb shall be 12-inch minimum in height and formed with a 3-1/2" flange. Hardware shall be zinc plated and consist of heavy pintel hinges, compression spring operators enclosed in telescopic tubes, positive snap latch with turn handles, padlock hasps inside and thermoplastic rubber gaskets. Hatch shall be Type S as manufactured by Bilco, MEZZ-RHA as manufactured by A-Mezz Industrial Structures, Personnel series as manufactured by Babcock-Davis, or approved equal.

B. Curb mounted safety railing with gate shall be as manufactured by BlueWater manufacturing, Garlock Equipment Company, Kee Safety Ltd, SafePro Systems, or approved equal.

1. Finishes and colors of the safety rails shall be selected by the Owner.
2. Safety rails around the perimeter of the roof hatch shall incorporate the manufacturer’s approved gate, which is either self-supported, or operates on a wheeled support.

C. Provide steel extension to existing interior ladder access.

2.17 LADDER EXTENSIONS - WELDED CONNECTIONS

A. Welds exposed to view in the finished work shall be uniformly made and shall be ground smooth.

B. Welding rods and bare electrodes shall be selected in accordance with AWS specifications for the metal alloy to be welded.

C. Size and shape welds to develop the full design strength of the parts connected by welds and to transmit imposed stresses without permanent deformation or failure when subject to service loadings.

2.18 ROOF DRAIN MARKERS

A. Roof Drain Marker as manufactured by Roof Drain Marker Co., LLC, of West Bridgewater, MA as supplied by the approved drain bowl manufacturer, or approved equal. Drain dome-mounted vertical fiberglass flag marker secured in aluminum socket in turn secured with pre-punched aluminum bracket configured for through-bolting to roof drain dome, or approved equal.

1. Flag Marker: Pultruded fiber-reinforced polymer rod, ½-inch (12 mm) diameter by 48 inch (1219 mm) long, with reflective dual-colored reversible ends enabling marking of selected drains.
   a. Flexural Strength, minimum, ASTM D 790, 700,000 psi (689 MPa).

2. Marker Base: 1 by 1 by 4 inch (25 by 25 by 102 mm) extruded aluminum bar, ASTM B 209 (ASTM B 209M), with milled flag receiver, threaded flag set screw retainer, and threaded base.
3. Flag Bracket: 1 by 11 by 0.063 inch (25 by 25 by 1.60 mm) aluminum plate bracket, ASTM B 221 (ASTM B 221M).


2.19 COATINGS, PRIMERS, PAINTS

A. Coatings to be applied to properly prepared steel (SSPC SP -11) shall be a cold galvanizing compound with not less than 95% zinc content by weight in dry film such as Tnemec – ZRC 95, ZRC cold galvanizing compound, Sherwin Williams, Kurfee’s Coatings, Inc. or approved equal. Cold zinc compound coatings shall be brush applied to achieve a minimum 4 mil DFT.

2.20 ROOF DECK MOUNTED FALL ARREST ASSEMBLY AND ACCESSORIES

A. Fall arrest anchors shall meet OSHA regulations 1910.66 and extend a minimum of 12” above the finished roof system such as that manufactured and installed by Boston Anchor, American Anchor or approved equal.

B. The manufacturer’s recommended anchor plates and stainless steel 5/8” diameter A36 steel through bolts shall be provided. Refer to the Contract Drawings for additional requirements.

C. Plain washers for through bolts shall conform top ANSI Standard B18.22.1.

D. Non-shrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications. Compressive strength at 28 days shall be 5,000 psi.

PART 3 - EXECUTION

3.1 GENERAL WORKMANSHIP

A. Do not deliver to site or install any material or system that has not been approved. Materials installed without approval may be required to be removed.

B. The prepared roof deck surface must be dry, clean and smooth. All bituminous materials shall be removed prior to installing the new insulation. Provide dryers, if necessary, to dry deck surfaces prior to installing new work. Open flame devices shall not be used.

C. Comply with the manufacturer's written instructions and these Specifications for all renovations and associated work.

D. Flashings shall be installed along with the membrane to assure weathertight termination.

E. Partial or unmarked cans or rolls of materials cannot be used.

F. Handle materials to prevent damage to building components and project site areas.
G. Do not cut any material with a solvent or dilutant unless approved by the Designer in writing prior to use.

H. Keep covers tightly sealed on all canned and evaporative products to prevent premature curing.

I. Do not store rolls of felts, membrane or flashings on the roof without the written consent of the Designer.

J. The Contractor is cautioned to investigate all existing conditions and materials of construction. All replacement items, including but not limited to drain bowls, clamps, hangers, supports, strainers and caulking must be completely compatible and match the existing system.

K. All debris shall be transported to rubbish receptacles located in the storage areas shown on the Contract Drawings, by enclosed chute or crane and scaling bucket or other method acceptable to the Owner. Uncontrolled dropping of debris to ground level will not be permitted.

L. Follow all applicable local, state and federal requirements regarding construction of scaffolding and protection of the public safety for the work items included in this section. Specific reference should be made to OSHA Construction Safety Regulations. Provide warning lines, barricades, and similar items as required to restrict pedestrian access to hazardous areas. Job site safety shall be the Contractor's responsibility.

3.2 REMOVAL OF EXISTING SYSTEM

A. Remove all designated existing insulation, roof membrane, flashings, and edge metals down to the top surface of the roof deck. Sweep clean the exposed roof deck, and penetration surfaces. Notify the Designer of any areas of unsuitable roof deck or associated components.

B. Remove only as much existing roofing and flashings as can be replaced and made weathertight the same day with the new work. Arrange each day’s termination point to prevent interruption of rooftop drainage.

C. Clean deck surfaces using brooms, air spray or other means necessary to provide a clean, smooth, uniform deck.

D. Remove existing mechanical equipment in each days work area. Any item designated to remain shall be temporarily stored and reinstalled prior to the end of each days work. Coordinate storage locations with the Owner.

E. Repair any areas of damaged roof deck.

3.3 INSTALLATION OF FALL ARREST ASSEMBLY

A. Coordinate access to the interior of the building to install new davits and temporarily remove existing ceiling tile finishes to access the work, if required.

B. Provide interior dust protection within areas of the work.
C. Install anchors in locations as shown on drawings and / or specified herein. Drill holes into the concrete deck and/or beam. Anchors shall be positioned so that the base plate sit on the structural framework of the roof deck system.

D. Set base plate over non-shrink grout to create a level surface for the base plate.

E. Coordinate the installation of the roof flashings to provide a watertight detail.

3.4 CONCRETE DECK PREPARATION

A. Contractor shall include 5 square feet of concrete deck spall repair in their base bid.

B. Remove areas of spalled, cracked, loose, or otherwise unsuitable concrete from the existing roof deck or equipment supports. Contractor is required to “sound” all existing concrete surfaces to determine extent of potentially delaminated concrete. Define all repair areas with 1/4” deep saw cut. Undercut or “key” in spall repair edges on at least two opposite sides to mechanically retain the repair. Cuts shall not overlap at corners.

1. Using hand and electric power tools (15 lb. Maximum chipping hammers) remove all areas of deteriorated, delaminating, de-bonded, spalled, or otherwise damaged concrete from existing surfaces, as required to install the new work. Sound concrete areas adjacent to cracks to determine additional spall areas. Removal of deteriorated concrete and surface preparation shall be completed as recommended by the patching mortar manufacturer and as outlined within these specifications.

2. Undercut or “key” in spall repair edges on at least two opposite sides to mechanically retain the repair.

3. Prepare the surface of the existing concrete to receive the bonding agent and repair mortar. Provide a ½” minimum aggressive surface profile with fractured aggregate (ICRI-CSP 6 or heavier). Tool marks should be visible. Examine substrate for cracks and treat with specified crack repair procedure.

4. Do not apply spall repair material over corroded reinforcing. Notify Engineer if conditions are uncovered.

5. Completely remove all dust, grease, and other impurities via high-pressure water wash, combined with wire brushes, chipping, grinding, or other methods as required to achieve acceptable bonding surfaces. Dampen the existing surface area with clean potable water, to obtain saturated-surface-dry (SSD) conditions.

6. If corroded reinforcement or embedded structural steel is encountered during preparation, chip out concrete minimum ½” to maximum 1 ½” around steel. Clean exposed steel to SSPC-SP11 specifications and apply two (2) coats of Sika Armatec EpoCem 110 or approved equal, just prior to placement of the repair mortar to achieve a wet-on-wet application.

7. Apply coating/bonding agent to all substrate surfaces as recommended by the repair mortar manufacturer. Slurry scrub repair mortar into prepared damp substrates to achieve a wet-on-wet application.

8. Install repair mortar to properly prepared areas within a time period to achieve a “wet-on-wet” mortar application. Mix repair mortar in accordance with the material manufacturer’s instructions. At spall repairs with a depth greater than 1-1/2”, mix in 3/8” coarse aggregate as required by the mortar manufacturer. Utilize the manufacturer’s recommended mix rates. Extend profiling mortars in strict accordance with manufacturer’s directions.
9. Spall locations that exceed 1-1/2” depth shall have stainless steel drive pins installed into the substrate. Drive pins shall be spaced 8” on center, with a minimum of 2 pins per spall. Stainless steel wire or hot-dip galvanized wire shall be wrapped about the base prior to installation or shall be tied through the end of drive pins with through holes at the exposed end to act as a reinforcement line upon installation of the patching materials.

10. The concrete substrates require wetting with water to obtain SSD conditions prior to installing the bonding agent. Consult with the manufacturer’s instructions prior to initiating repairs.

11. Finish the repairs flush with the existing surfaces. Insure that the surface, texture, and profile is roughed and textured to match surrounding concrete and to achieve proper mechanical bond with the later applied coating primer. Do not feather edge repairs, but install in ¼” minimum applications, or as otherwise limited by each materials manufacturer’s limitations.

12. Clean uncured materials off of undesired areas with a moist sponge or cloth immediately after application.

13. Provide for proper cure of patch as recommended by the repair material manufacturer. At a minimum, curing shall consist of wet burlap placed over the repair area, continuously wetted to provide a constantly moist burlap and enclosed with polyethylene, duct taped to the adjacent surfaces. Curing materials shall remain in place for the minimum manufacturer’s specified time based upon surface and ambient temperatures and humidity.

3.5 VAPOR RETARDER INSTALLATION

A. Self-Adhering Sheet Vapor Retarder: Prime substrate if required by manufacturer. Install self-adhering sheet vapor retarder over area to receive vapor retarder, side, and end lapping each sheet a minimum of 3-1/2 inches and 6 inches, respectively. Seal laps by rolling.

B. Completely seal vapor retarder at side laps, end laps, terminations, obstructions, and penetrations to prevent air movement into roofing system.

3.6 INSTALLATION OF INSULATION SYSTEM

A. The multi-layer insulation system shall be installed on properly prepared, clean, dry surfaces. Finished system will be capable of achieving the project attachment requirements for installation of the specified assembly over the roof deck(s).

B. Allow moist deck sections to dry prior to application of roof insulation. Open flames are strictly prohibited from the roof areas. Ensure that deck surface and joints are clean of all debris and roofing materials.

C. Insulation boards shall be free of defects including but not limited to, broken corners, improperly adhered facers, excessive moisture, dimensional irregularities, and the like. Defective insulation boards shall be marked and immediately removed from the site.

D. In the event that the existing roof decks have anchor bolts or fasteners that extend above the main roof deck surface, all insulation boards shall be notched to allow for flat installation onto the roof deck.
E. Adhere the base layers of the flat stock and tapered insulation to the concrete roof decks using the specified and recommended adhesives, modified bitumen temporary roof membrane. Stagger all end joints to the middle of the long dimension of adjacent insulation boards and stagger insulation layer to layer. Refer to FM Data Sheet I-28 for insulation fastening pattern. Install the wood fiberboard tapered edge strips atop the properly installed insulation with the manufacturer’s approved adhesive rates.

F. Coordinate installation of the manufacturer's approved, modified bitumen temporary roof membrane, and adhere all remaining insulation boards as designated in this section.

G. Install base layers on structural decks and subsequent insulation layers in full applications of the manufacturer approved adhesive at the adhesive manufacturer’s application rate. Stagger joints of the insulation and fiberboard overlayment at the midpoint in the long dimension. Stagger joints between insulation layers 12-inches minimum. Gaps between boards shall not exceed 1/8 inch.

H. The minimum dimension on cut insulation boards shall be 12-inches with a minimum surface area of 2 square feet. Only full sized insulation boards shall be used at roof perimeters and corners.

I. Utilize tapered edge strips and fiberboard fillers at drain location. Step-taper the surrounding insulation system down to the drain bowl location. Provide maximum sumps in conjunction with the tapered insulation system.

J. Utilize tapered edge strips along curb units and large roof penetrations.

K. All insulation boards shall be installed tightly butted to adjacent insulation or wood blocking. If gaps greater than 1/8” exist between boards, the board shall be cut out and replaced.

L. Insulation boards set in cold-process adhesive shall immediately be "walked-in" to assure full embedment. Poorly adhered boards shall be removed and replaced at no additional cost to the Owner.

M. Ensure that boards are totally adhered prior to application of roof membrane.

   1. Adhesive bead spacing shall be 12” O.C. – Field; 6” O.C. – Perimeter; and 4” O.C. – Corners, minimum, unless designated otherwise by the manufacturer.

N. Install specified fiberboard cants at all rising wall locations.

3.7 COVERBOARD INSTALLATION

A. Install coverboard in cold adhesive applied in strict accordance with the adhesive manufacturer’s printed installation instructions to achieve the required warranty.

B. Install the coverboard and immediately “walk” the system into place to spread the adhesive for maximum contact. Stagger all end joints to the middle of the long dimension of adjacent boards, 24” minimum. Continue to “walk” the coverboard every 5 to 7 minutes until firm adhesion is achieved. Ballast the boards to prevent cupping. Redistribute ballast to ensure full bonding of the system.
C. Ensure that boards are totally adhered prior to application of roof membrane.

1. Adhesive bead spacing shall be 12” O.C. – Field; 6” O.C. – Perimeter; and 4” O.C. – Corners, minimum, unless designated otherwise by the manufacturer.

3.8 SBS MODIFIED BITUMEN MEMBRANE INSTALLATION

A. Condition surfaces to receive membrane with primer as recommended by membrane manufacturer. Do not prime more than can be covered by sheet installation in one day.

B. Over properly installed and prepared insulation surface, install a new 2-ply built-up cold process mineral surfaced membrane.

C. Starting at the low point, spray-apply or trowel a uniform coating of cold adhesive over the properly installed coverboard system at the rate of no less than 2.5 gal/100 s.f. or as required by the membrane manufacturer.

D. Sheets shall be laid parallel to the longest dimension of the tapered area to be roofed and/or perpendicular to the slope of the area. Application shall start at the low point of the area working to the high point. Laps shall be parallel to the slope of the short dimension of the tapered area and in no case shall laps buck the flow of water.

E. Use 12, 24, and 36” starter plies to start and finish roof membrane along roof edges and terminations. Place ply sheets to ensure water will flow over or parallel to; but never against exposed edges.

F. Embed 12” and 24” starter plies to start and finish roof membrane along roof edges and terminations. Overlap starter plies 21”. Place ply sheets to ensure water will flow over or parallel to; but never against exposed edges.

G. Lap-ply sheet ends 6”, minimum. Stagger end laps 6” minimum.

H. Apply cold process adhesive no more than 10’ ahead of each roll being embedded (less in cold weather). All plies shall be solidly coated with adhesive over the full width. Nowhere shall felt be allowed to contact another ply of felt.

I. Extend all base-plies to top edge of cant strips, across wood blocking and onto drain rims.

J. Broom all plies to ensure complete and continuous seal and contact between adhesive and ply sheets. Broom ends, edges and laps without wrinkles, fish mouths, or blisters. Reduce construction traffic on the plies until adhesives have fully cured.

K. Over properly-installed base ply-sheets, apply a uniform coating of cold adhesive at the rate of no less than 2.5 gal/100 s.f. or as required by the membrane manufacturer.

L. Inspect ply sheets application for defects. Cut wrinkles, creases, and fishmouths to relax the membrane. Apply a full width strip of base ply membrane over the defect in a full coating of cold adhesive and lapped a minimum of 3-inches beyond the cut. Unbonded lap seams of more than 1/2-inch wide shall be embedded in cold adhesive troweled under the unbonded membrane.
M. Repair of defects:

1. Installations or details noted as deficient during final inspection must be repaired and/or corrected by applicator within five (5) working days.
2. All job-related debris shall be completely removed from jobsite within five (5) days upon job completion.

N. All cap sheet laps are to be heat welded per the manufacturer’s requirements with respect to welded dimensions and temperature requirements. No open flames and/or torches permitted on project.

O. Apply the manufacturer’s granules over all adhesive bleed out and spills on the roof immediately.

P. Daily water stops/tie-ins

1. Provide temporary, waterproof, cut-offs at exposed edges of newly installed work and at incomplete flashing areas on a daily basis.
2. Remove loose debris from a minimum of 12-inches of the roof membrane adjacent to the installed work. Install a strip of base ply membrane wide enough to provide a minimum of 12-inches on the existing membrane and 6-inches on the new membrane into a full coating of cold adhesive.
3. Inspect all cut-offs for watertightness prior to leaving site and repair as needed. Remove all temporary cut-offs prior to starting subsequent new work.
4. At beginning of next day’s work remove temporary connection by cutting felts evenly along edge of existing roof system.
5. Comply with instructions and recommendations of the roof membrane materials manufacturers as amended by these specifications.

Q. No bare spots or wrinkles will be accepted. Cut and reset all fishmouths and patch with an additional ply.

R. When installing plies, do not use any rolls with frayed edges, oval shaped rolls, or similar defects that inhibit embedment.

3.9 MODIFIED REINFORCING PLY INSTALLATION

A. Reinforcing plies at base flashings, metal flanges, and other detailed areas shall be set in a full, uniform bed of SBS modified bitumen adhesive applied by trowel or brush at a minimum rate of coverage of 75 square per gallon for wood and metal and 50 square feet per gallon for concrete and masonry unless recommended otherwise by the membrane manufacturer.
B. Reinforcing plies for horizontal metal flange applications shall be strips of base ply membrane cut wide enough to provide full coverage of the flange and 6-inches onto the membrane base plies. Working lengths of strips shall be 10-12 feet. Embed end of strip in wet adhesive by applying pressure with dry trowel, working toward metal flange and opposite end of strip. Ensure that membrane is solidly set in adhesive with no voids. Provide 3-inch laps at end of strips and stagger laps a minimum of 4-inches from base ply laps.

C. Reinforcing plies for base flashings at walls curbs and other vertical applications shall be full width sections of base ply membrane cut to lengths sufficient to provide full coverage to the top of the vertical element, across the cant, and 6-inches onto the horizontal surface of the base plies. Embed the sheet in wet adhesive by applying pressure with a dry trowel at the top of the cant and working toward the top of the wall or curb. Starting again at the top of the cant, apply pressure with the trowel working across the face of the cant and toward the horizontal surface of the base plies and embed the lower portion of the sheet. Ensure that membrane is solidly set in adhesive with no voids or bridging at the cant. Provide 3-inch laps and stagger laps a minimum of 4-inches from base ply laps. Provide an additional reinforcing strip at vertical corners lapped 3-inches onto each vertical side and 3-inches onto horizontal base plies.

3.10 GRANULE SURFACE CAP INSTALLATION

A. Verify that all repairs have been made to defects in the base plies and reinforcing plies and surfaces are free of sawdust, dirt, insulation debris and other contaminants prior to starting application.

B. Cap sheets shall be laid parallel to the base ply sheets starting at the low point of the area and working to the high point. Unroll dry membrane and allow it to relax. Offset cap sheet laps a minimum of 12-inches from base ply laps. Provide 3-inch side laps and 6-inch end laps, and stagger end laps of adjacent cap sheets by 24-inches. Align the granulated side of the sheet over the selvedge side of the adjacent sheet. While maintaining alignment, re-roll approximately one-half of the dry membrane sheet.

C. Apply a full application of adhesive at the manufacturer’s recommended application rate in front of the rolled membrane. Unroll and embed membrane into the adhesive. Apply even pressure with stiff bristle broom directly behind roll to ensure full adhesion within two (2) inches of side and end laps. All modified bitumen cap sheet laps/seams are to be sealed/mated using hot-air welding equipment to provide a highly attractive, aesthetically-pleasing, and watertight condition throughout.

D. Membrane sheets shall be applied free of wrinkles, creases, fishmouths, or voids. Maintain alignment of sheets utilizing marked lap lines. Should the lap lines become misaligned while unrolling, cut the sheet and establish a new end lap. Do not attempt to realign a partially adhered membrane roll.

E. Inspect cap sheet application for defects. Cut wrinkles, creases, and fishmouths to relax the membrane. Apply a full width strip of cap sheet membrane over the defect in a full bed of cold adhesive and lapped a minimum of 6-inches beyond the cut. Un-bonded lap seams of more than ½-inch wide shall be embedded in cold adhesive troweled under the un-bonded membrane. Reapply granules to repairs as needed.
3.11 INSTALLATION OF BASE FLASHINGS

A. Verify that all repairs have been made to the cap sheet in the area adjacent to the cant which is to receive the flashing sheet. Snap a chalk line a distance of 4-inches minimum from the edge of the reinforcing ply and on the field side of the roof.

B. Base flashings must extend at least 8-inches above the finished roof membrane surface and 3-inches minimum above the bottom of the counter flashings.

C. Pre-cut flashing sheet to useable lengths (not more than 8 feet) and lay flat on roof surface (to "relax" rolled surfaces) for 1/2-hour minimum.

D. Coat the area to receive flashing with a smooth, uniform trowel coating of the specified adhesive/roof cement. Coat the back side of the first ply sheet with a continuous application of flashing adhesive and set in place with a "dry trowel" to assure total uniform embedment. Lap flashing sheet past cant and onto roof membrane at least 6-inches. Make side laps in the sheets 3-inches minimum, and stagger side laps 24-inches minimum, ply to ply.

E. Coat installed ply sheet with a uniform trowel coat of flashing adhesive. Coat the back side of the top ply with flashing adhesive and press firmly in place with a "dry trowel" to assure total uniform embedment. Lap flashing sheet past cant and onto roof membrane at least 10-inches, (at least 4-inches past the flashing sheet underneath). Make side laps in the sheets 3-inches minimum, and stagger side laps 24-inches minimum, ply to ply.

F. Fasten base flashing sheets along the top of the flashings and on vertical side laps 4-inches on center with specified fasteners. Keep side lap fasteners at least 4-inches above the top of the cant. Cover end laps and side laps for entire length with two plies of 6-inch wide, asphalt-saturated fiberglass mesh set in flashing adhesive.

NOTE: The manufacturer's approved alternative flashings will be considered for this project at no additional cost to the Owner; provide shop drawings as requested.

3.12 INSTALLATION OF STRIPPING PLIES

A. Strip in metal flanges and lead drain flashings as detailed. Stripping shall be continuous over the entire flange or lead flashing, and extend onto the roof membrane.

B. Both layers of stripping shall be set in a uniform troweling of the specified adhesive and carried onto the roof membrane (6-inches for first layer, 10-inches for second layer).

C. Metal flashing flanges shall be treated with a brush coat of water-based asphaltic primer (both sides) and set in a full bed of flashing cement prior to stripping felt application.

D. Prior to stripping application, install one ply of 6-inch wide, asphalt-saturated fiberglass mesh over primed sheet metal flanges in a full application of adhesive. Extend mesh onto roof surface 3-inches. Press mesh in place firmly with a trowel.
E. Apply a full trowel coating of the specified adhesive to the flange, mesh fabric and roof surfaces. Coat the backside of the first ply of stripping with a continuous application of flashing adhesive and set in place with a “dry-trowel” to assure total uniform embedment. Lap stripping sheet past flange and onto roof membrane at least 6-inches. Make side laps in the sheets 3-inches minimum, and stagger side laps 24-inches minimum, ply to ply.

F. Coat the felt strip previously installed and the back of the second ply of stripping with flashing adhesive and press firmly in place with a “dry trowel” to assure total uniform embedment. Lap flashing sheet past flange and onto roof membrane at least 10-inches, (at least 4-inches past the flashing sheet underneath). Make side laps in the sheets 3-inches minimum, and stagger side laps 24-inches minimum, ply to ply.

NOTE: The manufacturer's approved alternative flashings will be considered for this project at no additional cost to the Owner; provide shop drawings as required.

3.13 REPAIR OF DEFECTS

A. Installations or details noted as deficient during final inspection must be repaired and/or corrected by applicator within five (5) working days.

B. All job-related debris shall be completely removed from jobsite within five (5) days upon job completion.

3.14 ROOF DRAIN FLASHING

A. All roof drains shall be flashed by coating the entire sump with a full, 1/8” thick trowel application of roof cement.

B. Center the lead sheet over the drain bowl and embed the sheet into the roof cement by tamping with a rubber mallet.

C. Apply membrane flashings as previously described.

D. Extend stripping from within the clamping ring past the limits of the lead sheet by 6” minimum.

E. Apply the second ply of stripping to extend past the bottom ply 4” minimum.

F. Allow the lead sheet and felt stripping to extend inside the clamping ring by 1” minimum install clamping ring.

G. Clean drain lines from roof deck to the point the leader pipe exists the building. Notify Designer/Owner in advance to observe cleaning operations.

3.15 SHEET METAL FLASHINGS

A. Refer to Section 076200 – SHEET METAL FLASHING AND TRIM.

3.16 INSTALLATION OF NEW ROOF HATCH

A. Remove existing roof access hatch and associated components.
B. Coordinate with Section 061000 – ROUGH CARPENTRY for installing of new wood blocking on top of the existing concrete curb.

C. Coordinate with Section 076200 – SHEET METAL FLASHING AND TRIM for the new interior sheet metal enclosure flashing.

D. Install new roof access hatch in accordance with the manufacturer’s printed instructions.

E. Flash hatch curbs as previously described in this Section and as shown on the Detail Drawings.

F. Secure top edge of flashing membrane with compressible foam backer rod as detailed.

G. Install new curb-mounted safety railing with gate to curb of new roof access hatch.

3.17 INTERIOR LADDER EXTENSIONS

A. Prepare the existing ladder limits to receive the new extension.

B. Match the size, and configuration of the existing ladder to provide a smooth transition. Ladder rungs shall be spaced consistently with that of the lower rung spacing.

C. The top rung of the extension shall be at, or slightly higher than, that of the new walking surface, coordinate the height with the tapered insulation system.

D. Coordinate welding operations with UMA’s Project Manager and acquire the required permits.

3.18 DISCONNECTION/REINSTALLATION OF EQUIPMENT

A. Disconnect and extend existing mechanical systems, ductwork and electrical conduits as required to maintain a minimum 8-inch flashing height. All disconnects and reconnects shall be performed by licensed tradesmen. Coordinate with Section 261000 – TEMPORARY MECHANICAL/ELECTRICAL DISCONNECTS.

B. Existing rooftop units removed from curbs for installation of roofing and flashing membranes shall be reinstalled to the curb with the next largest fastener through the existing holes. Utilize stainless steel capped EPDM washers at all fastener locations.

3.19 POURABLE SEALER BOXES

A. Coordinate with Section 076200 – SHEET METAL FLASHING AND TRIM for the fabrication of the new pourable sealer boxes and sheet metal caps.

B. Pourable sealer pockets shall be filled with pourable elastomeric sealer and tooled along the top surface to shed water. Pockets shall extend 8” minimum above the roof surface.

C. Inorganic fillers may be used to provide a sealant depth of 2” minimum. See Detail Drawings.

SBS MODIFIED BITUMEN ROOFING
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3.20 INSTALLATION OF WALKWAY PAD

A. Install membrane manufacturer’s protection mat on the roof surface where indicated on the Contract Drawings. Typical locations include around rooftop mechanical units, and below sleepers. Avoid installing walkway pads within 15’-0” of roof perimeter and/or fall hazard (greater than 30”), unless otherwise directed by Owner. The Contractor shall carry an additional fifty (50) linear feet of walkway pads, to be placed in a pattern approved by the Owner once the roof installation is complete.

B. Embed the mat in full applications of cold asphalt adhesive over bituminous built-up roof membranes. “Step in” each piece to ensure adequate adhesion. Walkway pad shall be installed in accordance with the roofing manufacturer’s requirements.

3.21 ROOF DRAIN MARKERS

A. Examine roof drain dome conditions to verify secure attachment to drain base and compatible alignment with roof drain marker mounting bracket.

B. Install roof drain markers on each roof drain dome in roof area indicated. Install in accordance with manufacturer's instructions.

C. Attach bracket to drain dome using manufacturer-furnished corrosion-resistant fasteners, securely tightened.

D. Thread marker base to threaded stud on marker bracket and tighten securely.

E. Insert flag marker into marker base and secure using set screw.

3.22 FIELD QUALITY CONTROL

A. Cooperate with field quality control personnel. Allow inspectors access to scaffolding and work areas, as needed to perform inspections.

B. Additional inspections and retesting of materials which fail to comply with specified material and installation requirements shall be performed at Contractor's expense.

C. Final Roof Inspection: Engage roofing system manufacturer's technical personnel to inspect roofing installation on completion and submit report to Designer.

   1. Notify Designer and the UMA Project Manager 48 hours in advance of date and time of inspection.

D. Repair or remove and replace components of membrane roofing system where test results or inspections indicate that they do not comply with specified requirements.
3.23 CLEAN-UP

A. All floor, site and adjacent areas, both interior and exterior, damaged or stained by the installation of the roofing work shall be repaired and cleaned of all dust, debris and any other materials to the Owner’s satisfaction.

B. The Contractor shall not demobilize the site until the completed work is toured by the Owner and Engineer. Any unsatisfactory items observed will be reported in “punch-list” form. These items shall be corrected immediately by the Contractor prior to demobilization from the job site. Final payment will not be made until all punch list items are complete and guarantees have been received.

C. All scaffolding, barriers, temporary facilities and the like shall be removed upon completion of the work. Areas damaged as a result of the Contractors equipment shall be restored to their original condition, all to the satisfaction of the Owner.

3.24 COMPLETION

All Guarantees, as required in Part 1 of this Section and other Sections shall be submitted for approval prior to final payment.

END OF SECTION 075200
PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 024100 – Selective Demolition
B. Section 040120 – Masonry Restoration
C. Section 061000 – Rough Carpentry
D. Section 075200 – SBS Modified Bitumen Roofing
E. Section 085000 – Metal Windows
F. Section 261000 – Temporary Mechanical/Electrical Disconnect

1.3 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. Supply all necessary chutes, disposal facilities, transportation and labor necessary to dispose of all demolished materials, dirt, and debris off-site in a legal dumping area. The Contractor shall obtain all permits necessary to transport and dispose of all materials, rubbish, and debris.

2. Provide all necessary underlayment, miscellaneous flashing, attachment clips, and closure members to ensure a weathertight installation.

3. Install new pre-fabricated metal fascia roof system with sheet metal fascia extension piece as shown on the Contract Drawings. Coordinate with Section 075200 – SBS MODIFIED BITUMEN ROOFING.

4. Install new sheet metal throughwall masonry flashing. Coordinate work with Section 040120 – MASONRY RESTORATION.

5. Install new sheet metal flashings and trim as shown on the Contract Drawings, and as required to properly terminate the membrane.


7. Install skirt flashings around roof top equipment/units.
8. Install blind nailers at all vertical roof membrane and sheet metal termination locations.

9. Install 2-piece sheet metal closure caps at pourable sealer box locations.

10. Install a sheet metal enclosure trim at the roof hatch location to conceal the wood blocking, as shown on the Contract Drawings. Coordinate with Section 061000 – ROUGH CARPENTRY and Section 075200 – SBS MODIFIED BITUMEN ROOFING for final roof system thickness.

11. Complete all associated work.

12. Clean and restore all areas affected by the work.

1.4 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 Wind Zone 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.

1.5 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. 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.

C. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below:

   1. Sheet Metal Flashing: 12 inches long. Include fasteners, cleats, clips, closures, and other attachments.
   2. Trim: 12 inches long. Include fasteners and other exposed accessories.
   3. Accessories: Full-size Sample.

D. Contractor to provide site safety plan UMA’s EHS.

1.6 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. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01.

   1. Meet with the UMA’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, 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.

1.7 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.

1.8 COORDINATION

A. Coordinate installation of sheet metal flashing and trim with interfacing and adjoining construction to provide a leak proof, secure, and noncorrosive installation.
1.9 WARRANTY AND GUARANTEE

A. Upon completion of the work, and prior to final payment, the Contractor shall submit a Guarantee of his work to be free from defect in materials and workmanship. This Guarantee shall be for a period of two (2) years, and shall be signed by a Principal of the Contractor’s firm, and sealed if a corporation.

B. Finish Warranty – 20 years for aluminum sheets.

PART 2 - PRODUCTS

2.1 SHEET METALS

A. Tin-Zinc alloy coated copper shall be cold rolled sheet copper conforming to ASTM B-101-78, 16 oz., and 20 oz. Tin-Zinc coating shall be applied by hot dip process to achieve a coating approximately 0.5 mils thick. Sheet length shall be 8’ maximum.

B. Aluminum shall be 0.032”, 0.040”, and 0.050” thick Kynar 500 Fluoropolymer painted aluminum as shown on the Contract Drawings. Color(s) to be selected by the Owner. Aluminum shall have a mill finish for concealed items. Aluminum shall be 3003 alloy, H-14 temper.

C. Pre-fabricated Metal Fascia System: Two piece "snap-on" pre-formed, architectural metal edge system. Contractor-shop fabricated metal will NOT be accepted for the perimeters of the roofs. Edge metal shall include:

1. Tested per ANSI/SPRI ES-1 Standard to a design pressure of 290 lbs/ft² to comply with the International Building Code.
2. Factory Mutual 1-645 approved for wind up lift protection.

D. Stainless steel shall be AISI 18-8 Type 304, 2D finish. Sheet length shall be 8’ maximum.

E. All accessories, including but not limited to nails, screws and clips shall be stainless steel or galvanized steel and completely compatible with the surrounding metal to prevent galvanic reaction. Galvanizing shall be per ASTM A153-09.

F. Termination bars shall be 1/8” x 1” stainless steel or aluminum bar (as required to prevent galvanic action with the flashings being secured) with pre-punched holes at 6” on center, or as required by the membrane manufacturer.

G. Clamps shall be screw adjustable stainless steel hose clamps with a minimum 3/8” band width.

H. Rivets shall be 3/16” diameter copper or stainless steel as required by the metal being secured.

I. Sheet metal flashings shall be shop fabricated. All breaks, bends and hems shall be uniform, clean, straight lines.

1. All aluminum joints shall be adequately overlapped, back-sealed, and riveted.
2. Flanges shall be 4” wide minimum.
3. Drip edges shall be hemmed 3/4” wide and break at a 30° angle.
4. Clips shall be 2" wide.
5. All flanges to be covered with roofing or flashing membranes shall have a 1/4" minimum hem on the edge.
6. All sheet metal joints shall have 6” wide cover and backer plates.
7. Blind nailers shall be 4” wide, folded to 2” wide final dimension.
8. Fascia reveals shall not exceed 8". Fascia requiring a greater vertical face than 8” shall be fabricated as a two-piece system with each face of equal exposure.
9. Maintain equal fascia height around entire perimeter of each roof area and where fascia abuts.

2.2 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation.

B. Solder for Stainless Steel: ASTM B 32, Grade Sn60, with acid flux of type recommended by stainless-steel sheet manufacturer.

C. Sealing Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealing tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape.

D. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

E. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.

F. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.


H. Mastic for back-sealing sheet metal against non-metal substrates shall be as recommended by the underlayment manufacturer. Concealed sealant for back-sealing metal-to-metal connections shall be single-component, butyl (polyisobutylene) rubber sealant, heavy bodied for joints with limited movement.

I. Self-Adhering Modified Bitumen shall be a minimum 30-mil thick minimum with 4-mil, high-density polyethylene film and release paper backing formulated for high temperature installation in accordance with ASTM D 1970, such as Grace Ultra, as manufactured by WR Grace, Winterguard HT, as manufactured by CertainTeed, WIP 300 HT, as manufactured by Carlisle Products, or approved equal.

J. Red Rosin paper (separation layer) shall be 5 pound kraft paper.
2.3 FABRICATION SCHEDULE

A. Note, similar flashing components have been listed under multiple metal fabrications type and thicknesses. The Contractor shall coordinate the use of compatible metals to prevent galvanic corrosion, and coordinate painted finish components at visible locations.

1. 16 oz. Tin-Zinc Copper
   a. Vent Pipe Flashing
   b. Pourable Sealer Boxes
   c. Pourable Sealer Covers

2. 0.032” Coated Aluminum
   a. Skirt Flashing
   b. Backer Plates
   c. Cover Plates
   d. Blind Nailer

3. 0.040” Thick Coated Aluminum
   a. Lower Fascia Piece
   b. Interior enclosure flashing at roof hatch
   c. 2-inch Wide Clips

4. 0.050” Thick Coated, or Mill Finished Aluminum
   a. Continuous Hook Strips

5. 22 Gauge Stainless Steel
   a. Masonry Throughwall Flashing
   b. Window Sill Pan Flashing
   c. Counterflashing at Masonry Throughwall Flashing
   d. 2-inch Wide Clips

6. 24 Gauge Stainless Steel
   a. Storm Hood / Rain Collars
   b. Equipment Curb Caps
   c. Blind Nailer

2.4 FASTENERS

A. In general, fasteners, straps and other hardware shall be copper, brass, stainless steel or hot-dip galvanized steel. Galvanizing shall be per ASTM A 153 specifications. Electro-galvanizing will not be accepted.

B. Fasteners for securement of flashings and hook strips to concrete or masonry shall be 1/4” diameter hammer drive anchors with zinc sheaths and flat heads such as Zamac Nailins by Rawl, Star Fasteners, Unifast, or approved equal. Anchors shall be of sufficient length to penetrate the substrate 1-1/4” minimum.

C. Sheet metal to wood blocking connections and mechanical unit securement (exposed securement): Self-drilling, self-tapping, Number 10, stainless steel hex-head screws, 1-1/2-inch long, equipped with metal capped EPDM washers.
D. Nails for flashing securement at wood substrates shall be No. 12 Stubbs gauge, large head, threaded shank, copper or galvanized steel nails minimum 1" long.

E. Fastens for securement of the pre-engineered edge metal shall be recommended by the manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions and other conditions affecting performance of work.

1. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.

1. Torch cutting of sheet metal flashing and trim is not permitted.

B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by fabricator or manufacturers of dissimilar metals.

1. Coat side of stainless-steel sheet metal flashing and trim with bituminous coating where flashing and trim will contact wood, ferrous metal, or cementitious construction.
2. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip-sheet or install a course of polyethylene underlayment.

C. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.

D. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and elastomeric sealant.

E. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

1. Space cleats not more than 12 inches apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.
F. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used, or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with elastomeric sealant concealed within joints.

G. Fasteners: Use fasteners of sizes that will penetrate substrate not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws.
   1. Galvanized or Prepainted, Metallic-Coated Steel: Use stainless-steel fasteners.
   2. Aluminum: Use aluminum or stainless steel fasteners.

H. Seal joints with elastomeric sealant as required for watertight construction.
   1. Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is moderate, between 40 and 70 deg F set joint members for 50 percent movement either way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F.
   2. Prepare joints and apply sealants to comply with requirements in Section 079200 - JOINT SEALANTS.

I. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pretin edges of sheets to be soldered to a width of 1-1/2 inches except where pretinned surface would show in finished Work.
   1. Do not solder aluminum sheet.
   2. Stainless-Steel Soldering: Pretin edges of uncoated sheets to be soldered using solder recommended for stainless steel and phosphoric acid flux. Promptly wash off acid flux residue from metal after soldering.
   3. Do not use open-flame torches for soldering. Heat surfaces to receive solder and flow solder into joints. Fill joints completely. Completely remove flux and spatter from exposed surfaces.

J. Aluminum Flashing: Rivet or weld joints in uncoated aluminum where necessary for strength.

3.3 ROOF FLASHING INSTALLATION

A. General: Install sheet metal roof flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight.

B. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending a minimum of 4 inches over base flashing. Install stainless steel draw band and tighten.
C. Counterflashing: Coordinate installation of counterflashing with installation of base flashing. Insert counterflashing in reglets or receivers and fit tightly to base flashing. Extend counterflashing 4 inches over base flashing. Lap counterflashing joints a minimum of 4 inches and bed with elastomeric sealant.


D. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Install flashing as follows:

1. Seal with elastomeric sealant and clamp flashing to pipes penetrating roof except for flashing on vent piping.

3.4 PRE-MANUFACTURED EDGE METALS

A. Confirm that the roof membrane extends down, beyond the transition of the wood blocking as shown on the contract drawings.

B. Should the new pre-formed metal edge not provide a minimum of 1-1/2” coverage over the transition beyond the wood blocking, a two-piece flashing system, of equal dimension, shall be installed around the perimeter of the roof edge to provide a uniform height. Hook strips shall be secured at 3-inches on center, staggered about the center line. Backer plates shall be installed between each seam. The fascia metal shall extend a minimum of two inches below the pre-manufactured metal.

C. Install a sacrificial piece of roof membrane between the finished roof edge membrane, and the sheet metal hook strip. The membrane shall be sealed to both the finished roof surface, and the metal hook strip to prevent water infiltration under the detail.

D. Secure the hook strip per the manufacturer’s recommendations. Confirm a uniform, level reveal around the perimeter of the building.

E. Where the edge metal meets a rising wall, coordinate the installation of a blind nailer at these locations to terminate the roofing system.

3.5 SKIRT FLASHINGS

A. Fabricate skirt flashings to the configurations shown on the Contract Drawings.

B. Insert flashings beneath new counterflashings or skirt flashings as detailed. Overlap adjacent sections a minimum of 3”.

C. Secure wall flashing skirt flashing with clips at 12-inches on center and a minimum of two per section. All fasteners shall be concealed.
3.6 COUNTERFLASHINGS

A. Fabricate new counterflashings and receivers to the dimensions and shapes where shown in the Contract Drawings and as specified herein.

B. Secure counterflashings with clips where indicated. Fabricate and secure clips as previously specified.

3.7 BLIND NAILERS

A. Fabricate and install blind nailer with a 2” minimum leg inserted behind membrane. Fasten flashing through leg of blind nailer.

B. Fold blind nailer to 2” wide final dimension with 1/2” hemmed edge over fastener.

C. Provide continuous beads of sealant at back and leading edges.

3.8 CONTINUOUS CLEATS AND HOOK STRIPS

A. Form continuous cleats/hook strips with ¾-inch kicks, bent out at a 30° angle to the face or wall. Height of continuous cleats/hook strips shall be as indicated on the Detail Drawings.

B. Secure continuous cleats/hook strips to wood blocking with the specified fasteners spaced at 6-inches on center.

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

3.9 SECUREMENT CLIPS

A. Secure clips to substrate with the specified fasteners at minimum 6 inches on center, or as indicated on the Detail Drawings.

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

3.10 POURABLE SEALER BOXES

A. Fabricate and install pourable sealer boxes as shown on the contract drawings, and referenced in this section, Section 061000 – ROUGH CARPENTRY and Section 075200 – SBS MODIFIED BITUMEN ROOFING.

B. The seams of the sheet metal flashing shall be soldered to provide a water tight detail, and where practical, shall extend eight inches above the finished roof surface.

C. Seal the lower limits of the penetration prior to the application of the pourable sealer.
D. Install two (2) – piece sheet metal cap over the pourable sealer box once the sealer has set, and final applications to top of the unit off are compete to shed water; caps are intended to protect the sealer from exposure of ultraviolet rays; secure to prevent wind displacement.

3.11 ENCLOSURE SHEET METAL AT ROOF HATCH OPENING

A. Coordinate with Section 061000 – ROUGH CARPENTRY and Section 075200 – SBS MODIFIED BITUMEN ROOFING for new roof system thickness and final height of wood blocking.

B. Install new sheet metal enclosure trim over the wood blocking, turning down the interior surface of the wood blocking and concealing the wood blocking. Secure enclosure sheet metal to the interior face of the hatch opening with a continuous “Z”-profiled cleat prior to the installation of the new roof hatch.

C. Color to be selected by Owner.

3.12 MECHANICAL CURB FLASHING CAP

A. Coordinate with Section 061000 – ROUGH CARPENTRY and Section 075200 – SBS MODIFIED BITUMEN ROOFING for new curb construction, final heights, and detailing.

B. Install new self-adhering high temperature modified bitumen underlayment over new wood curb and overlap onto new SBS Modified Bitumen roof flashings.

C. Install new sheet metal hooks strips along perimeter of curb and secure with approved fasteners spaced 4-inches on center.

D. Install new sheet metal flashing cap to each designated new curb and secure with hook strips.

3.13 THROUGHWALL FLASHING INSTALLATION

A. Coordinate with Section 040120 – MASONRY RESTORATION and as it pertains to removing the temporary masonry shoring to install the new sheet metal throughwall flashing.

B. Fabricate new flashing and extend rear leg of flashing 3-inches minimum up the back of the wall or as shown on the Contract Drawings. Secure the rear leg of the flashing to the back-up masonry wall with the specified fasteners and termination bar. Provide a full bead of sealant behind the flashing.

C. Form the flashing to shed water. Provide 2-inch high end dams at limits of throughwall flashings. Provide completely watertight seams and overlaps. Rivet and solder end dam connections. End dams shall finish 2-inch high minimum.

D. Overlap adjacent sections of flashing to be soldered 3-inches minimum. Rivet overlaps and completely envelope rivets in solder.
E. Provide the finished profile for the exposed portion of the flashing as shown on the Contract Drawings.

3.14 WINDOW SILL FLASHING INSTALLATION

A. Coordinate with Section 085000 – METAL WINDOWS and Section 040120 – MASONRY RESTORATION.

B. All flashings shall be shop fabricated. All bends, breaks and hems shall be clean straight lines. Form flashings to the shapes and configurations shown on the Contract Drawings. Coordinate and align new window sill flashing with the new throughwall masonry flashing.

C. All sill flashings shall turn up 1-inch minimum at the backs and 3-inch minimum at end limits. Sill flashings shall run continuously across existing sills neatly trimmed and turned up at jamb locations. All seams shall be sealed and overlapped 3-inch minimum. Set flashings in a full bed of sealant. Install full bead of sealant between window frame and rear leg of flashing and between flashing and attachment angle.

D. File any exposed, sharp edges of sheet metal and coat with finish paint to match the window frames.

3.15 CLEANING AND PROTECTION

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean and neutralize flux materials. Clean off excess solder and sealants.

C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain in a clean condition during construction.

D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION
SECTION 085000
METAL WINDOWS

PART 1 - GENERAL

1.1 GENERAL PROVISIONS
A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 RELATED WORK SPECIFIED ELSEWHERE
A. Section 024100 – Selective Demolition
B. Section 040120 – Masonry Restoration
C. Section 061000 – Rough Carpentry
D. Section 075200 – SBS Modified Bitumen Roofing
E. Section 076200 – Sheet Metal Flashing and Trim

1.3 DESCRIPTION OF WORK
A. In general, the Contractor shall supply all labor, materials, equipment, temporary protection, tools and appliances necessary for the proper completion of the work in this section, as required in the specifications and in accordance with good construction practice.
B. Coordinate work within this Section with all other associated trades to perform work in an orderly fashion and to minimize temporary supports and weather protection. Coordinate with Section
C. Remove existing designated wood windows and associated components at designated locations. The existing window perimeter sealants and glazing putty are suspect to contain asbestos containing materials (ACM) and shall be removed as such.
D. Install wood blocking and interior wood trim as required to prepare the openings for the new windows with Section 061000 – ROUGH CARPENTRY for wood blocking.
E. Install composite trim and brick molding to match existing profile at head and jamb of windows.
F. Install new metal flashings, trim, and sealants at window openings with Section 076200 – SHEET METAL FLASHING AND TRIM, Section 075200 – SBS MODIFIED BITUMEN ROOFING, and Section 040120 – MASONRY RESTORATION.
G. Install metal anchors, angles, and clips to properly support and anchor the new assemblies.
H. Install new metal windows, in properly prepared openings at designated locations.
I. Install heavy duty vandal resistant screens at designated windows to be removed. Contractor to coordinate placement of security handle and operating unit to verify proper operation.

J. Remove and replace interior wood trim at windows designated to be removed and replaced. Paint new finished carpentry.

K. Touchup adjacent interior concrete/concrete block masonry substrates affected by the work.

L. Remove, store, and reinstall existing window blinds at each window designated to be removed.

M. Clean and restore all areas affected by the work to the satisfaction of the Owner.

1.4 SPECIAL PROJECT CONDITIONS

A. The existing window perimeter sealants and glazing putty are suspect to contain asbestos containing materials (ACM) and shall be removed as such. The Contractor shall comply with the National Emission Standard for Hazardous Air Pollutants (NESHAP) regulation published in the Federal Register under 40 CFR part 61, sub-part M. Specific attention is directed to Appendix A of this regulation entitled, Interpretive Rule Governing Roof Removal Operations. In addition to these regulations, the Contractor shall comply with OSHA Regulation (29 CFR Parts 1910 et al - Occupational Exposure to Asbestos; Final Rule) and all other State and Local guidelines regarding asbestos-containing material removal and disposal.

B. The Massachusetts Department of Environmental Protection has developed a revised asbestos regulation (310 CMR 7.15 (11), June 2014) that addresses the work practices for the removal and disposal of non-friable asbestos-containing window glazing and/or caulking in a manner different from the normal requirements for abatement of other types of asbestos containing materials (310 CMR 7.15 (7)). The policy is valid if the window glazing/caulk materials are removed, handled, and disposed without any visible emissions into the ambient air.

C. The Contractor will be required to notify the Department of Environmental Protection (DEP) of asbestos removal at the site a minimum of ten (10) working days prior to performing the removal operations. Copies of this notification must be submitted to the Owner and Engineer, and posted at the site, prior to performing any work.

D. The Contractor shall follow UMA’s requirements and provide at a minimum, unless otherwise required by UMA, a detailed asbestos containing material removal, handling, and disposal plan. In addition, the Contractor shall submit the following items with their submittal package, unless otherwise required by UMA:
   1. Waste Shipment Record (WSR)
   2. Leak tight container and label Information
   3. Sample OSHA approved transport vehicle signage.
   4. Description and/or manufacturer’s literature for roof cutting machine modifications.
   5. The completed WSR which includes the name of the full-time NESHAP certified supervisor/foreman and a copy of his/her current certification.
1.5 PERFORMANCE REQUIREMENTS

A. General: Provide aluminum windows capable of complying with performance requirements indicated, based on testing manufacturer's windows that are representative of those specified and that are of test size indicated below:


B. AAMA/NWWDA Performance Requirements: Provide aluminum windows of the performance class and grade indicated that comply with AAMA/NWWDA/CSA 101/I.S.2/A440.

1. Performance Class: Architectural Grade CW.
2. Performance Grade: Minimum for performance class indicated.
3. Exception to AAMA/NWWDA/CSA 101/I.S.2/A440: In addition to requirements for performance class and performance grade, design glass framing system to limit lateral deflections of glass edges to less than 1/175 of glass-edge length or 3/4 inch whichever is less, at design pressure based on the following:

C. Structural Performance: Provide aluminum windows capable of withstanding the following, including wind loads based on passing AAMA/NWWDA/CSA 101/I.S.2/A440, Uniform Load Structural Test, at basic wind speed indicated and as required by Code:

1. Deflection: Design glass framing system to limit lateral deflections of glass edges to less than 1/175 of glass-edge length or 3/4 inch, whichever is less, at design pressure based on structural computations.
2. Wind Loads: minimum 35 psf wind load in accordance with the Massachusetts State Building Code.

D. Air Infiltration Test (operable units): With the vent in a closed and locked position, the window shall be subjected to an air infiltration test in accordance with ASTM E 283. Air infiltration shall not exceed .25cfm/ft when tested at a pressure of 6.24 psf.

E. Water Resistance Test: The glazed unit shall be mounted in its vertical position continuously supported around perimeter. The window unit shall be subjected to a water resistance test in accordance with ASTM E 331 and E547. When a static pressure of 12 pounds per square foot has been stabilized, five gallons of water per square foot of window area shall be applied to the exterior face of the unit for a period of 15 minutes. No water shall pass the interior face of the window frame and there shall be no leakage as defined in the test method.

F. Condensation-Resistance Factor (CRF): Provide aluminum windows tested for thermal performance according to AAMA 1503, showing a CRF of 62 where windows are indicated to be "thermally improved."

G. "U" Value Tests (Co-efficient of Heat Transfer): Thermal Transmittance of Conduction with a 15 mph perpendicular dynamic wind: 0.33 BTU/hr/ft²/F.

H. Solar Heat-Gain Coefficient: Provide aluminum windows with a whole-window SHGC maximum as required by Code, determined according to NFRC 200 procedures. Submit proof of compliance with submittals as specified.
I. Thermal Movements: Provide aluminum windows, including anchorage, that accommodate thermal movements of units resulting from the following maximum change (range) in ambient and surface temperatures without buckling, distortion, opening of joints, failure of joint sealants, damaging loads and stresses on glazing and connections, and other detrimental effects. Base engineering calculation on actual surface temperatures of materials due to solar heat gain and nighttime-sky heat loss.

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

1.6 SUBMITTALS

A. Product Data: Include construction details, material descriptions, fabrication methods, dimensions of individual components and profiles, hardware, finishes, and operating instructions for each type of aluminum window indicated.

B. Shop Drawings: Include plans, elevations, sections, details, hardware, attachments to other Work, operational clearances, and the following:

1. Mullion details, including reinforcement and stiffeners.
2. Joinery details.
3. Flashing and drainage details.
5. Thermal-break details.
7. Window cleaning provisions.
8. Window System Operators: Show locations, mounting, and details for installing operator components and controls.
9. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer licensed in the Commonwealth of Massachusetts and responsible for their preparation and used to determine the following:
   a. Structural test pressures and design pressures from basic wind speeds indicated.
   b. Deflection limitations of glass framing systems.
10. All costs for professional engineering shall be included in the bid price for the Work of this Section.

C. Qualification Data: For Installer, professional engineer and testing agency.

D. Product Certified Test Reports: Based on evaluation of comprehensive tests performed within the last four years by a qualified testing agency, for each type, grade, and size of aluminum window. Test results based on use of downsized test units will not be accepted.

E. Performance Reports: Based on systems, components and glazing methods proposed for use on this Project, proof that windows as glazed for this Project meet or exceed Code requirements for the following:

1. U-value.
2. Solar heat-gain coefficient.
F. Maintenance Data: For operable window sash, operating hardware, weather stripping, and finishes to include in maintenance manuals.

G. Submit color samples for metal windows and associated components.

H. Window manufacturer’s installation instruction manual.

I. Contractor to provide site safety plan UMA’s EHS.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: An installer acceptable to aluminum window manufacturer for installation of units required for this Project. Experienced and skilled specialty workers to install the work. Experienced trade workers shall be utilized for all aspects of the work.

B. Engineering Responsibility: Preparation of Shop Drawings, design calculations, and other structural data by a qualified professional engineer.

C. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in the Commonwealth of Massachusetts and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of windows that are similar to those indicated for this Project in material, design, and extent.

D. Source Limitations: Obtain aluminum windows through one source from a single manufacturer.

E. Product Options: Information on Drawings and in Specifications establishes requirements for aluminum windows' aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or more methods including preconstruction testing, field testing, and in-service performance.

F. Fenestration Standard: Comply with AAMA/NWWDA/CSA 101/I.S.2/A440, "Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors," for minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.

1. Provide AAMA certified aluminum windows with an attached label.

G. Glazing Publications: Comply with published recommendations of glass manufacturers and GANA's "Glazing Manual" unless more stringent requirements are indicated.

H. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 01. Review methods and procedures related to aluminum windows including, but not limited to, the following:

1. Inspect and discuss condition of substrate and other preparatory work performed by other trades.
2. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
3. Review required testing and inspecting procedures.

1.8 PROJECT CONDITIONS

A. Field Measurements: Verify aluminum window openings by field measurements before fabrication and indicate measurements on Shop Drawings.
   1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish opening dimensions and proceed with fabricating aluminum windows without field measurements. Coordinate wall construction to ensure that actual opening dimensions correspond to established dimensions.

B. The Contractor shall be responsible for securing and protecting their equipment, materials, and tools, as well as partially completed construction, from vandalism or abuse.

C. The Contractor, their workers, all their suppliers and agents shall make every effort to work in harmony with the building occupants.

1.9 ROOF PROTECTION

A. The roof systems are required to be totally protected in the window replacement work areas by installing a layer of rigid board insulation followed by a layer of plywood. Plywood shall be adequately ballasted to prevent wind uplift of the plywood and roof system. The Contractor is responsible for any damages to the existing or new roof systems.

B. The Contractor is responsible for the prompt repair of any damage to the roof systems resulting from the work at the project at no additional cost to the Owner.

C. Window replacement work to be performed after the masonry repairs and roof replacement.

1.10 WARRANTY

A. Upon completion of the work and prior to final payment, all applicable manufacturer’s guarantees for window frames and hardware including warranties and guarantees shall be provided.

B. Special Warranty: Manufacturer's warranty in which manufacturer agrees to repair or replace aluminum windows that fail in materials or workmanship within specified warranty period. Defective components will be repaired or replaced by the Manufacturer at no cost to the Owner. Failures include, but are not limited to, the following:
   1. Failure to meet performance requirements.
   2. Structural failures including excessive deflection.
   3. Water leakage, air infiltration, or condensation.
   4. Faulty operation of movable sash and hardware.
   5. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
6. Insulting glass failure.

C. Window Manufacturer’s Warranty Period: Ten years from date of Substantial Completion.

D. Warranty Period for Metal Finishes: Ten years from date of Substantial Completion.

E. Warranty Period for Insulated Glazing: Ten years from date of Substantial Completion.

F. The Contractor shall supply the Owner with a minimum two-year workmanship warranty for their work. In the event any work related to this section is found to be defective within two-years of substantial completion, the Contractor shall remove and replace such at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Aluminum Windows:
   b. Custom Window Company.
   c. EFCO, a Pella Company.
   d. Graham Architectural Products Corp.
   e. Kawneer North America.
   f. Mannix; a Division of Interstate Window Corp.
   g. Peerless Products, Inc.
   h. Wausau.

2.2 ALUMINUM FRAME AND SASH

A. Aluminum: Shall be extruded 6063-T5 alloy with a minimum thickness of .125-inch at the sill and a minimum frame depth of 4-inches.

2.3 GLAZING

A. Glass shall be sized to meet a 35 psf load in accordance with the Massachusetts State Building Code and AAMA/NWWDA 101/1.S.2-97. Projected and fixed window units shall be factory glazed. Glass shall conform to the following: (Refer to Contract Drawings for specific glass type locations).

1. Annealed glass shall be clear, ¼” thick conforming to ASTM Specification C1036-85 Quality Q3 (glazing select). Glass shall have a pyrolitically applied low E coating on the number 3 surface.
2. Tinted glass shall be ¼” thick heat strengthened in accordance with ASTM C1048 Kind HS and conforming to ANSI Z 97.1 specifications. Glass performance shall be Light Transmittance 42%, shading coefficient .46. Color shall be Grey.
   a. Manufacturers: Glass shall be Pilkington/Libbey-Owens-Ford, or PPG, Oldcastle, or approved equal.

B. Insulated glass units shall be comprised of the specified glass for a total thickness of 1". Insulated glass units shall be hermetically sealed and shall be IGCC-CBA rated and certified. IGCC number shall appear on the spacer of the insulated glass unit. All insulated glass units shall conform to ASTM E774-88 Class CBA Specifications.
   1. Total thickness: 1” with ½” air space
   2. Air space: Argon filled
   3. Spacer: Spacer shall be constructed of a non-thermal bridging material.
   4. U-Value (summer): .33 maximum or as required by the manufacturer to achieve desired assembly u-factor.
   5. SHGC: .40
   6. Shading Coefficient: .71
   7. Primary Seal: Compressed polyisobutylene
   8. Secondary Seal: Silicone

2.4 HARDWARE

A. All hardware component parts shall be heavy duty.

B. Single hung units shall have metal cast, cam-type sweep locks, 2 per window.

C. Balances shall conform to the following requirements:
   1. Balances shall be of appropriate size and capacity to hold sash in position with no movement.
   2. Balances shall be high performance sash balances that are tested in accordance with AAMA 902.92 Voluntary Specification for sash balances.
   3. Balances shall meet all minimum Class 5 requirements with a minimum .30 Manually Applied Force ratio (MAF).
   4. Compliance to 902.92, Class 5 and MAF ratio shall be verified by a test report from an AAMA accredited laboratory.
   5. Class 5 balances shall not have strings and/or pulleys.

2.5 WINDOW ACCESSORIES

A. Two-piece attachment angles shall be continuous 6063-T5 extruded aluminum, .125-inch thick minimum. Pre-punched holes 12-inches on center shall be provided in the attachment angles to permit fastening to windows and substrates. Attachment angle cover plates shall be finished with a baked enamel paint to match the window frames.

B. Thermally broken sub-sills at designated window sills shall be continuous 6063-T5 extruded aluminum with self-contained thermal breaks and finished to match the windows.
C. Limit Stops: There shall be an adjustable limit stop at all operable windows. Once window manufacturer has been approved, the Contractor must present the limit stop operation to the Owner for review. The Owner shall approve a limit stop height prior to the Contractor ordering the windows.

D. Vandal Resistant screens for installation at designated window units shall be heavy duty vandal-resistant security screens with powder coated .023 stainless steel mesh retained in aluminum frames and as manufactured by the window manufacturer.

E. Insulation to fill voids in windows, and entrance frames and to fill voids in construction shall be extruded polystyrene conforming to ASTM C578, with a 0.1% maximum absorption volume conforming to ASTM C272.

F. Shims for window installation shall be inorganic (plastic).

2.6 FASTENERS

A. All screws, nuts, washers, bolts, rivets and other miscellaneous fastening devices incorporated in the project shall be of stainless steel except where noted below. Fasteners shall be as follows:

1. Aluminum to aluminum fasteners shall be self-drilling, self-tapping screws, No. 14 of sufficient length to penetrate the receiving substrate by 5/8”.
2. Aluminum to wood fasteners shall be wood screws, No. 14, of sufficient length to penetrate the receiving substrate by 1-3/4”.
3. Fasteners for securing aluminum and wood blocking to concrete and masonry shall be Hex head type, 1/4” diameter, self-tapping masonry screws. Shank shall be of sufficient length to penetrate substrate 2” minimum.

2.7 FABRICATION

A. General: Fabricate aluminum windows, in sizes indicated, that comply with AAMA/NWWDA/CSA 101/1.S.2/A440 for performance class and performance grade indicated. Include a complete system for assembling components and anchoring windows.

B. Thermally Improved Construction: Fabricate aluminum windows with an integral, concealed, low-conductance thermal barrier; located between exterior materials and window members exposed on interior side; in a manner that eliminates direct metal-to-metal contact.

C. Weather Stripping: Provide full-perimeter weather stripping for each operable sash and ventilator.

D. Weep Holes: Provide concealed weep holes and internal passages to conduct infiltrating water to exterior.

2.8 FINISHES

A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Finish for all exposed metal parts of new aluminum windows and entrance (frames, sash, vents and trim) shall be a Resin-Based Coating- Hylar 5000, or Kynar 500. Paint dry film thickness shall be not less than 1.0 mils +/- 0.2 mils. Surface preparation and coating shall conform to AAMA 2605 Specifications.

C. Colors shall be selected from the manufacturer’s standard color chart by the Owner.

2.9 SEALANTS AND ACCESSORIES

A. Exterior sealant for use as primary weather seal, unless otherwise recommended by the system manufacturer, shall be a one-part, neutral-cure, non-staining, silicone sealant conforming to ASTM C 920, Type S, Grade NS, Class 50, Uses NT, M, G, A and O such as:

1. SPECTREM 3 by Tremco;
2. DOW CORNING 795 by Dow Corning;
3. SIKASIL-WS295 by Sika Corporation;
4. Or Approved Equal.

B. Interior caulking shall be one-part, odorless, neutral cure silicone compound as manufactured by Tremco, PRC, Pecora, or approved equal.

C. Color(s) shall be selected by the Owner from the approved manufacturer's premium color chart.

D. Cleaners and primers shall be as recommended by the manufacturer of the caulking.

E. Bond breaker tape shall be self-adhesive polyethylene tape as recommended by the sealant manufacturer.

F. Backer rod shall be continuous length, closed cell polyethylene foam, as recommended by the sealant manufacturer. Backer rod shall be compressible, resilient, non-waxing, non-extruding and non-staining. Backer rod shall be of sufficient size to be compressed 30% of maximum joint width and shall be totally compatible with the sealant, primer and substrates. Backers shall conform to the requirements of ASTM C 962 - Type A, ASTM D 1622, ASTM D 1623 and ASTM D 5249 such as Green Rod by Nomaco, Sonofoam by Sonneborn, ITP soft type backer rod or approved equal.

G. Masking material shall be commercially available masking tape of appropriate width or other material recommended by the sealant manufacturer. Self-adhesive masking materials shall be of low tack and completely strippable, leaving no adhesive residue behind when removed.

H. Reticulated foam shall be UV resistant, compressible open cell polyether polyurethane foam with nominal 30PPI +/- 5 pores per inch, as manufactured by H-O Products Corporation, All Foam Products Company, The Foam Factory, or approved equal.
I. Modified bitumen underlayment shall be a butyl rubber based, self-adhering underlayment such as Grace Ultra, as manufactured by W.R. Grace Construction Products, Flintlastic SA, as manufactured by CertainTeed, or approved equal. Modified bitumen shall be high temperature products for use under sheet metal. Mastic and primer shall be as approved by the membrane manufacturer. Temporary UV protection and corner fillets shall be as recommended by the membrane manufacturer.

2.10 SALVAGED MATERIALS AND ITEMS

A. Existing Window Blinds/Shades:
   
   1. The Contractor shall carefully remove, store, and reinstall the existing window blinds and shades. Modifications to the attachment of the existing window blinds and shades shall be provided and performed by the Contractor as part of the work at no additional cost to the Owner.

2.11 FINISH CARPENTRY

A. All dimensional lumber for finished carpentry shall be formed to the approximate dimensions shown on the Detail Drawings and as required for proper installation of the new work.

B. All woodwork shall have a maximum moisture content of 19% by weight on a dry weight basis. Kiln drying may be required to conform to maximum 19% moisture content.

C. Finished carpentry shall be secured to wood blocking with finish nails.

2.12 COMPOSITE LUMBER/TRIM

A. Composite lumber shall be a mixture of wood, plastic and resin, capable of self-supporting itself, such as that manufactured by Azek Building Products, Timber Tech, FiberSpan, or approved equal. Color of the material shall be selected by the Owner, and is intended to compliment that of the new metal work to be installed.

B. Material shall be free foam cellular PVC material with small-cell microstructure and density of .55 grams/cm3.

C. Glue all joints with cellular PVC cement adhesive recommended by the manufacturer.

D. Minimum thickness for the trim boards shall be 3/4-inch.

E. Fasteners for securing PVC composite trim into wood components shall be a concealed fastening system with integral PVC plugs such as Cortex by Fastenmaster, or approved equal.
2.13 PAINT – FINISHED CARPENTRY

A. All paint materials shall be products of a recognized reliable manufacturer and shall be of the best quality and professional grade (1st line) for each type and shall be specific for the material to be coated. All paint materials shall be lead free. Coatings shall consist of a minimum of one primer coat and two finish coats. Color(s) shall be selected by Owner. Acceptable manufacturers are:

1. Benjamin Moore.
2. PPG Industries.
3. Sherwin Williams
4. Approved equal.

PART 3 - EXECUTION

3.1 WINDOW REMOVAL

A. The Contractor shall not remove the existing designated windows or components until the Contractor has met the satisfaction of UMA and their requirements for abatement procedures.

B. Coordinate work with Section 040120 – MASONRY RESTORATION and Section 075200 – SBS MODIFIED BITUMEN ROOFING and other trades.

C. The Contractor shall coordinate and submit a window removal plan to UMA’s Project Manager for approval, including, but not limited to, temporary weather and access protection, and the duration of temporary conditions for the window opening.

3.2 EXAMINATION

A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances; rough opening dimensions; levelness of sill plate; coordination with wall flashings, vapor retarders, and other built-in components; operational clearances; and other conditions affecting performance of work.

1. Masonry Surfaces: Visibly dry and free of excess mortar, sand, and other construction debris.
2. Metal Surfaces: Dry; clean; free of grease, oil, dirt, rust, corrosion, and welding slag; without sharp edges or offsets at joints.
3. No open flames of any kind will be permitted onsite at any time.

B. Do not deliver to site or install any material or system, which has not been reviewed and accepted for use on the project.

C. All work shall be made weathertight and the building secure at the end of each day.

D. Report any damaged or unsuitable areas to the Engineer or Owner’s representative immediately.

E. Do not cut any material with a solvent or dilutant unless approved by the Engineer in writing.
F. Keep covers tightly sealed on all canned and evaporative products to prevent premature curing.

G. Clean the demolished surface of all loose debris. Contractor shall provide a smooth even surface for the installation of the new systems and panel.

H. The Contractor shall install all window systems plumb, level and true to the lines and dimensions of the existing wall.

I. Proceed with installation only after unsatisfactory conditions have been corrected.

J. Provide roof protection and other means necessary to avoid damage to the existing or new roof system.

3.3 WOOD BLOCKING INSTALLATION

A. Coordinate the installation of new wood blocking with Section 061000 – ROUGH CARPENTRY.

B. Install perimeter backer rod and sealant back seals at all cavity and masonry joint locations. Back seal shall be continuous and full width or height of the opening.

C. Prior to installing flashings, install wood blocking and shims necessary for the proper installation of the flashings and windows. Wood blocking and shims shall be beveled and/or chamfered as required to provide solid support and to match existing conditions.

3.4 MEMBRANE FLASHING INSTALLATION

A. Coordinate the installation of the new sheet metal flashings with Section 076200 – SHEET METAL FLASHING AND TRIM and other trades.

B. Verify that all structural reinforcements have been made to each opening and have been approved by the Owner and/or Engineer.

C. Install self-adhered high temperature resistant modified bitumen membrane flashings to all properly prepared window openings prior to installation of new windows.

D. Refer to manufacturer’s installation requirements and use primer on approved substrates.

3.5 WINDOW INSTALLATION

A. General: Comply with manufacturer's written instructions for installing windows, hardware, accessories, and other components; Drawings; and Shop Drawings.

B. It is the intent of these specifications to have all glazing factory installed into the window units.

C. Installation: Compress insulation into the voids of the window frames. Windows and panels shall be installed without forcing or distortion, so sills and heads are level, and jambs are plumb. Frame shall be securely anchored into the supporting construction. Joints between metal windows and metal members, including mullions, shall be set in mastic of the type recommended by the
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window manufacturer to provide completely watertight joints. Excess mastic shall be removed before hardening. After installation, each window shall be checked for proper operation and adjusted as necessary to provide proper operation. Metal surfaces shall be cleaned and any staining or discoloring of the finish shall be restored or the unit replaced. Glass shall be clean at the time of installation.

D. Secure anchor system to the window frames and substrates with the specified fasteners spaced 12-inches on center. Attachment angles for securement of windows shall be continuous across heads, jambs and sills. Provide sealant at all fastener locations and attachment covers.

E. Where attachment angles are not used set windows with two-piece receptors at the head and jamb. Utilize attachment angles at the sill. Where both receptors and attachment clips are shown, clips are used for decorative purposes.

F. Provide full beads of sealant between rear leg of pan flashing and attachment angle and between attachment angle and window frame.

G. Install continuous aluminum cover strips to all attachment angles. Cut ends shall finish smooth and square with lightly filed corners to remove sharp edges.

H. Set limit stops for all operable units to the limits specified in Section 2.

3.6 SEALANT INSTALLATION

A. Install sealant at both interior and exterior perimeters of new windows, where shown on the Contract Drawings and as required for the proper completion of the work.

B. Clean and prime substrates in strict accordance with sealant manufacturer’s requirements.

C. Precondition sealants to a temperature between 60 and 70 degrees F or as required by the manufacturer. Apply sealant to clean dry surfaces only when the ambient temperature is between 60 and 85 degrees F.

D. Ensure all work by others occurring at sealant joint locations has been completed prior to the start of sealant installation.

E. Clean all substrates to receive the joint sealant using the manufacturers recommended cleaners and surface preparation techniques.

F. Ensure all existing sealants and other materials have been removed down to clean sound original substrates. Saw-cut, wire brush, chip, or grind as required to achieve suitable substrates for sealant installation.

G. All bonding surfaces shall be cleaned with a minimum of two applications of solvent followed by wiping with clean white rags. Solvent shall be applied with brushes and wiped from substrate with rags while it is still wet. Additional application shall be performed if dirt remains after two applications until all dirt is removed.
H. Joint primer shall be applied to all properly prepared, cleaned and dry substrates. Primer shall be approved by the sealant manufacturer for each substrate and shall be completely compatible with the existing materials and proposed sealants and accessories.

I. Primer shall be applied prior to application of joint backer, bond breaker or sealant.

J. Joint backer shall be installed in all joints as detailed. Joint backing shall be installed with approximately 30% compression at 70 degrees F. Do not stretch, twist, tear or puncture joint backing. Butt joint backings tightly at intersections.

K. Joint backing shall be installed at the required depth so as not to exceed the joint width/depth ratio recommended for the sealant.

L. Bond breaker tape shall be installed at locations where backer rod cannot be utilized to achieve the designated joint depth and where shown on the Contract Drawings. Sealant shall adhere only to the sides of the joint and not to the back so as to eliminate three-sided adhesion.

M. Unless otherwise required by the sealant manufacturer, the sealant shall be mixed for a period of 6 minutes minimum with a slow speed electrical drill and mixing paddle. The sides of the container shall be repeatedly scraped to ensure adequate mixing.

N. Sealant shall be applied to clean, dry, joints by knife, trowel, manual or air pressure caulking guns using proper nozzle sizes.

O. Sealant shall be forced into the joint to completely fill the void and achieve full “wet-out” of the bonding surfaces. Force sealant into the joint and against the sides of the joint. Avoid pulling sealant from sides. All joint sealant shall be immediately tooled to assure full adhesion. Sealant shall be dry tooled, straight, uniform, smooth and neatly finished to the profiles detailed. No soaps, wetting of slicking agents will be allowed.

P. Install reticulated foam at weep holes at sill locations spaced 24-inches on center as shown on the Contract Drawings.

3.7 REINSTALLATION OF WINDOW BLINDS AND SHADES

A. The Contractor shall carefully remove the existing blinds/shades at designated locations and store for reinstallation. Should the window blinds/shades become damaged, they shall be replaced at no additional cost to the Owner.

B. Confirm that all the interior painting has been completed prior to reinstalling the existing blinds/shades.

C. Coordinate with Owner prior to reinstalling the existing blinds/shades at its previous location.
3.8 PROTECTION AND CLEANING

A. Protect window surfaces from contact with contaminating substances resulting from construction operations. In addition, monitor window surfaces adjacent to and below exterior concrete and masonry surfaces during construction for presence of dirt, scum, alkaline deposits, stains, or other contaminants. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written recommendations.

B. Clean aluminum surfaces immediately after installing windows. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.

C. Clean factory-glazed glass immediately after installing windows. Comply with manufacturer's written recommendations for final cleaning and maintenance. Remove nonpermanent labels and clean surfaces.

D. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.

3.9 FASTENING OF FINISHED CARPENTRY

A. Install interior finish carpentry level, plumb, true, and aligned with adjacent materials. Use concealed shims where necessary for alignment.
   
   1. Scribe and cut interior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
   2. Where face fastening is unavoidable, countersink fasteners, fill surface flush, and sand unless otherwise indicated.
   3. Install to tolerance of 1/8 inch in 96 inches (3 mm in 2438 mm) for level and plumb. Install adjoining interior finish carpentry with 1/32-inch (0.8-mm) maximum offset for flush installation and 1/16-inch (1.5-mm) maximum offset for reveal installation.
   4. Coordinate interior finish carpentry with materials and systems in or adjacent to it. Provide cutouts for mechanical and electrical items that penetrate interior finish carpentry.

B. Composite wood trim: Concealed fasteners for PVC trim shall be installed using a drill to drive the fastener to the preset level below the trim surface. Fasteners must be driven perpendicular to the surface of the trim being secured. Place the PVC trim plug into the hole and gently tap until it is flush with the trim board.

3.10 PAINTING OF FINISHED CARPENTRY

A. Finishing materials shall be free from skins, lumps or any foreign matter when used, and shall be kept well stirred while being applied.

B. Contractor shall apply 1-coat primer, and 2- coats of finished paint to finished carpentry.

C. Spray painting will not be allowed unless approved in writing by the Designer. Apply paint/primer coating with the following appropriate brushes:
1. All latex based paints and coatings shall be applied with 100% polyester brushes.

D. Each coat of finish shall be evenly brushed out and allowed to dry before any subsequent coat is applied. Each coat shall be a different tint from that of the preceding coat and shall be reviewed and accepted by the Owner before the next coat can be applied. Final coats shall be the exact shade and textures selected. The finished work shall be free from runs, sags, defective brushing and clogging of lines or angles. Drying time between coats of paint shall be in accordance with the manufacturer's labeled instructions.

3.11 REPLACEMENT PARTS

A. The Owner shall be provided with the requested quantity of the following:

1. One (1) additional sets of window hardware.
2. Two (2) additional balancer units.
SECTION 223000

PLUMBING

PART 1 – GENERAL

1.1 IN GENERAL

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 024100 – Selective Demolition
B. Section 061000 – Rough Carpentry
C. Section 075200 – SBS Modified Bitumen Roofing
D. Section 076200 – Sheet Metal Flashing and Trim

1.3 DESCRIPTION OF WORK

A. In general, the Contractor shall supply all labor, materials, equipment, temporary protection, tools and appliances necessary for the proper completion of the work in this Section, as required in the Specifications and in accordance with good construction practice. The work under this Section generally includes the following:

B. Provide all temporary protection, lifts, hoists, manpower and equipment to protect the building and its components.

C. Remove and replace all of the existing roof drain bowls, clamping rings, strainers, bowl insulation, and associated hardware. New drain bowls to be equipped with collar extensions. Chip away concrete roof deck around existing roof drain bowl, if required, and repair concrete deck.

D. Clean all low slope roof drain systems from roof level to the point where it exits the building to achieve a free-flowing system before the roof demolition begins, and after the roof is replaced.

E. Extend the designated vent pipes to provide 18-inch minimum clearance above the finished roof surface. Coordinate with Section 075200 – SBS MODIFIED BITUMEN ROOFING and Section 076200 – SHEET METAL FLASHING AND TRIM for orderly progress of the installation.

F. Coordinate the repair of the roof decks with the appropriate specification section.
1.4 JOB CONDITIONS

A. Schedule and execute all work without exposing the building interiors to inclement weather. Protect all new and existing roof work, the building and its contents from staining and damages. Segregate all work areas from the building occupants.

B. The Contractor is cautioned to take all necessary precautions and make all investigations necessary to install the work. The Owner will not consider unfamiliarity with the job conditions as a basis for additional compensation.

C. The plumbing work shall be coordinated with the roof work in such a manner that no interior portions of the building are left exposed to the elements at the end of a day’s work.

D. The Contractor shall provide all the necessary warning lines required to segregate the work areas and to protect the occupants from plumbing operations.

E. The Contractor shall provide all roof top protections for new and existing roofs as it relates to the plumbing operations.

F. Interior access may be required to perform the plumbing work, which may include the removal and replacement of the existing ceiling tiles and interior concrete block wall partitions to access the underside of the drain bowl assembly.

G. The plumbing shall be performed by licensed tradesmen.

1.5 SUBMITTALS

A. The Contractor shall submit project literature and samples for the items listed in this section in accordance with Section 013300 – SUBMITTAL REQUIREMENTS.

B. Contractor to provide site safety plan UMA’s EHS.

1.6 WARRANTY

A. The Contractor shall supply the Owner with a minimum two-year workmanship warranty for their work. In the event any work related to this section is found to be defective within two years of substantial completion, the Contractor shall remove and replace such at no additional cost to the Owner.

PART 2 - MATERIALS

2.1 ROOF DRAINS AND ASSEMBLIES

A. Replacement roof drains shall be minimum 12” diameter coated cast iron with 4” minimum diameter bottom outlet, large sump and wide roof flange, as manufactured by Josam Manufacturing Co., Zurn, Wade, Smith or approved equal. Replacement drain outlet diameters
shall need 2” extension to match the existing, and be configured to rest on the roof deck, with a collar extension up to the insulation height as shown on the Detail Drawings. Drain assemblies shall have non-puncturing cast iron clamping ring with integral gravel stop. All roof drain assemblies shall be installed with underdeck clamps. Drain strainers shall be cast iron, vandal resistant, of suitable size and configuration as provided by the drain manufacturer.

B. All accessories necessary for the proper installation of the new drain bowl assemblies, including but not limited to underdeck clamps, clamping rings with integral gravel stops and strainers, shall be of the same manufacturer as the drain bowls and be completely compatible with the existing piping and surrounding materials. Drain sump caulking shall be as recommended by the supplier.

C. No-hub connections shall be neoprene sleeves with a minimum of two (2) stainless steel hose clamps per side to be clamped.

2.2 INSULATION

A. Insulation for new drain bowl assemblies and drain pipe shall be preformed and skinned fibrous glass, minimum 1" thick, of sufficient size to fit fixtures and piping, such as fiberglass ASJ/SSL-11 pipe insulation by OCF, with factory-applied jackets, or approved equal. Fittings shall be mitered of the same material. Joints shall be taped as recommended and supplied by the manufacturer of the insulation.

2.3 CONCRETE PATCHING COMPOUND

A. Repair mortar for concrete deck repairs shall be a polymer modified Portland cement based patch mortar. Mortar shall be fast-setting, non-sag material such as SikaQuick 1000 as manufactured by the Sika Corporation, 10-60 Rapid Mortar as manufactured by BASF, FastSet as manufactured by Quickrete, or approved equal.

PART 3 - EXECUTION

3.1 GENERAL

A. All work in this Section shall be coordinated with roof replacement work. All required work at drain locations shall be properly protected at all times from equipment and traffic.

B. All flashing-in of the roof drains and membrane repairs as a result of the plumbing work shall be the responsibility of and provided by the Roofing Contractor under Section 075200 – SBS MODIFIED BITUMEN ROOFING.

C. The Contractor is cautioned to investigate all existing conditions and materials of construction. All replacement items, including but not limited to clamps and strainers must be completely compatible and match the existing system.

D. Clean all new drain assemblies thoroughly of dust, dirt, debris and bituminous materials prior to the installation of the replacement roof membrane system.
3.2 REMOVAL OF EXISTING DRAINS

A. Remove the existing designated drain components from the roof deck so as to cause minimum damage to the deck.

B. The Contractor shall provide all interior and roof deck protection.

3.3 CONCRETE DECK REPAIR AT DRAIN BOWLS

A. Using hand and electric power tools (15 lb. Maximum chipping hammers) remove concrete around existing roof drain bowls in order to remove existing roof drain bowls and associated components. Removal of concrete and surface preparation shall be completed as recommended by the patching mortar manufacturer and as outlined within these specifications.

B. Coordinate with UMA’s project manager to schedule and access interior of building to avoid disruptions with building tenants. Provide interior protection around work areas.

C. Undercut or “key” in repair edges on at least two opposite sides to mechanically retain the repair.

D. Prepare the surface of the existing concrete to receive the bonding agent and repair mortar. Provide a ¼” minimum aggressive surface profile with fractured aggregate (ICRI-CSP 6 or heavier). Tool marks should be visible.

E. Completely remove all dust, grease, and other impurities via high-pressure water wash, combined with wire brushes, chipping, grinding, or other methods as required to achieve acceptable bonding surfaces. Dampen the existing surface area with clean potable water, to obtain saturated-surface-dry (SSD) conditions.

F. If corroded reinforcement or embedded structural steel is encountered during preparation, chip out concrete minimum ¾” to maximum 1 ½” around steel. Clean exposed steel to SSPC-SP11 specifications and apply two (2) coats of Sika Armatec EpoCem 110 or approved equal, just prior to placement of the repair mortar to achieve a wet-on-wet application.

G. Apply coating/bonding agent to all substrate surfaces as recommended by the repair mortar manufacturer. Slurry scrub repair mortar into prepared damp substrates to achieve a wet-on-wet application.

H. Install repair mortar to properly prepared areas within a time period to achieve a “wet-on-wet” mortar application. Mix repair mortar in accordance with the material manufacturer’s instructions. At repairs with a depth greater than 1-1/2”, mix in 3/8” coarse aggregate as required by the mortar manufacturer. Utilize the manufacturer’s recommended mix rates. Extend profiling mortars in strict accordance with manufacturer’s directions.

I. The concrete substrates require wetting with water to obtain SSD conditions prior to installing the bonding agent. Consult with the manufacturer’s instructions prior to initiating repairs.
J. Finish the repairs flush with the existing surfaces. Insure that the surface, texture, and profile is roughed and textured to match surrounding concrete and to achieve proper mechanical bond with the later applied coating primer. Do not feather edge repairs, but install in ¼” minimum applications, or as otherwise limited by each materials manufacturer’s limitations.

K. Provide for proper cure of patch as recommended by the repair material manufacturer. At a minimum, curing shall consist of wet burlap placed over the repair area, continuously wetted to provide a constantly moist burlap and enclosed with polyethylene, duct taped to the adjacent surfaces. Curing materials shall remain in place for the minimum manufacturer’s specified time based upon surface and ambient temperatures and humidity.

3.4 REPLACEMENT ROOF DRAINS

A. Install all replacement roof drains such that the bowl flange with clamping ring and integral gravel guard are at deck level. See detail drawings for assembly position.

B. Should it be required, complete all cuts through the existing deck so as to cause minimum damage to the deck and associated building components. Cut shall be the minimum size possible. Methods of deck removal shall be submitted by the Contractor and approved by the Designer prior to demolition. The Contractor shall provide all interior and rooftop protection. Apply concrete repair material around the drain bowl assembly on the roof deck.

C. Make all drain to leader connections watertight and of sufficient strength.

D. All drains installed shall be completed and flashed in the same day’s operation.

E. Check all roof drain and leader pipe joints with a water test once roofing and flashing are complete and prior to installing drain system insulation to check for leaks. Repair all leaks to the satisfaction of the Owner.

3.5 CLEANING OF DRAINAGE SYSTEM

A. Clean existing drainage system prior to any work to confirm free flowing system.

B. Once the new replacement roof system has been installed, clear all roof drain leader piping of debris and clogs such that the system is free-flowing.

C. The Contractor shall notify the Designer and Owner a minimum of 72 hours in advance prior to cleaning drainage system, in order to allow the Designer and Owner present during the cleaning operations.

D. The Contractor shall clear the existing leader pipe with Roto-rooter type equipment from the roof deck level to the point where the leader pipe exits the building. Flush the drain line with water upon completion of the cleaning.
3.6 VENT PIPE EXTENSIONS

A. It is the intent of the project to cut, or extend all existing vent pipes to provide an 18-inch minimum and 24-inch maximum clearance height from the finished roof surface to the top of the pipe. Coordinate the finished roof height with that of Section 075200 – SBS MODIFIED BITUMEN ROOFING. The configuration varies, and will be strongly dependent on the final insulation heights of the new roof system.

B. Field configurations will be required. Any vent pipe which will provide a minimum 8-inch flashing height under the no-hub connector, may simply be extended so that a pipe wrap detail may be installed.

C. Any vent pipe which will not provide the 8-inch flashing height due to their current low height, shall be cut within the insulation layer and extended in conjunction with the roof installation.

3.7 CLEAN-UP

A. All floor and adjacent areas, both interior and exterior, damaged or stained by the installation of the plumbing work shall be repaired and cleaned of all dust, debris and any other materials to the Owner's satisfaction.

END OF SECTION
SECTION 261000
TEMPORARY MECHANICAL/ELECTRICAL DISCONNECTS

PART 1 – GENERAL

1.1 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 024100 – Selective Demolition
B. Section 061000 – Rough Carpentry
C. Section 075200 – SBS Modified Bitumen Roofing
D. Section 076200 – Sheet Metal Flashing and Trim
E. Section 223000 – Plumbing

1.3 DESCRIPTION OF WORK

A. In general, the Contractor shall supply all labor, materials, equipment, temporary protection, tools and appliances necessary for the proper completion of the work in this Section, as required in the Specifications and in accordance with good construction practice. The work under this Section generally includes the following:

B. Provide all temporary protection, lifts, manpower, and equipment to protect the building and its components.

C. The Contractor shall disconnect designated rooftop equipment and electrical conduit(s) servicing equipment and re-locate electrical conduit penetration to make room for new rooftop curb unit support. It is anticipated that the Contractor will be required to provide a new cored hole through the existing concrete roof deck to re-locate electrical conduit with a weather-head. The Contractor will be responsible to coordinate all work (equipment shutdown and interior access/protection) with the Owner.

D. The Contractor shall disconnect designated rooftop equipment and electrical conduit(s) servicing equipment and install a sheet metal duct extension to the existing ductwork to make room for a new rooftop curb unit support. The Contractor will be responsible to coordinate all work (equipment shutdown) with the Owner.

E. Install weather-head at conduit penetrations at designated rooftop equipment. Refer to Contract Drawings for additional information.
F. Temporarily disconnect, remove, and support existing roof top fans, vents and mechanical ventilation equipment. Fans and equipment shall be re-installed and reconnected after installation of roofing and flashing of roof curbs. Provide electrical extensions, mechanical ductwork extensions, and roof curb extensions as required to extend the equipment above the new roof surface.

1. The following is the scope of work required where the existing exhaust fans, mechanical equipment, and antennas located on the roof or adjacent surfaces must be disconnected, removed, and reconnected.

   a. Prior to temporarily lifting of any existing exhaust fans and mechanical equipment, the contractor shall test the exhaust fans and mechanical equipment to ensure they are functioning properly and report any problems to the owner.

   b. The Contractor shall coordinate all interruptions of power to existing exhaust fans and mechanical equipment with the Owner prior to any work. Note, the Owner does not have the technical support to perform renovations at the site, and therefore, all renovations, including the interruption and reconnecting of the power, will be borne by the Contractor.

   c. The Contractor shall ensure that the power to existing exhaust fans and mechanical equipment is turned off. The Mechanical contractor shall use lockout / tag-out procedures to ensure that the power is not turned on.

   d. The Contractor shall temporarily disconnect, remove, and support the existing roof-mounted exhaust fans, mechanical equipment, ductwork and wiring and reconnect the same, as required by job condition, after installation of a new roof and flashing of the roof curbs.

   e. The Contractor shall coordinate the heights of the existing mechanical unit curbs and fan curbs with that of the new insulation height to confirm which of the units will require raising and new duct and electrical extensions as required.

   f. The Contractor shall turn power back on to the exhaust fans and mechanical equipment after work has been completed by all other trades.

   g. After the existing exhaust fans and mechanical equipment have been reconnected, the Contractor shall test the exhaust fans and mechanical equipment to ensure they are functioning properly and report any problems to the Owner.

G. The Contractors shall coordinate the required electrical / mechanical shutdown(s) of the designated equipment with the Owner where the existing equipment requires raising or temporary removal to perform the work and reinstallation, where indicated on the Contract Drawings.

H. Coordinate the work in this section with the appropriate trades to insure the proper work sequence.
1.4 JOB CONDITIONS

A. The existing roof top mechanical exhaust equipment servicing the fume hoods within designated laboratories are required to be in operation and cannot be shut down and/or disconnected during the roof replacement project. The Contractor shall coordinate roofing work with the Owner when working around these mechanical units.

B. Schedule and execute all work without exposing the building interiors to inclement weather. Protect all new and existing roof work, the building and its contents from staining and damages. Segregate all work areas from the building occupants.

C. Notify the Owner at least 48 hours in advance of doing any interior demolition work so that the Owner may remove any portable items, such as furniture, from the area. Fixed items will not be removed and are to be protected by the Contractor.

D. The Contractor shall be responsible for shutting down, removal, temporary support, proper reinstallation with ductwork and electrical extensions as required, and turning on of each mechanical unit by the end of the workday as it relates to the removal and reinstallation of the mechanical equipment. If the mechanical unit is found operational prior to the shutdown procedures, and does not operate upon completion of the work and restarting the equipment, the Contractor will be responsible for repairing/replacing said unit at no additional cost to the Owner.

E. The Contractor is cautioned to take all necessary precautions and make all investigations necessary to install the work. The Owner will not consider unfamiliarity with the job conditions as a basis for additional compensation.

F. The Contractor shall provide a minimum of two (2) weeks notice prior to shutting down any mechanical services.

1.5 SUBMITTALS

A. The Contractor shall submit project literature and samples for the items listed in this section in accordance with Section 013300 – SUBMITTAL REQUIREMENTS.

B. Submit proposed lead times of materials and coordination efforts associated with replacement of units.

C. Submit proposed temporary shoring details and methods of re-attachment.

D. Contractor to provide site safety plan UMA’s EHS.

1.6 WARRANTY

A. Upon completion of the work, and prior to final payment, the Contractor shall submit a Guarantee of his work to be free from defect in materials and workmanship. This Guarantee shall be for a period of two (2) years, and shall be signed by a Principal of the Contractor’s firm, and sealed if a corporation.
PART 2 – MATERIALS

2.1 FASTENERS AND ACCESSORIES

A. In general, fasteners shall be stainless steel. All accessories, including, but not limited to nails, screws, clips, fastening strips, etc. shall be completely compatible with the material being fastened to prevent galvanic reaction and premature deterioration.

B. Fasteners for securing fan and vent unit covers and termination bars to existing wood construction shall be stainless steel hex head self-drilling screws. At fan and vent unit cover resecurement use stainless steel capped EPDM washers of the next larger size than the existing fastener.

2.2 SHEET METAL, PREFORMED FLASHINGS AND ACCESSORIES

A. Aluminum shall be .032” thick, constructed per SMACNA standards for 2” w.c. static pressure. Aluminum shall have a mill finish. Aluminum shall be 3003 alloy, H-14 temper.

B. Stainless steel shall be 24 gauge AISI 18-8 type 304, 2D finish. Sheet length shall be 8’ maximum.

C. Galvanized steel shall be constructed per SMACNA standards for 2” w.c. static pressure.

D. All accessories, including but not limited to nails, screws and clips shall be copper, brass, stainless steel or galvanized steel and completely compatible with the surrounding metal to prevent galvanic reaction.

E. Rivets shall be 3/16” diameter stainless steel.

2.3 WEATHER HEAD AND ACCESSORIES

A. Weather head, conduit, base plate, and hardware shall be G90 galvanized steel. Weather head shall come equipped with a neoprene weather stop.

B. Sealant required for fire-stopping shall be single component, neutral-cure silicone sealant conforming to ASTM E 814 (UL 1479), such as 3M Fire Barrier Silicone Sealant 2000+, Everkem FireStop-814+, BOSS 814 Firestop Sealant, or approved equal.

C. Fiberglass Batt Insulation – un-faced.

PART 3 – EXECUTION

3.1 GENERAL

A. All work in this Section shall be coordinated with roof replacement work.
B. All flashing-in of the mechanical work shall be the responsibility of and provided by the Roofing Contractor under Section 075200 – SBS MODIFIED BITUMEN ROOFING.

C. The Contractor is cautioned to investigate all existing conditions and materials of construction.

D. Follow all applicable local, state, and federal requirements regarding construction of scaffolding and protection of the public safety for the work items included in this section. Specific reference should be made to OSHA Construction Safety Regulations. Provide warning lines, barricades, and similar items as required to restrict pedestrian access to hazardous areas. Job site safety shall be the Contractor’s responsibility.

3.2 REINSTALLATION OF EQUIPMENT

A. Coordinate the heights of the existing mechanical unit curbs and fan curbs with that of the tapered insulation height to confirm which of the units will require raising and new electrical and duct extensions as required. Refer to Section 075200 – SBS MODIFIED BITUMEN ROOFING for coordination issues.

B. Extend electrical conduits and wiring, and mechanical systems and ductwork as required due to the increased roof insulation height.

C. Rooftop unit installation shall be coordinated to prevent exposing the interior to inclement weather. Utilize stainless steel capped EPDM washers at all fastener locations.

3.3 SHEET METAL FLASHINGS

A. Provide sheet metal extension ductwork, stainless steel, aluminum or galvanized as specified herein and as required, to match the existing sheet metal systems. Refer to the publication, "Copper and Common Sense" by Revere Copper and Brass and all recommendations of the Sheet Metal and Air Conditioning Contractors National Association concerning methods and materials to be used in the fabrication and construction of sheet metal flashings.

B. Ductwork shall be crimped and riveted to prevent displacement associated with unit vibration.

3.4 CORING HOLE THROUGH SLAB

A. The Contractor shall coordinate with UMA’s Project Manager prior to executing any work associated with coring new hole through roof deck.

B. The Contractor shall review interior conditions and provide interior protection within area affected by the work.

C. The Contractor shall take any necessary means to avoid damaging the existing concrete roof deck and associated steel reinforcing bars.

D. The diameter of the cored hole shall be wide enough to feed electrical conduit through hole and onto the roof.
3.5 WEATHER HEAD INSTALLATION

A. Coordinate finished length and height of conduit/weather head with Section 075200 – SBS MODIFIED BITUMEN ROOFING and the final insulation thickness.

B. Extend conductor cable through the new weather head and conduit and secure neoprene weather gasket.

C. Install fiberglass batt insulation and fire stopping sealant as indicated in the Contract Drawings.

D. Secure weather head and conduit to existing roof deck to avoid tipping and stress on the roof membrane flashings.

END OF SECTION