

# PUMP HOUSE & CARRIAGE BARN ROOF REPLACEMENTS

for the  
City of Worcester  
Department of Public Works & Parks  
Worcester, MA 01610

January 2025



## Bid Set Specifications



**N A U L T   A R C H I T E C T S   I N C.**

71 HOPE AVENUE WORCESTER, MA 01603  
Established 1886

TEL: 508.755.6134  
E-mail: [naultarchitects@verizon.net](mailto:naultarchitects@verizon.net)

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## **SECTION 01.11.00**

### **SUMMARY OF WORK**

#### **I PART 1 - GENERAL**

##### **1.01 GENERAL PROVISIONS**

- A. This section supplements the Conditions of the Contract, Prime Requirements, Drawings, and all other parts of the Contract Documents.
- B. This Contractor must be familiar with all other Divisions and Sections of the Specifications which affect the work of this Section.

##### **1.02 REQUIREMENTS INCLUDED**

- A. Work under this Contract.
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##### **1.03 WORK UNDER THIS CONTRACT**

- A. The work to be done under this contract consists of executing and completing all work required for the Roof Replacement at the Worcester DPW & Parks Pump House (240 Temple St. West Boylston, MA 01583) and Carriage Barn (55 Dirt Rd. Holden, MA 01520).
- B. The Prime Contractor for this project will be the roofing contractor, who will be solely in control of the performance or subcontracting of all work required. Where work to be subcontracted would normally be performed by licensed tradesmen (i.e. electrical disconnection of fans) the Prime contractor must arrange for licensed individuals to perform that work.
- 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. Pump House: Stripping the roof to the concrete deck and replacing the existing roofing system with a new single-ply roofing system, complete with all insulation, flashings, edge metals and coping.

2. Carriage Barn: Stripping the shingles and underlayment to the wood deck, patching the wood deck as necessary, and installing new shingle roofing systems with all underlayments and flashings.
  3. Abatement of asbestos-containing roofing materials and legal disposal of all removed materials.
- D. The following major elements will be performed by the Owner, under separate contracts, for which the Prime Contractor has a coordinating responsibility:
1. None. All work will be done by the Contractor.
- E. The following major elements will be furnished by the Owner, for installation by the Contractor or sub-contractors:
1. None. Furnish all materials required for the complete project.
- F. Reference to Drawings: The work to be done under this Contract is shown on the Drawings listed at the end of this Section.
- G. Prevailing Wage: The Massachusetts Standard Labor Wage rates, as outlined in the exhibits, will be used in the construction of this project

#### 1.04 EXAMINATION OF SITE AND DOCUMENTS

- A. A pre-bid meeting will be held at the job site on the date and at the time indicated in the Invitation to Bid.
- B. Bidders may also visit the site on a non-holiday weekday acceptable to the Owner, between the hours of 9:00 AM and 3:00 PM to visually inspect the location of the work and existing conditions that may affect new work.
- 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. The Owner and Designers will not be responsible for errors, omissions, and/or charges for extra work arising from the Prime Contractor's or Subcontractor's failure to familiarize themselves with the contract documents. The Prime Contractor and Subcontractors 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.

#### 1.05 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.

#### 1.06 WORK SEQUENCE

- A. The Work will be conducted in the following sequence of demolition/construction:
1. Actual sequence of the work will be left to the discretion of the Contractor, who will prepare a construction schedule showing the sequence and duration of work, for review and approval by the Owner.
  2. Do not remove more roof than can be replaced in the same day.

#### 1.07 SUPERVISION OF WORK

- A. The Prime Contractor shall be held directly responsible for the correct installation of all work performed under this Contract. The Prime Contractor must make good repair, without expense to the Owner, 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 Prime Contractor's warranty period, from the date of final acceptance of the work by the Owner.
- B. The Prime Contractor shall furnish a competent Massachusetts licensed superintendent satisfactory to the Owner and to the Designer. The licensed superintendent shall supervise all work under this contract and who shall remain on duty at the site throughout the Contract period while work is in progress.
  - 1. Submit the name and resume of the superintendent for approval to the Architect. Include experience with projects of equal size and complexity.

#### 1.08 PRIME CONTRACTOR'S USE OF PREMISES

- A. Use of the Site: 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.
  - 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.
- B. Schedule and perform work to afford minimum of interruption to normal and continuous operation of utility systems. Submit for approval, a 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.
- C. The Prime Contractor shall schedule as per Section 01.50.00 - 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.
- D. The Prime Contractor can gain access to the premises during the hours specified below. In addition the Prime 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, Prime Contractor shall inform the Owner one week prior to work.
  - 1. Deliveries: 7:00 AM to 6:00 PM.
  - 2. Work on site: 8:00 AM to 3:30 PM
  - 3. Weekends: with Owner's prior approval.
  - 4. Holidays: with Owner's prior approval.
- E. The Prime 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.
- F. All contractors 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.
- G. The Owner 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.

- H. Parking: Parking within the parking lot will be limited, and typically in the spaces farthest from the entry. Contractors may move vehicles up to the portion of the building receiving the work, to load and unload tools and materials, but should not expect to park close to the building.
- I. Radios, tape players, "boom boxes", or other audio entertainment equipment, including personal entertainment devices, shall not be allowed on the project site.
- J. The Contractor shall not permit smoking within the building. Locate smoking areas away from entries, outdoor intakes, and operable windows, including adjacent buildings.
- K. The Contractor shall not allow the use of intoxicating beverages or non-prescription controlled substance drugs upon or about the work site.
- L. 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 Owner, 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.

#### 1.09 COORDINATION

- A. The Prime 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 Prime 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 designer in writing. Failure to identify and address such issues in advance becomes the sole responsibility of the Prime 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 Prime Contractor as approved by the Designer and the Owner. 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 Prime Contractor shall review the tolerances established in the specifications for each type of work and as established by Subcontractor organizations. The Prime Contractor shall coordinate the various Subcontractors and resolve any conflicts that may exist between Subcontractor tolerances without additional cost to the Owner. The Prime 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.

#### 1.10 PROJECT MEETINGS

- A. Project meetings shall be held on a bi-weekly basis and as required subject to the discretion of the Owner.

- B. Attendees: In addition to the Project Manager and Designer, each contractor, subcontractor, 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. In order to expedite construction progress on this project, the Prime 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 Prime 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.
- D. Scheduling shall be discussed with all concerned parties, and methods shall be presented by the Prime 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.

#### 1.11 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 Prime Contractor shall give the Designer, the Owner 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 Prime 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 Prime 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 Prime Contractor.
- D. Prime Contractor and specialized Subcontractors as applicable shall identify all permits (other than Prime building permit) required from Authorities having jurisdiction over the Project for the construction and occupancy of the work. The Prime 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.
- E. Prior to the start of construction, the Prime Contractor shall complete applicable applications, permits, and notifications to the MADEP, such as the Demolition/Construction form BWP AQ-06, and pay the required fees. These forms must be submitted at least 10 working days in advance of any regulated activity on the site. Demolition permits must be submitted for any work involving demolition, new construction and renovation.

#### 1.12 CUTTING, CORING, AND PATCHING, UNLESS OTHERWISE INDICATED

- A. The Prime 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.
- B. 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.
- C. Existing Utilities Services:
- 1. Interruptions to critical existing utility services will not be allowed except as scheduled per Section 01.50.00 - Temporary Facilities and Controls.
  - 2. The Prime Contractor shall locate and record on Drawings all existing utilities along the course of the work by such means as the Designer and the Owner 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 Prime 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 Prime 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 Prime Contractor, it shall be repaired by the Prime 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.

### 1.13 DEBRIS REMOVAL



- A. The Prime Contractor shall coordinate the removal of all demolition and construction waste including waste by all Subcontractors from the job site on a daily basis.
- B. Debris shall be legally disposed of in a D.E.P. approved disposal site.
- C. The Prime 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 the Owner and the Designer. The Prime 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.
  - 2. Sweep for nails using magnetic nail sweepers, daily.
- 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 Prime Contractor shall be responsible for proper disposal of all construction debris leaving the site.

#### 1.14 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 Prime 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 Owner.

#### 1.15 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. 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 Owner 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.

#### 1.16 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 Prime 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. OSHA 10 cards for anyone working on site are to be submitted prior to the first requisition.
- C. Documentation records shall be initially compiled by the Prime Contractor and Subcontractors, and the Prime Contractor shall create and maintain a copy of the documentation on site at all times.

#### 1.17 DAMAGE RESPONSIBILITY

- A. The Prime Contractor shall repair, at no cost to the Owner, any damage to building elements, site appurtenances, landscaping, utilities, etc. caused during demolition operation and work of this Contract.

#### 1.18 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

#### 1.19 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 Prime Contractor shall cease work in the affected areas only and continue work in other areas, at the same time notify 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 Owner or Designer 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 Owner.

#### **PART 2 - PRODUCTS (Not Used)**

#### **PART 3 - EXECUTION (Not Used)**

#### **END OF SECTION**

## SECTION 01.31.00

### PROJECT MANAGEMENT AND COORDINATION

#### I. PART I - GENERAL

##### 1.01 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.

##### 1.02 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 trades 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 Occupancy.
- C. Meetings:
  - 1. Prior to commencement of the Work, the Contractor shall meet in conference with the Owner and Architect to discuss and develop mutual understandings relative to administration of the quality assurance program, safety program, labor provisions, the schedule of work, and other procedures.
  - 2. The Architect will regularly conduct job meetings, and keep the Owner informed of the progress and quality of the Work, and will endeavor to guard the Owner against defects and deficiencies in the Work. The Architect's minutes of meetings shall be the official minutes kept on the Project. The Architect shall provide copies of the meeting minutes to the Contractor and Owner.
  - 3. In addition to progress meetings, hold coordination meetings and pre-installation conferences with personnel and Sub-Contractors to assure coordination of the Work. The coordination meetings are to be separate from the commissioning or commissioning meetings.
- D. Coordination of Submittals:
  - 1. Schedule and coordinate submittals.
  - 2. Coordinate work of various trades 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 trades.
  - 4. Change orders caused by lack of coordination will not be entertained.

##### 1.03 PROJECT MANAGEMENT

- A. Project Superintendent:
  - 1. The Contractor shall employ a Superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The Superintendent shall represent the Contractor, and

communications given to the Superintendent shall be as binding as if given to the Contractor. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case.

2. The Superintendent shall be a competent and responsible employee, satisfactory to the Owner, who is regularly employed by the Contractor and is designated by the Contractor as its representative to be in full time attendance at the Project site throughout the construction of the Work.
  3. The Superintendent shall be responsible for coordinating all the Work of the Contractor and the Subcontractors. The Superintendent shall be licensed consistent with the Massachusetts Building Code.
  4. The Superintendent's resume shall be submitted to the Owner prior to commencement of construction and must demonstrate to the Owner's reasonable satisfaction that the Superintendent has performed the same duties on previous construction projects similar to the Project.
  5. The Superintendent shall attend each job meeting.
- B. The Contractor must supply to the Owner the home telephone number of a responsible person who may be contacted during non-work-hours for emergencies on the Project.
- C. The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them, and whenever the Owner shall notify the Contractor, in writing, that any worker is, in its 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 Owner.

#### 1.04 FIELD COORDINATION

- A. The Contractor shall submit for approval to the Owner a detailed operational plan showing the sequence of operations prior to commencement of any work at the site. The Owner must approve any changes to this operational plan.
- B. The work must be completed in a continuous uninterrupted operation. The Contractor must use sufficient personnel and adequate equipment to complete all the necessary work requirements within a minimum period of time.
- C. Project scopes of limited complexity or limited utility installation will not require coordination drawings. The Prime Contractor remains responsible for field coordinating the work of all trades, to see that it comes together without conflict or loss of functionality.
1. Where field coordination is performed, the Prime Contractor shall advise the Designers of any conflict or field condition which results in the system being installed other than as designed.
  2. In such instances, contractors are expected to propose alternative routes based on field conditions revealed through the performance of the demolition. Rerouting shall not be performed, however, until first approved by the Designers. No additional compensation will be due for field coordination efforts.
  3. Where rerouting of utilities differently than designed creates a conflict with another trade, which was not foreseen or properly coordinated between the contractors, the conflicting utility shall be revised at no expense to the Owner, to eliminate the conflict.

## II. PRODUCTS (Not Used)

## III. EXECUTION (Not Used)

### END OF SECTION

## SECTION 01.32.00

### CONSTRUCTION PROGRESS DOCUMENTATION

#### I. PART I - GENERAL

##### 1.01 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.

##### 1.02 REQUIREMENTS INCLUDED

- A. Procedures and requirements for submission and review of progress schedules and reports.

##### 1.03 RELATED SECTIONS

- A. Section 01.11.00 – SUMMARY OF WORK
  - 1. Project meetings.
- B. Section 01.31.00 - PROJECT MANAGEMENT AND COORDINATION
  - 1. Progress and coordination meetings.
- C. Section 01.33.00 - SUBMITTAL REQUIREMENTS
  - 1. Project reports.
  - 2. Schedule of values.
  - 3. Shop drawings, product data, and samples.

##### 1.04 SCHEDULES

- A. The Prime Contractor is fully responsible for the project schedule, including the scheduling of the work of all sub-contractors.
- B. At the pre-construction meeting, the Prime Contractor shall provide a draft overall construction schedule, showing activities for the performance of the work through project completion. If Notice to Proceed has not been issued and a start date not established, the contractor shall prepare a duration schedule, showing the time period associated with each activity, without filling in specific dates.
  - 1. The Owner will review the draft schedule and advise of any critical dates when work cannot be performed or when work must occur to permit the continued use of the occupied facility.
  - 2. Revise the draft schedule to reflect the Owner's limitations, and resubmit for record.
- C. If action submittals are not made at the time of the construction schedule, prepare a submittal schedule. The submittal schedule shall:
  - 1. Identify all items to be submitted for the project.
  - 2. Identify the date by which the submittal needs to be approved to leave adequate time for ordering, manufacturing and shipping to the site in time for installation by the scheduled date.
  - 3. Identify the date the submittal will be made to the designers, to leave adequate time for review. Allow 7 days for submittals requiring only the Architect's review and 10 days for submittals requiring review by

the engineers.

- D. Weekly, prepare and submit a look-ahead schedule showing the major activities to be performed over the next two weeks, by trade. Update the look-ahead weekly; a two-week look ahead schedule does not mean the schedule is to be updated bi-weekly.
- E. Monthly, update the overall construction schedule to reflect any slippage or acceleration in the project's performance.
- F. The format of the schedules is not mandated, however, the schedules must be readily understandable. The Architect reserves the right to request an alternate format if the schedules do not clearly communicate the required information.

#### 1.05 REQUESTS FOR INTERPRETATION (RFIs)

- A. Where documents are unclear, or in the opinion of the contracts appear to contain conflicts or omissions, request a formal interpretation from the designers. The format of the RFI is not mandated, but contractors are encouraged to ask questions as clearly as possible. Designers are only required to rely on the information provided in the RFI when providing a response.
  - 1. Any RFIs from sub-contractors should be channeled through the Prime contractor and not sent to the designers directly.
- B. Should the answer require clarification, the designers may prepare sketches, memos and/or bulletins to memorialize the direction being given. The Prime Contractor is responsible for disseminating any clarifications given to sub-contractors as appropriate.
- C. If the direction given results in a monetary change to the project cost, contractors must follow the procedures for contract modifications. Work performed based on direction given in response to an RFI, without approval of a proposed change order, will be considered to be a no-cost change.
- D. The Prime Contractor shall maintain an RFI log, recording all questions and answers, and referencing any SK's issued and change orders resulting from the clarifications. The log shall be updated and circulated to all parties each time an RFI is answered.

#### 1.06 CONSTRUCTION CHANGE LOG

- A. The Prime Contractor shall maintain a log of all construction changes, listing the Proposed Change Order (PCO) by number with a single line summary of the change and a listing of which PCOs were included in which Change Order.
- B. The PCO log shall be provided for review at each construction meeting.

## **II. PRODUCTS (Not Used)**

## **III. EXECUTION (Not Used)**

### **END OF SECTION**

## SECTION 01.33.00

### SUBMITTALS

#### I. PART 1 - GENERAL

##### 1.01 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.

##### 1.02 RELATED DOCUMENTS

- A. This Section supplements the General Conditions.
- B. Consult the individual sections of the specifications for the specific submittals required under those sections and for further details and descriptions of the requirements

##### 1.03 GENERAL PROCEDURES FOR SUBMITTALS

- A. Timeliness - The Contractor shall transmit each submittal to the Architect sufficiently in advance of performing related Work or other applicable activities so that the installation is not delayed by processing times, including disapproval and resubmittal (if required), coordination with other submittals, testing, purchasing, fabrication, delivery, and similar sequenced activities. No extension of time will be authorized because of the Contractor's failure to transmit submittals to the Architect in advance of the Work.
- B. Sequence - The Contractor shall transmit each submittal in a sequence which will not result in the Architect's approval having to be later modified or rescinded by reason of subsequent submittals which should have been processed earlier or concurrently for coordination.
- C. Contractor's Review and Approval - Only submittals received from and bearing the stamp of approval of the Contractor will be considered for review by the Architect. Submittals shall be accompanied by a transmittal notice stating name of Project, date of submittal, "To", "From" (Contractor, Subcontractor, Installer, Manufacturer, Supplier), Specification Section, or Drawing No. to which the submittal refers, purpose (first submittal, resubmittal), description, remarks, distribution record, and signature of transmitter.
- D. Architect's Action - The Architect will review the Contractor's submittals and return them with one of the following actions recorded thereon by appropriate markings:
  - 1. Final Unrestricted Release: Where marked "No Exceptions Taken" the Work covered by the submittal may proceed provided it complies with the requirements of the Contract Documents.
  - 2. Final-But-Restricted Release: When marked "Note Markings" or "Comments Attached" the Work may proceed provided it complies with the Architect's notations or corrections on the submittal and complies with the requirements of the Contract Documents. Acceptance of the Work will depend on these compliances.
  - 3. Returned for Resubmittal: When marked "Resubmit" or "Rejected" the Work covered by the submittal (such as purchasing, fabrication, delivery, or other activity) should not proceed. The submittal should be revised or a new submittal resubmitted without delay, in accordance with the Architect's notations stating the reasons for returning the submittal.
- E. Processing - All costs for printing, preparing, packaging, submitting, resubmitting, and mailing, or delivering submittals required by this contract shall be included in the Contract Sum.

##### 1.04 OR EQUALS

- A. Definition - Whenever a specification section names one or more brands for a given item, and the Contractor wishes to submit, for consideration, another brand, the submission shall be considered an "or-equal" or a "material substitution". For the purposes of this Contract, the terms "or-equal" and "material substitution" shall be considered synonymous.
- B. In no case may an item be furnished on the Work other than the item named or described, unless the Architect, with the Owner's written concurrence, shall consider the item equal to the Item so named or described.
- C. The equality of items offered as "equal" to items named or described shall be proved to the satisfaction of the Architect at the expense of the Contractor submitting the substitution.

#### 1.05 SUBMISSION OF PRODUCT DATA

- A. The Contractor shall submit an electronic copy of Product Data, in Adobe Acrobat (pdf) format to the Architect. All such data shall be specific and identification of material or equipment submitted shall be clearly marked or highlighted. Data of general nature will not be accepted.
- B. Product Data shall be accompanied by a transmittal notice. The Contractor's stamp of approval shall appear on the printed information itself, in a location which will not impair legibility.
- C. Product Data returned by the Architect as "Rejected" shall be resubmitted until the Architect's approval is obtained.
- D. When the Product Data are acceptable, the Architect will stamp them "No Exceptions Taken", and return 1 copy to the Contractor. The Contractor shall provide and distribute additional copies as may be required to complete the Work.
- E. The Contractor shall maintain one full set of approved, original, Product Data at the site.

#### 1.06 SUBMISSION OF SHOP DRAWINGS

- A. Shop Drawings shall be complete, giving all information necessary or requested in the individual section of the specifications. They shall also show adjoining Work and details of connection thereto.
- B. Shop Drawings shall be for whole systems. Partial submissions will not be accepted.
- C. The Architect reserves the right to review and approve shop drawings only after approval of related product data and samples.
- D. Shop drawings shall be properly identified and contain the name of the project, name of the firm submitting the shop drawings, shop drawing number, date of shop drawings and revisions, Contractor's stamp of approval, and sufficient spaces near the title block for the Architect's stamp.
- E. The Contractor shall submit to the Architect three (3) black line prints of each shop drawing or one electronic copy in Adobe Acrobat (pdf) format, at the Architect's discretion. Prints may be mailed, delivered in roll form or emailed. Each submittal shall be accompanied by a transmittal notice bearing the Contractor's approval stamp.
- F. When the Architect returns a marked submittal with the stamp "Resubmit" or "Confirm", the Contractor shall correct the original drawing or prepare a new drawing and resubmit three prints or an electronic version thereof to the Architect for approval. This procedure shall be repeated until the Architect's approval is obtained.
- G. When the Architect returns submittal with the stamp "No Exceptions Taken", the Contractor shall provide and distribute the prints for all Contractor and Subcontractors use.



- H. The Contractor shall maintain one full set of approved shop drawings at the site.

#### 1.07 SUBMISSION OF SAMPLES

- A. Unless otherwise specified in the individual section, the Contractor shall submit two specimens of each sample.
- B. A transmittal notice with the Contractors stamp of approval shall be included with all sample submittals.
- C. Samples shall be of adequate size to permit proper evaluation of materials. 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 approved samples will not be approved on the Work.
- D. Samples that can be conveniently mailed shall be sent directly to the Architect, accompanied by a transmittal notice. All transmittals shall be stamped with the Contractor's approval stamp of the material submitted.
- E. All other samples shall be delivered at the field office of the Project Representative with sample identification tag attached and properly filled in.
- F. If a sample is rejected by the Architect, a new sample shall be resubmitted in the specified manner. This procedure shall be repeated until the Architect approves the sample.
- G. 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 particular mention is made in the specifications, at no additional cost to the Owner.

#### 1.08 SCHEDULE OF VALUES

- A. Prior to the first request for payment, the General Contractor shall submit to the Designer and Owner, a Schedule of Values of the various portions of the Work 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. 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 Owner and shall be used only as a basis for the General Contractor's request for payment.
1. The General Contractor and all filed sub-bidders shall include on the Schedule of Values, a line item for "General Conditions" which shall equal roughly 10% of the respective contract value. This line item covers superintendence and management of the project, and will be paid out proportionally to the overall progress of the project.
  2. Where materials are expected to be delivered to the site and requisitioned for prior to their installation, the value of the materials shall be shown separately from the value of the labor on the Schedule of Values.
  3. A discreet line item for "Close Out" documentation, for each trade from which close out documents are required. Retainage is not to be used for the value of the close out effort.

#### END OF SECTION

## SECTION 01.50.00

### TEMPORARY FACILITIES AND CONTROLS

#### I. PART I - GENERAL

##### 1.01 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.

##### 1.02 REQUIREMENTS INCLUDED

- A. Temporary Facilities and Controls including the following:

1. Temporary Water.
2. Weather Protection.
3. Heating During Construction.
4. Temporary Power.
5. Hoisting Equipment and Machinery.
6. Staging.
7. Maintenance of Access.
8. Dust Control.
9. Noise Control.
10. Enclosures.
11. Cleaning During Construction.
12. Field Offices.
13. Telephone Service.
14. Sanitary Facilities.
15. Construction Barriers.
16. Parking.
17. Debris Control and Removal.
18. Safety Protection.
19. Vehicle and Equipment Protection.
20. Project Identification Sign.
21. Delivery of Materials.
22. Shut Down Notice.
23. Construction Cores.
24. Covered Walkways
25. Excavations and Field Survey Requirements

##### 1.03 TEMPORARY WATER

- A. The Prime 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.

##### 1.04 WEATHER PROTECTION

- A. It is the intent of these Specifications to require that the Prime Contractor shall provide temporary enclosures and heat to permit construction work to be carried on during the months of February through March in compliance with M.G.L. Chapter 149, Section 44D(G). Under no circumstances shall the Prime Contractor suspend any work during the months of February 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 February 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 Prime 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 Prime Contractor.
1. 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.
  2. The Prime Contractor shall furnish and install one accurate Fahrenheit thermometer at each work area as designated by the Designer.

#### 1.05 HEATING DURING CONSTRUCTION

- A. Not applicable. Temporary heat should not be required for this project scope.

#### 1.06 TEMPORARY POWER

- A. Contractors may utilize electrical power where available in or around the Work Area, and the Owner shall pay the cost of electricity used.
1. The use of cordless tools is strongly encouraged.
  2. Contractors shall provide their own electrical cords, and cords shall not be run through, across or draped within corridors or circulation spaces used by the public. If running electrical cords across circulation spaces is unavoidable, cords shall be secured to the floor with readily visible colored duct tape, and shall be removed as soon as power is no longer needed.
- B. Modification of electrical panels is not permitted, except where higher voltages are required for specialty tools. Any panel modifications may only be performed by a licensed electrician, and with the Owner's approval.
- C. Generators for temporary power will be permitted, with the Owner's permission, provided they are equipped with mufflers/silencers and set up where directed by the Owner. Should noise or exhaust fumes affect the use of the building, the Owner reserves the right to suspend the use of generators.

#### 1.07 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 designer 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.

#### 1.08 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 Prime 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 Owner prior to commencement of such erecting and dismantling work.
  - 3. Use of staging extends to the Owner's contractors as may be listed in Section 01.11.00 - Summary of Work, where applicable.

#### 1.09 MAINTENANCE OF ACCESS

- A. The Prime Contractor shall provide and maintain for the duration of his contract, a means of access to, around and within the site, 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 Prime Contractor shall, without additional compensation from the Owner, 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.

#### 1.10 DUST CONTROL

- A. The Prime 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 Prime Contractor.

#### 1.11 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 Owner to be excessively noisy may be required to be done during non-normal working hours and at no additional expense.
- 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.

#### 1.12 CLEANING DURING CONSTRUCTION

- A. Unless otherwise specified under the various Sections of the Specifications, the Prime Contractor shall perform clean-up operations during construction as herein specified.
- B. Control accumulation of waste materials and rubbish; periodically dispose of off-site in a legal manner. The

Prime Contractor shall bear all costs, including fees resulting from such disposal.

- C. Clean all dirt and debris tracked into other buildings by construction personnel, to the satisfaction of the Owner.
- D. Maintain project in accordance with all local 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 from the site periodically and dispose of at legal disposal dump site (DEP approved). Recycle where possible.
- 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.

#### 1.13 FIELD OFFICES

- A. No space within the building is available for the contractor's use as field offices.
- B. If permitted by the Owner, the Prime Contractor may provide a suitable field office on site for its own use. The office trailer shall be relocated if required by the Owner., and shall be secured to the site as required by the Building Code.

#### 1.14 TELEPHONE SERVICE

- A. Wired telephone service to the office trailer or project site is not required, although contractors may elect to have such service at their own expense.
- B. All Designers, Superintendents and Project Managers shall maintain cellular telephones and be reachable Monday - Friday between 8AM and 5PM, and after hours for emergency calls. Phone numbers shall be listed on a Project Directory, to be submitted at the pre-construction meeting.

#### 1.15 SANITARY FACILITIES

- A. Use of toilet facilities within the building is prohibited.

- B. If an office trailer is provided, it may be equipped with toilet room containing a working chemical toilet, at the contractor's option. Trailer shall not be removed from site until at least one toilet room in new building is operational.
- C. Otherwise, the Prime Contractor shall provide suitable toilet facilities on site, in a location as required by the Owner. Maintain chemical toilets where work is in progress and in quantity required by OSHA Code.
- D. 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.
- E. If the Owner allows the use of public toilet rooms on site, the Prime Contractor shall take responsibility for maintenance and cleaning of such areas and shall leave them in first class condition equal to the accepted conditions of toilet facilities not used for construction personnel.

#### 1.16 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 Owner.
- 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.
- C. Where roof work is performed within 10'-0" horizontally of any walkway or entrance, the walking surface shall be protected by overhead protection consisting of not less than pipe staging with overhead planks and side netting, but as required for the safe circulation of the patrons.
- D. When demolition materials are removed from the roof, or new materials are loaded to the roof, the Prime Contractor shall have a person on the ground, to stop pedestrian traffic until safe. This person shall police the immediate area for loose debris and tripping hazards prior to allowing pedestrian circulation to resume.

#### 1.17 PARKING

- A. Contractor's shall park where directed by the Owner, and move vehicles when requested by the Owner.
  - 1. Contractors should anticipate being assigned the spaces which are the furthest from the building.
  - 2. Access to loading docks, driveways, staff, faculty, visitor or tenant parking shall not be blocked by construction vehicles.
  - 3. Parking in handicapped accessible spaces will not be permitted.
- B. Idling of vehicles on site will not be permitted.
- C. If the Owner authorizes parking on lawns, the Prime Contractor shall be responsible for repairing any damage to lawns or curbs from parked vehicles.

#### 1.18 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. Dumpsters shall be provided by the Prime 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 Prime Contractor may choose providing that the Prime Contractor shall make all arrangements and

obtain all approvals and permits necessary from the owner or officials in charge of such dumps. During disposal process, copies of daily receipts from dumpsite shall be submitted on a regular basis.

#### 1.19 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 Prime Contractor to maintain proper safety protection for the public while work is in progress or unattended.

#### 1.20 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 Prime Contractor.

- 1. All construction vehicles and equipment on site shall be effectively disabled and secured when not in use.

#### 1.21 PROJECT IDENTIFICATION

- A. No project sign is required by the Owner.
- B. If the Contractor wishes to provide a project sign, at his own expense, the Owner reserves the right to approve the content and appearance of the sign.
- C. Any signs will be located on site where directed by the Owner, and shall be relocated or removed if the Owner so directs.

#### 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 the Owner's personnel.

#### 1.23 SHUT DOWN NOTICE

- A. The Contractor shall notify the Owner, at least fourteen (14) calendar days in advance, of the need for any utility shut down to install or modify any utilities or building systems. The shutdown request shall indicate:
  - 1. The utility to be shutdown.
  - 2. The duration of the shutdown.
  - 3. The spaces anticipated to be affected by the shutdown.
- B. Shutdowns involving sprinkler systems or fire alarm systems, for which the Authority Having Jurisdiction (AHJ) requires a fire watch, the contractor performing the shutdown shall provide and pay for the fire watch at no additional cost to the Owner.
- C. Utility shutdowns affecting other buildings will be limited to occur after normal working hours. No additional compensation will be paid for overtime.

### II. PART II - PRODUCTS (Not Used)

### III. PART III - EXECUTION (Not Used)

#### END OF SECTION

01.50.00

## SECTION 01.77.00

### CLOSEOUT PROCEDURES

#### I. PART 1 - GENERAL

##### 1.01 SCOPE

- A. This section lists the procedures required for the proper completion of this project including processing the Release of Retainage and making the Final Payment to the Contractor.
- B. Consult the Individual sections of the specifications for requirements affecting Project Close Out.

##### 1.02 RELATED DOCUMENTS

- A. This section supplements the General Conditions.
- B. Consult the individual sections of the specifications for specific items required under those sections.

##### 1.03 SUBSTANTIAL COMPLETION

- A. Prior to requesting Substantial Completion the Contractor shall make a thorough inspection of the Work. During this inspection the Contractor shall prepare a comprehensive list of all items remaining to be completed or corrected. This list shall include all remaining Contractor and Subcontractor items to be provided under the Contract Documents.
- B. Upon completion of the items noted on the Contractor's list the Contractor shall notify the Architect that the Work is Substantially Complete. The Architect shall then conduct a similar thorough inspection. If the Architect agrees that the Work is Substantially Complete, the Architect will promptly make a thorough inspection and prepare a punch list, setting forth in accurate detail any items on the Contractor's list and additional items that are not acceptable or incomplete. The Contractor shall coordinate all Subcontractors to achieve prompt completion of the punch list.
- C. The Contractor shall not be relieved of the responsibility to provide Contract items left off of the Architect's punch list.
- D. If the Architect determines that the Work is not Substantially Complete, the Architect shall inform the Contractor of those items that must be completed before the Architect will prepare a punch list. Upon completion of those items, the Contractor shall again request the Architect to prepare a punch list.
- E. When the punch list has been prepared, the Architect will arrange a meeting with the Contractor and Subcontractors to identify and explain all punch list items and answer questions on work which must be done before final acceptance.
- F. The Architect may revise the punch list, from time to time, to ensure that all items of Work are properly completed.
- G. The Architect shall prepare the Certificate of Substantial Completion in accordance with the General Conditions.
- H. The Contractors shall correct the items noted on the punchlist(s). The General Contractor shall check the work of his forces, and of all sub-contractors to verify that the work has been corrected, and notify the architect that the project is ready for reinspection. The Architect and Engineers may, at their discretion, check the work to confirm the punchlist has been completed, and advise the Owner.
  - 1. If the Contractor calls for reinspection, and the Project is not actually ready or punchlist items have not been corrected and subsequent reinspections are required, the Architect reserves the right to bill



the Owner for the reinspections, and such monies will be deducted from the balance due to the Contractor.

#### 1.04 RECORD 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 or a secure location 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 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, or marked accurately on the as-built reflected ceiling plans.
  - 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, the Architect and Project Manager shall review the 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.

- J. The original hand-noted as-Built Drawings shall be scanned in color to Adobe Acrobat (\*.pdf) format and submitted on CD or DVD to the Designer, to be added to the complete plans as constructed.

#### 1.05 RECORD SURVEYS

- A. Not applicable.

#### 1.06 OPERATING AND MAINTENANCE INSTRUCTIONS

- A. Consult the individual sections of the specifications for the specific requirements for those sections and for further details and descriptions of the requirements.
- B. Prior to final payment and completion the Contractor shall provide all Operating Manuals and Maintenance Instructions as required by the Contract Documents.
- C. Operating Instructions and Manuals:
  - 1. Subcontractors, installers, and suppliers shall furnish to the Contractor two sets of operating and maintenance instructions of all mechanical, electrical, and manually operated equipment furnished and installed by them. Mechanical and electrical subcontractors shall furnish instructions as specified in their respective sections.
  - 2. The Contractor shall collect all of the above instructions, bind them into two complete sets, and submit them to the Architect who will deliver them to the Owner.
  - 3. The Contractor shall prepare a CD of all O&M items and deliver to the Owner.
  - 4. Submission of operating and maintenance instructions shall be a condition precedent to final payment
- D. Instruction of Owner's Personnel
  - 1. Where specified in the individual sections of the specifications, the Contractor and Subcontractor shall instruct the Owner's personnel at the site, in the use and maintenance of equipment installed under the Contract.
  - 2. Submission to the Architect of a certificate of compliance to this requirement, signed by the Contractor and the Owner's Representative, shall be a condition precedent to final payment.

#### 1.07 PARTIAL RELEASE OF RETAINAGE

- A. If within 65 days after Substantial Completion, any of the items on the Architect's punch list are not complete or if the Contractor has not provided the appropriate marked up As Built Drawings, Operating Manuals, Warranties, Guarantees, or Spare Parts the Architect shall assign a monetary value for each incomplete item as well as any other items as provided by M.G.L. c.30 §39K, and the Architect shall prepare a Certificate for Partial Release of Retainage.
- B. If the Architect is required to prepare a Certificate for Partial Release of Retainage the Contractor shall complete all remaining Work in accordance with the provisions of the General Conditions.
- C. The Contractor's signature on this Certificate shall be notarized.
- D. The Contractor may make a request for additional releases of retainage when portions of the Work listed on the Architect's punch list have been satisfactorily completed. Each request shall be accompanied by a new

application for payment and a new signed and notarized Certificate for Partial Release of Retainage.

- E. The Architect's inspections, required to complete the additional payment applications described above, are subject to provisions of the General Conditions.
- F. If the Owner has required Performance and Payment Bonds, then prior to the partial release of retainage, the General Contractor shall submit to the Owner Consent of Surety to Partial Release of Retainage using AIA Document G707A or an equivalent document.

#### 1.08 FINAL RELEASE OF RETAINAGE

- A. Prior to the final release of retainage, the General Contractor shall submit to the Owner:
  - 1. Consent of Surety, using AIA Document G707 or similar document, if performance and payment bonds were required for the project.
  - 2. Contractor's Affidavit of Release of Liens, using AIA Document G706A or equivalent. This document shall be accompanied by certified statements from all sub-contractors working on the project, that they have received all monies due, and have paid all suppliers and sub-sub contractors accordingly.
    - (a) Should any payments be outstanding and contingent upon receipt of the retainage in order to be paid, the General Contractor shall submit AIA Document 706, itemizing those items which have not been paid.

#### END OF SECTION

## SECTION 02.08.10

### LEAD, CADMIUM, AND CHROMIUM

#### PART 1 - GENERAL

##### 1.01 GENERAL REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.
- B. The Owner shall not incur any additional costs due to negligence or regulatory requirements imposed upon this project due to the Contractor failing to abide by the requirements of the specifications and applicable regulations.

##### 1.02 DEFINITIONS

- A. Site: Refers to the following sites as outlined by contract documents and drawings;
  - Carriage Barn, 55 Moy Ranch Road, Holden, MA
  - Pump House, 240 Temple Street, West Boylston, MA
- B. Owner: Refers to the City of Worcester and their designated, authorized personnel.
- C. Architect: Refers Nault Architects Inc., 71 Hope Avenue, Worcester, Massachusetts and their designated, authorized personnel.
- D. Consultant: Refers to ATLAS Technical Consultant, LLC (ATLAS), 73 William Franks Drive, West Springfield, Massachusetts and their designated, authorized personnel.
- E. Asbestos Abatement Contractor: Refers to the Contractor who has been awarded the Contract for performance of asbestos abatement work as outlined by this Section.

##### 1.03 DESCRIPTION OF WORK

- A. The Contractor shall be made aware that lead, cadmium and chromium is present within painted substrates or within building components throughout the sites which will be impacted by renovation and demolition activities on this project.
- B. The Contractor shall be required to comply with all aspects of the Occupational Safety and Health Administration (OSHA) Regulations pertaining to lead, cadmium and chromium with regards to disturbance of these materials when performing their work.
- C. It shall be the sole responsibility of the Contractor for compliance with this Section, including all costs associated with, but not limited to:
  - Compliance with OSHA 29 CFR 1926.62 Lead Regulations.
  - Compliance with OSHA 29 CFR 1926.1127 Cadmium Regulations.
  - Compliance with OSHA 29 CFR 1926.1126 Chromium Regulations.
  - Development and implementation of a Compliance Program.
  - Development and implementation of a Respiratory Program.
  - Development and implementation of a Medical Monitoring Program.
  - Development and implementation of a Hazard Communication Program.
  - Performance of any lead, cadmium or chromium testing required on the project.

- Performance of any Negative Exposure Assessments required.
  - Providing all medical examinations required.
  - Providing all equipment required (Including appropriate PPE)
  - Providing all engineering controls and associated work practices.
  - Disposing of all demolition material in accordance with local, state and federal regulations
- D. Due to the age of the building and previous painting history, the Contractor shall assume any paint surfaces to contain lead, cadmium and chromium and comply with this Section and OSHA Regulations accordingly. In addition, building components such as pipe sleeves, conduit, electrical equipment, etc. may also contain lead, cadmium or chromium that will require compliance with this Section. The Contractor, at their own discretion may elect to perform testing to confirm the presence of lead, cadmium and chromium in the building. However, all costs associated with additional testing and compliance with this Section shall be borne by the Contractor under the Base Bid.
- E. It should be noted that abatement of the paint by a licensed Lead Abatement Contractor shall not be required for performance of the renovation or demolition work outlined under this Contract. The building is not considered a residence where children under the age of six (6) reside, therefore, abatement of lead-containing components will not be required as per Massachusetts Department of Public Health (DPH) "Child Lead Poisoning and Prevention Regulations.
- F. If the Contractor deems that removal of the lead, cadmium or chromium will be an appropriate "engineering control" for compliance with their OSHA programs, then such removal shall be performed at the Contractor's own expense in accordance with applicable requirements. No additional compensation shall be granted for any engineering control methods employed by the Contractor for compliance with this Section, OSHA or other applicable requirements. In addition, all costs associated with removal of paint to meet compliance with applicable construction standards (i.e. welding, torch cutting, grinding, etc.) shall be the responsibility of the Contractor under the Base Bid.
- G. OSHA regulates activities that disturb lead, cadmium and chromium by the use of manual techniques. Regulated activities include abrasive blasting, welding, and cutting, burning on structures, manual scraping or sanding, and manual demolition of structures or components. The work practices described in this Section are intended to adequately protect the workers from exposure to lead, cadmium and chromium, provide a safe workplace, and protect the environment. However, it shall be the Contractors responsibility to comply with this Section as well as any other provisions/requirements outlined by OSHA and other applicable regulations.
- H. Materials and Equipment: The work of this Section, without limiting the generality thereof, includes the furnishing of labor, materials, tools, equipment, services and incidentals necessary to safely accomplish tasks which will disturb lead, cadmium and chromium.
- I. Approvals and Inspections: Temporary facilities, work procedures, equipment, materials, services, and agreements must fully comply with EPA, OSHA, and NIOSH recommendations, standards and guidelines, as well as any other applicable federal, state, and local regulations. Where there exists an overlap of these regulations and guidelines, the most stringent shall apply.
- J. Disposal: The Contractor shall dispose of demolition debris and associated materials in accordance with Part 3.06 of this Section.

#### 1.04 SITE WORK DEFINITIONS

- A. Action Level: Action Level as defined by OSHA shall refer to employee exposure, without regard to the use of respirators, to an airborne concentration of lead, cadmium or chromium calculated as an 8-hour time-weighted average (TWA).

- B. Competent Person: Competent Person shall refer to a person who is capable of identifying existing and predictable hazards in the surroundings or working conditions and who has authorization to take prompt corrective measures to eliminate them.
- C. HEPA Filter: HEPA Filter shall refer to a filter capable of filtering out monodispersive particles of 0.3 microns or greater diameter from a body of air at 99.97 percent efficiency or greater.
- D. Lead, Cadmium and Chromium Paint: Shall refer to paint found to contain lead, cadmium and chromium in any concentration or paint assumed to contain lead, cadmium and chromium as indicated in this Section.
- E. Permissible Exposure Limit (PEL): PEL shall refer to employee exposure, without regard to the use of respirators, to an airborne concentration of lead, cadmium or chromium calculated as an 8 hour time-weighted average.

#### 1.05 PERMITS AND INSPECTIONS

- A. Notifications/Approvals: The Contractor shall make, in proper and timely fashion, any necessary notifications to relevant Federal, State, and local authorities and shall obtain and comply with the provisions of all permits or applications required by the work specified, as well as make all required submittals required under those auspices. The Contractor shall indemnify the Owner, their representatives and agents from, and pay for claims resulting from failure to adhere to these provisions. The costs for permits, applications, and the like, are to be assumed by the Contractor.
- B. Fees, Permits and Licenses: The Contractor shall pay licensing fees, royalties, and other costs necessary for the use of any copyrighted or patented product, design, invention, or processing the performance of the job specified in this Section. The Contractor shall be solely responsible for costs, damages or losses resulting from any infringement of these patent rights or copyrights. The Contractor shall hold the Owner, Architect and Consultant harmless from any costs, damages, and losses resulting from any infringement of these patent rights or copyrights. If the Specification requests the use of any product, design, invention, or process that requires a licensing fee or royalty fee for use in the performance of the job, the Contractor shall be responsible for the fee or royalty and shall disclose the existence of such rights.
- C. Contractor shall be responsible for costs for licensing requirements and notification requirements and other fees related to the ability to perform the work in this Section. The Contractor shall be responsible for securing necessary permits for work under this Section, including removal, materials usage, or any other permits required to perform the specified work.

#### 1.06 SUBMITTALS

- A. Pre-Construction Submittals: Prior to the commencement of the required work, the Contractor shall provide the following to the Architect for approval:
- A written description detailing the means and methods to achieve compliance with the OSHA standards as well as the provisions outlined herein.
  - A written description detailing the means and methods for properly disposing of all demolition debris in accordance with local, state and federal regulations.
- B. Post-Construction Submittals: Final payment to the Contractor shall not be made unless the following items are submitted to the Architect for approval:
- Original Copy of Waste Disposal Manifests acknowledging disposal of any hazardous and non-hazardous waste material from the project showing delivery date, quantity, and

appropriate signature of landfill's authorized representative.

## 1.07 QUALITY CONTROL/ASSURANCE

- A. Training Requirements: Workers who will have the potential of lead, cadmium and chromium exposure shall have proof of successfully completing a training course which covers the topics required by OSHA. Contractors are also advised that training in other areas may be required by OSHA and are responsible to ensure that all training requirements for appropriate trades and procedures are met.
- B. Specified Supervisor Qualifications: The Contractor shall specify an on-site Supervisor or Competent Person who is fully qualified in all aspects of safe work practices and procedures, and have (or will have) completed a training course within the previous year prior to the commencement of the work. The training course will cover all topics required by OSHA as well as training in relevant federal, state and local regulatory requirements, procedures and standards, supervisory techniques, and proper disposal procedures.
- C. Site Specific Written Compliance Program: The program will be evaluated to ensure the elements required by OSHA are specific to the conditions at the job site.
- D. Respiratory Protection Program: The Contractor must provide for review a written respiratory protection program in accordance with 29 CFR 1920.103 if respiratory protection is to be worn during this project.
- E. Fit Test Records: If respiratory protection is to be worn as part of this project, records of successful respirator fit testing performed by a qualified individual within the previous 12 months, for each employee to be used on this project with the employee's name and social security number with each record.
- F. Medical Surveillance: The Contractor shall provide biological monitoring to workers who have the potential of lead, cadmium and chromium exposure. This monitoring shall be performed in accordance with OSHA. If workers are expected to exceed the action level for more than 30 days in any consecutive 12 months the Contractor shall institute a medical surveillance program in accordance with OSHA. A laboratory approved by OSHA shall conduct Blood level sampling and analysis.

## 1.08 CODES AND STANDARDS

- A. Work shall conform to the standards set by applicable federal, state and local laws, regulations, ordinances, and guidelines in such form in which they exist at the time of the work on the contract and as may be required by subsequent regulations.
- B. In addition to any detailed requirements of the Specification, the Contractor shall at his own cost and expense comply with all laws, ordinances, rules and regulations of federal, state, regional and local authorities regarding handling and storing of waste material.

NOTE: Regulations by the above and other governing agencies in their most current version are applicable throughout this project. Where there is a conflict between this Specification and the cited federal, state or local regulations or guidelines, the more restrictive or stringent requirements shall prevail. This Section refers to many requirements found in these references, but in no way is it intended to cite or reiterate all provisions therein or elsewhere. It is the Contractor's responsibility to know, understand, and abide by all such regulations, guidelines and common practices.

## PART 2 - PRODUCTS

## 2.01 MATERIALS AND EQUIPMENT

- A. The Contractor shall be responsible for providing all material and protective equipment required for performance of the work. The Contractor shall comply with all local, state and federal regulations pertaining to the selection and use of materials and equipment on this project. The Contractor shall provide a submittal on all materials and equipment to be used for review and approval by the Designer.

## PART 3 - EXECUTION

### 3.01 WORKER PROTECTION

- A. Initial Determination: The Contractor shall determine, through personal exposure monitoring on the job site or through relevant documentation from other similar jobs, whether workers will be exposed to airborne lead, cadmium or chromium at or above the OSHA Action Level and Permissible Exposure Limit. If exposures at or above the action level are documented, appropriate health and safety procedures identified herein shall be followed. If levels below the action level are documented, the Contractor shall exercise an appropriate level of care to ensure that exposures above the action level do not occur. Whenever there is a chance of equipment, process, control, personnel or a new task has been initiated that may result in additional employees being exposed to lead, cadmium or chromium at or at or above the action level or may result in employees already exposed at or above the action level being exposed above the PEL, the Contractor shall conduct additional monitoring.

Note: The Contractor shall be responsible for performing a negative exposure assessment on each trade subject to the OSHA Regulation. The assessment shall take place during routine work activities, which will simulate employees, actual exposure levels to lead, cadmium and chromium. All assessments shall take place over an 8-hour time period and shall include all appropriate PPE and biological monitoring required as stated herein.

- B. Personal Hygiene Practices: Where exposures to airborne lead, cadmium and chromium above the OSHA PEL occurs or may be expected to occur, the Contractor shall enforce and follow good personal hygiene practices. These practices shall be performed until personal exposure sampling indicates that exposures are below the PEL at which time the Contractor has the option to continue or discontinue the use of personal hygiene facilities. These practices shall include but not be limited to the following:
1. No eating, drinking, smoking, or applying cosmetics in work area. The Contractor will provide a clean space, separated from the work area, for these activities.
  2. Workers must wash upon leaving the work area. The Contractor will provide wash facilities. This wash facility will consist of, at least, running potable water, towels, and a HEPA vacuum. Upon leaving the work area, each worker will remove and dispose of work suit, wash and dry face and hands, and vacuum clothes.
  3. Disposable clothing, such as TYVEK suits, and other personal protective equipment (PPE) must be donned prior to entering work area. A clean room will be provided for workers to put on suits and other personal protective equipment and to store their street clothes. Disposable suits shall be used once, then properly discarded.
  4. A lavatory facility must be provided and located adjacent to the work area. The eating and drinking area, clean room, and the lavatory facility must be maintained in a clean and orderly fashion at all times. The Contractor will provide portable lavatories when needed and disinfect them daily.
  5. If air-monitoring data gathered by the Contractor shows that employees' exposure to airborne lead, cadmium or chromium exceeds the PEL, the following conditions apply:
    - a. Showers must be provided. Shower water must pass through at least a 5.0 micron filter before returning to the public waste system.



- b. Workers must shower upon leaving work area.
- c. Three-stage decontamination unit must be established consisting of an Equipment Room, Shower, and Clean Room in series.

### 3.02 WORK AREA SET UP

- A. Site Safety: The Contractor is responsible for all safety at the work site. This includes, but is not limited to, electrical safety, mechanical (tool) safety, fire safety, and personnel protective safety. Safety requirements are, for the most part, common sense and sound business practice; however, the Contractor is advised that federal, state, and local regulations exist which govern safety on the work site. Therefore, in addition to the following, the Contractor is responsible for adhering to the most stringent requirements in effect.
- B. Signage: Prior to the preparation for work which will disturb lead, cadmium or chromium, the Contractor shall place warning signs immediately outside all entrances and exits to the area, warning that lead, cadmium and chromium work is being conducted in the vicinity. The signs shall be at least 20" x 14" and read:

WARNING:  
LEAD, CADMIUM, CHROMIUM WORK AREA  
POISON  
NO SMOKING, EATING OR DRINKING  
ALLOWED IN THE WORK AREA

The signs shall be in bold lettering with lettering not smaller than two inches tall. Should personal exposure monitoring results indicate that exposures are below the Action Level, then the signs will not be required.

- C. Access to Work Areas: It will be the Contractor's responsibility to allow only authorized personnel into the work area. Barrier tape shall be used to limit access to the exterior work area. Contractor shall maintain a bound logbook, in which any person entering or leaving the work area must sign and enter the dates and times of entry and departure. Should personal exposure results indicate the exposures are below the Action Level, then a logbook will not be required. The Contractor or competent person will not allow anyone access to the work area unless they have successfully passed an approved training program, and have been fitted and wearing a properly fitted respirator.
- D. Dumpsters used to store hazardous waste shall be DOT approved, solid enclosed containers and locked and secured at all times.
- E. Containment controls (including critical barriers, protective coverings, HEPA-filtered ventilation and decontamination facilities) may be required for renovation/demolition work. The degree of containment shall be appropriate for the anticipated levels of airborne dust. The lower the level of airborne dust, the lesser the requirements necessary to control lead, cadmium and chromium emissions at the job site.
- F. The Contractor shall isolate work areas for the duration of work by completely sealing off all openings in the work area. Isolation sealing shall be accomplished by constructing critical barriers where necessary around the work area perimeter. The work area shall be sealed airtight to the greatest extent possible.
- G. The Contractor shall erect one or more Decontamination Facilities (if applicable) to serve each work area. The facility will consist of series of two or more connected chambers including, at a minimum, a clean room and a shower/wash room, separated by an air lock. Unless otherwise specified, the shower/wash room shall be contiguous to the work area. Non-contiguous, remote, three-chamber

decontamination facilities may be substituted with the Consultant's prior written approval. Three-chamber decontamination facilities shall include an equipment room to be used for removal and temporary storage of contaminated worker clothing, equipment, and other items leaving the work area, prior to decontamination in the shower/wash room of the decontamination facility. In all cases, non-emergency access between contaminated and uncontaminated rooms or areas shall only be through the Decontamination Facility/Wash Room.

- H. Ensure that barriers and linings are effectively sealed and taped at all times, and that the Shower/Wash Room floor is completely watertight. Repair damaged barriers, and remedy defects immediately upon discovery. Visually inspect enclosures at the beginning of each work period.
- I. All renovation/demolition work areas shall remain isolated from all other trades on the project and remain inaccessible to the public. Contractor shall monitor the access to the renovation/demolition work areas. The below listed items are required to control the generation of lead, cadmium and chromium containing dust during renovation/demolition activities if worker exposure is above the PEL. The Contractor is ultimately responsible for cleaning all generated dust and debris from renovation/demolition operations and must maintain work areas free from dust generated from renovation/demolition activities.
  - 1. Signs shall be posted at all approaches to the work area warning that work involving lead is being conducted in the vicinity. Signs shall be in bold lettering not smaller than two inches tall.
  - 2. Barriers shall not be removed until the work areas are thoroughly cleaned and approved by the Consultant.

### 3.03 WORK PROCEDURES

- A. The Contractor shall initiate, and continue, sufficient engineering and work practice controls, as described in the Contractor's Compliance Programs, to reduce and maintain worker exposures to lead, cadmium and chromium at or below the Action Level or Permissible Exposure Limit.
- B. The following work practices are specifically required by these specifications:
  - 1. All persons except those directly involved in the work shall be excluded from the work area. Physical barriers shall be used, where necessary, to limit access to the work area for the duration of the renovation activities. (Warning signs may need to be posted in accordance with applicable regulations.)
  - 2. Provide hand washing facilities and assure that all workers thoroughly wash their hands and face upon exiting the work area. Workers shall pay careful attention to cleanse the hands and face when decontaminating (Provide hygiene facilities, including shower, as required based on initial assessment and continued monitoring.)
  - 3. Thoroughly wet the areas to be demolished and mist the air to reduce the potential for creating airborne lead, cadmium and chromium dust.
  - 4. All equipment used by the workers inside the work area shall be either left in the work area or thoroughly decontaminated before being removed from the area. Extra work clothing (in addition to the disposable suits supplied by the Contractor) shall be left in the clean area until the completion of work in that area. The clean area shall be cleaned of all visible debris and disposable materials daily.
  - 5. Under no circumstances shall workers or supervisory personnel eat, drink, smoke, chew gum, or chew tobacco in the work area; to do so shall be grounds for the Engineer to stop all demolition operations. Only in the case of life threatening emergency shall workers or supervisory personnel be allowed to remove their protective respirators, if applicable, while in the work area. In this situation, respirators are to be removed for as short a duration as possible.
  - 6. Feasible engineering controls shall be implemented by the Contractor to minimize the possibility of contamination of areas adjacent to the work area. The following activities are the minimum requirements of this section and affect the renovation/demolition performed on the project:

- a. No torch cutting, mechanical sanding or stripping or abrasive methods of paint removal shall occur.
  - b. No renovation/demolition activities may occur which increase the workers exposure above the Action Level or Permissible Exposure Limit as described under OSHA.
7. Workers shall be informed of the components to be impacted during renovation/demolition that are identified as containing lead, cadmium and chromium.
8. Separation of Trades: Unprotected, untrained workers or trades shall not perform any related work within the same areas as demolition involving components identified as containing lead, cadmium and chromium. Other trades may not enter these areas until clean-up procedures are completed.

### 3.04 AIR SAMPLING – CONTRACTOR

- A. Personal Exposure Monitoring: The Contractor shall perform personal exposure sampling to monitor personal exposure levels to airborne lead, cadmium and chromium. Samples shall be taken for the duration of the work shift or for eight hours, whichever is greater. Personal samples need not be taken every day after the first day if working conditions remain unchanged, but must be taken every time there is a change in the removal operation, either in terms of the location or the type of work. Sampling will be used to determine eight-hour Time-Weighted-Averages (TWA). The Contractor is responsible for personal sampling as outlined in the OSHA Standards.
- B. Frequency: Air monitoring frequency will be established in accordance with the requirements set forth the OSHA Standards.

### 3.05 CLEAN-UP PROCEDURES

- A. When work is in progress, the work site shall be cleaned at end of each day's activities. The building shall be secured to prevent entry by any person after termination of workday. Durable equipment, such as power and hand tools, generators, and vehicles shall be cleaned monthly.
- B. Equipment shall be cleaned by HEPA vacuuming. Surfaces shall be maintained as free as practicable of accumulations of dust and debris. Clean up of dust and debris shall be accomplished with a HEPA vacuum or wet methods. The debris shall be misted with water with an airless type sprayer and collected with a mop or broom.

### 3.06 DISPOSAL OF WASTE MATERIAL

- A. General:

All costs associated with proper disposal of the waste materials (whether hazardous, non-hazardous or regulated) shall be borne by the Contractor under the Base Bid. All materials, whether hazardous, non-hazardous or regulated shall be disposed of in accordance with all laws, and the provisions of this Section and any or all other applicable federal, state county or local regulations and guidelines. It shall be the sole responsibility of the Contractor to assure compliance with all laws and regulations relating to disposal.

- B. Non-Hazardous Materials: The Contractor shall contact the regional EPA, State and local authorities to determine disposal requirements for construction and demolition debris that contains lead, cadmium or chromium (non-hazardous). The Contractor shall be responsible for providing all dumpsters/containers required for collection and disposal of such material as well as disposal in an approved landfill.
- C. Hazardous Waste/Regulated Materials: All materials which are determined to be hazardous waste or

regulated waste for lead, cadmium or chromium shall be disposed of by the Contractor as specified herein. The Contractor shall perform representative Toxicity Characteristic Leaching Procedure (TCLP) tests of demolition debris to ensure the material is properly profiled for disposal. This shall also include all testing required by the disposal or recycling facility. All costs associated with TCLP testing to profile the waste material shall be borne by the Contractor. If the material is found to be hazardous waste or regulated waste, the Contractor shall provide appropriate drums/containers for use. The Contractor shall properly handle and transport all hazardous waste or regulated waste material into the drums/containers provided.

- D. All TCLP sampling and analysis shall be subject to approval by the Owner. A submittal shall be provided by the Contractor which details the procedures for the sampling including the name of the sampler, methodology for sample collection, sample preparation and chain-of-custody procedures. The laboratory to be used shall be certified by the State of Massachusetts and the American Industrial Hygiene Association (AIHA).
- E. No demolition or recyclable material shall be removed from the site unless approved by the Owner. The Contractor shall provide the name of the transporter and disposal facility for each type of waste (i.e. hazardous, non-hazardous, regulated or recyclable) for review and approval by the Owner.
- F. Recyclable/Salvaged Materials (Non-Hazardous): The Contractor shall note that any demolition material deemed to be recyclable or salvageable by the Contractor may contain lead, cadmium or chromium which could result in the recycling or salvage facility rejecting acceptance regardless of the lead, cadmium or chromium content or TCLP result. The Contractor is hereby notified of this fact and shall bear all responsibilities and costs associated with acceptance and/or rejection of such materials in a C&D landfill, waste disposal facility and/or a recycling/salvage facility under their Base Bid.
- G. The following materials are considered Hazardous Waste (Lead, Cadmium or Chromium) if they are generated in a form by themselves and shall be disposed of as such:
  - a. Paint chip and paint chip debris
- H. The Contractor shall be responsible for proper disposal of all materials outlined herein. In addition, all costs associated with worker protection or environmental protection requirements for such work shall be the responsibility of the Contractor.

#### **END OF SECTION**

## SECTION 02.08.20

### ASBESTOS ABATEMENT

#### PART 1 - GENERAL

##### 1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.
- B. The Owner shall not incur any additional costs due to negligence or regulatory requirements imposed upon this project due to the Contractor failing to abide by the requirements of the specifications and applicable regulations.

##### 1.02 SUMMARY

- A. Provide all labor, materials, and equipment necessary to complete work of this Section, including but not limited to the following:
  - 1. Abatement of the asbestos roofing material by a licensed Contractor is not required under this Contract. Specifically, the Contractor shall comply with OSHA 29 CFR 1926.1101 and MA DLS 454 CMR 28.00 Regulations with regards to protection and training of employees when performing this work.
  - 2. The Contractor shall also provide the project name, contact person and phone number of three (3) projects which were successfully completed of similar size and scope within the last two (2) years. Each project shall have been completed in good standing and the work performed by the Contractor for each project resulted in no work violations/citations, contract delays, contract extensions/disputes or litigation. Failure to provide this information and/or meet the approval of these qualifications by the Owner may result in rejection of the Contractor.
  - 4. The Owner shall also reserve the right to research and utilized other information received from any other projects completed by the Contractor for any project not provided under 1.2 B (2) above, regardless of the date completed, location or circumstances resulting from the outcome of their work. The Owner shall reserve their right to reject the Contractor based upon this review, for any reason, if found to be in the best interest of the Owner.

B. Items to Be Installed Only: None

C. Items to Be Furnished Only: None

D. Related Sections: None

##### 1.03 ALTERNATIVES

A. Alternates: None

##### 1.04 UNIT PRICES

A. Unit Prices: None.

##### 1.05 DEFINITIONS

- A. Site: Refers to the following sites as outlined by contract documents and drawings:\
- Carriage Barn, 55 Moy Ranch Road, Holden, MA
  - Pump House, 240 Temple Street, West Boylston, MA
- B. Owner: Refers to the City of Worcester and their designated, authorized personnel.
- C. Architect: Refers Nault Architects Inc., 71 Hope Avenue, Worcester, Massachusetts and their designated, authorized personnel.
- D. Consultant: Refers to ATLAS Technical Consultant, LLC (ATLAS), 73 William Franks Drive, West Springfield, Massachusetts and their designated, authorized personnel.
- E. Contractor: Refers to the Contractor who has been awarded the Contract for performance of asbestos roofing materials abatement work as outlined by this Section.
- F. Asbestos Project Designer: The MADLS certified Asbestos Project Designer for this project is Mr. Edward Kolodziej (#AD074321), ATLAS Technical Consultant, LLC.

#### 1.06 SUBMITTALS

- A. Refer to Division 1 Section Submittal Procedures for administrative and procedural requirements for submitting Shop Drawings, Product data, Samples, and other miscellaneous submittals.
- B. In addition to items required by other sections of the Project Manual, the following submittals are required for review and approval by the Owner on/or before the Pre-Construction Meeting:
1. Copies of notifications
  2. Chain-of-Command list of all personnel on-site and emergency contact person(s)
  3. Work plan which dictates all removal procedures to be implemented
- C. In addition to the items required by other sections of the Project Manual, the following submittals are required for final payment
1. Contractor's Daily Log Notes
  2. Personal Monitoring Results
  3. Copy of Waste Shipment Records

#### 1.07 DESCRIPTION OF WORK

- A. Work: This section details all areas where asbestos abatement work is to be performed and lists areas requiring special protection during the abatement work. The Contractor shall furnish all labor, materials, services, training, insurance, and equipment as needed to complete removal of asbestos-containing and asbestos-contaminated materials located as indicated below. The Asbestos Abatement Contractor shall follow all Federal, State and local ordinances, regulations and rules pertaining to asbestos, including its abatement, storage, transportation and disposal.
- B. The Contractor shall be responsible for verifying all quantity estimates in preparation of their bids, including the location and conditions of all asbestos-containing materials to be abated under this contract. No additional compensation and/or contract time shall be granted to the Contractor for failure to perform this requirement and no compensation shall be granted for variations in the quantities presented herein.
- C. The Contractor shall begin the work within a mutually agreed upon time with Owner, Architect and

General Contractor. Contractor shall work in harmony with all other trades performing separate contract work in the building.

D. The following Scope of Work and Requirements shall be applicable for asbestos abatement work at the following sites:

- Carriage Barn, 55 Moy Ranch Road, Holden, MA
- Pump House, 240 Temple Street, West Boylston, MA

If a specific note for an abatement procedure or requirement is not mentioned herein, the Contractor shall perform the removal of such material in accordance with local, state and federal regulations. The Contractor shall also coordinate all work with the General Contractor, as applicable.

1. All Asbestos Abatement work shall take place in accordance with the provisions outlined herein as well as current local, state and federal regulations. No additional compensation shall be granted to the Contractor for compliance with applicable laws when performing the abatement work at the site. This shall include any regulatory requirements that mandate additional or more restrictive containment and abatement procedures than what has been presented herein. It shall be the Contractor's responsibility to comply with such regulations as well as any other additional requirements outlined by this Section.
2. The Contractor shall be responsible for all demolition work required to access all asbestos materials for abatement. All demolition debris shall be disposed of as asbestos (unless otherwise directed by the Consultant).
3. Coordination shall exist between the abatement under this Section and the disconnection of existing electrical, plumbing or fire suppression equipment within the building by the Owner.
4. The following requirements shall be applicable for asbestos abatement activities at the site:
  - a. All roof removal work shall comply with the following requirements under MADEP 310 CMR 7.15 (10) and MA DLS 454 28.12:
    - i. If the requirements of 310 CMR 7.15(10) are followed, asbestos-containing asphaltic roofing (i.e. roofing materials) may be disposed of in any landfill permitted by the Department to accept solid waste pursuant to 310 CMR 19.000. If the roofing materials are not handled in accordance with MADEP 310 CMR 7.15 (10) and it has been determined that asbestos fibers were released during handling, removal or disposal, then the roofing materials shall be disposed of in a landfill that has obtained a special waste permit to accept asbestos wastes or is managing such wastes in accordance with MADEP 310 CMR 19.061.
    - ii. Roof level heating and ventilation air intakes shall be isolated by covering the intakes with six-mil thickness plastic sheeting prior to the start of the removal work
    - iii. Roofing materials shall be removed intact to the greatest extent feasible.
    - iv. All roofing materials shall be adequately wet during removal.
    - v. Roofing materials shall not be dropped or thrown to the ground. Unless the roofing material is carried or passed to the ground by hand, it shall be lowered to the ground by crane or hoist or transferred in dust-tight chutes.
    - vi. Removed roofing materials shall be kept adequately wet at all times. All removed roofing materials shall be placed in an impermeable waste bag (six-mil thickness) or wrapped in plastic sheeting (minimum six-mil thickness), sealed with duct tape or the equivalent and lowered to the ground prior to the end of each work shift. No removed roofing materials shall be allowed to remain on the roof overnight.
    - vii. All removed roofing materials shall be removed from the roof and placed in the on-site container prior to the end of each work shift.
    - viii. There shall be no visible emissions during the removal, processing, packaging or transporting of the roofing materials for disposal as asbestos-containing waste material (ACWM).

5. Any damage as a result of the abatement work shall be repaired by the Contractor or compensate City of Worcester.
6. Comply with requirements for final clearance and release of a work area as described in this Section and as required by applicable regulations prior to tear down of polyethylene and area clean up. Perform Final Clearance Visual Inspections in accordance with requirements outlined in Section 3.3.
7. Refer to Attachment A (Table 1.0) for a summary of materials that require abatement at the site. In addition, refer to the Drawings for locations identified by Table 1.0.

#### 1.08 CODES AND STANDARDS

- A. All work shall conform to the standards set by applicable Federal, State and local laws, regulations, ordinances, and guidelines in such form in which they exist at the time of the work on the contract, and as may be required by subsequent regulations. In addition to any detailed requirements of the Specification, the Contractor shall at his own cost and expense comply with all laws, ordinances, rules and regulations of Federal, State, Regional and Local Authorities regarding handling and storing of asbestos waste material. This includes all applicable OSHA regulations.
- B. All regulations and other governing agencies in their most current version are applicable throughout this project. Where there is a conflict between this Specification and the cited State, Federal, or local regulations, the more restrictive or stringent requirements shall prevail. This Section refers to many requirements found in these references, but in no way is it intended to cite or reiterate all provisions therein or elsewhere. It is the Contractor's responsibility to know, understand, and abide by all such regulations and common practices.

#### 1.09 FEES, PERMITS & LICENSES

- A. The Contractor shall pay all licensing fees, royalties, and other costs necessary for the use of any copyrighted or patented product, design, invention, or process in the performance of the work specified in this section. The Contractor shall be solely responsible for costs, damages, or losses resulting from any infringement of these patent rights or copyrights. The Contractor shall hold the Owner and Consultant harmless from any costs, damages, and losses resulting from any infringement of these patent rights or copyrights. If the Contract Specification requests the use of any product, design, invention, or process that requires a licensing, patent or royalty fee for use in the performance of the job, the Contractor shall be responsible for the fee or royalty fee and shall disclose the existence of such rights.
- B. The Contractor shall be responsible for costs for all licensing requirements, where applicable and notification requirements and all other fees related to the Contractor's ability to perform the work in this Section.
- C. Secure all necessary permits for work under this Section, including hauling, removal, and disposal, fire, and materials usage, or any other permits required to perform the specified work.

#### 1.10 CLEANING

- A. Maintain the work site in a neat and orderly manner at all times, so as not to interrupt or infringe upon the work of other trades. Perform all final cleaning of abatement work areas as required by this Section and Massachusetts Regulations to the approval of the Owner's Consultant. Upon completion of work in any given area, Asbestos Abatement Contractor shall remove all material and equipment associated with the work, not necessary to complete other phases of the work in that area.
- B. At the end of each work day the Contractor shall ensure that the building is secured and all exterior areas



of the building are free and clear of all work-related debris.

- C. Comply with all requirements for final clearance and release of a work area as described in this Section and required by the Massachusetts Regulations prior to take down of polyethylene and area clean-up.

#### 1.11 COORDINATION

- A. Extend full cooperation to Owner in all matters involving the use of Owner's facilities. At no time shall the Contractor cause or allow to be caused conditions, which may cause risk or hazard to the general public, or conditions that might impair safe use of the facility.
- B. Complete Asbestos activities in the phases of the final schedule agreed upon by Owner.
- C. The Contractor shall be made aware that separate contracts will be engaged by the Owner for other work to be performed within the site building. The Contractor shall be made aware that those Contracts will be on-going during the same time as the asbestos abatement work outlined herein. The work of this Contract shall proceed in "harmony" with the work of those projects, which will be subject to coordination by the Owner. No additional compensation or contract time shall be granted for failure to recognize and comply with this requirement.

#### 1.12 SUBSTITUTION OF MATERIALS OR METHODS

- A. Owner and Consultant approval is required for all modifications to methods, procedures, and design, which may be proposed by the Contractor. It is the intent of these documents to allow the Asbestos Abatement Contractor to present alternative methods to the abatement processes herein, for review by Owner and Consultant. Any such modifications or substitutions to methods, procedures, or design shall comply with applicable regulations. The Contractor shall submit the proposed modification or substitution in accordance with the requirements of the General Conditions, and no later than fifteen (15) working days prior to planned commencement of proposed modification, for review and approval.
- B. Unless requests for modification or substitution are made in accordance with the above instructions and the instruction of the General Conditions, supported by sufficient proof of equality, the Contractor shall be required to furnish the specifically named or designed items, methods or procedures designated in this Section.
- C. If the modification or substitution necessitates changes or additional work, same shall be provided and the Contractor shall assume the cost and the entire responsibility thereto unless performed under the approved Change Order Process.
- D. The Owner and Consultant's permission to make such substitution shall not relieve the Contractor from full responsibility for the work.

#### 1.13 SITE SECURITY

- A. The Contractor is responsible for performing all work under this contract without contaminating the building or environment with asbestos fibers. This includes interior areas, outside containment locations, machinery and equipment and any other release into unregulated spaces. The Contractor is responsible for making right and clean-up of any such contamination if found to be present.
- B. The Contractor will be responsible for the security of the abatement area, allowing only authorized personnel into the area, and securing assigned entrances and exits at the end of the work day. Signs will be posted prior to asbestos removal as required in 29 CFR 1926.1101.

#### 1.14 PROJECT MONITOR

- A. The Owner has retained ATLAS, as their Consultant for technical advisement and project management during the Project. In addition, ATLAS will perform project monitoring services during abatement activities. The Asbestos Abatement Contractor shall regard ATLAS's direction, as authoritative and binding as provided herein, in matters outlined by this Section.
- B. ATLAS's licensed Project Monitor, acting as the Owner's Representative, will perform monitoring of the Contractor's work practices and performance, inspection of the worksites, and air sampling and analysis for each phase of the asbestos removal project. Quality control and testing criteria have been established in these specifications, and will be strictly enforced. ATLAS's Project Monitor will review matters relating to safety, interpretation of the specifications, and scheduling of work, and will make decisions upon consultation with the Owner.

#### 1.15 TEMPORARY FACILITIES

- A. The Contractor shall coordinate the Owner as to the use of the existing power and water within the building.
- B. All temporary hook-ups to the existing power and water within the building shall be the responsibility of the Contractor.
- C. The Contractor shall also be responsible for providing all temporary toilets required for workers to use during the construction project.

### PART 2 - PRODUCTS

#### 2.01 MATERIALS

- A. All materials and equipment proposed to be used on this project shall be subject to the acceptance of the Owner and Consultant. The Contractor shall comply with local, state and federal regulations pertaining to the selection and use of materials and equipment on this project. The Contractor shall provide a submittal on all materials and equipment to be used for review and approval by the Consultant prior to commencement of the work.

### PART 3 - EXECUTION

#### 3.01 WORK PROCEDURES

- A. All asbestos abatement work shall take place in accordance with the provisions outlined herein as well as local, state and federal regulations. In particular, Massachusetts DLS and DEP regulations regarding asbestos removal and disposal shall be adhered to.
- B. Visual Inspections: Work areas shall pass a visual inspection conducted by the Site Supervisor responsible for the project and the Owner's Project Monitor (i.e. Consultant). The criterion for this inspection will be the absence of visible debris in accordance with ASTM standard E1368-90. A certificate of visual inspection will be signed by the Project Monitor and the Site Supervisor after final inspection clearance. The Contractor will be responsible for the costs of visual inspection and testing required for any work which fails the visual inspection.

#### 3.02 DISPOSAL

- A. Packaging: Prior to post-abatement inspection, asbestos- containing waste shall be packaged in sealed double containers and removed from the work area to a specified transportation vehicle or a designated holding area approved by the Owner. At the end of each work day the Contractor shall remove the debris accumulated during that day's work activities using procedures outlined in the Specifications. The

Contractor shall provide a daily tally of all bags removed.

- B. Temporary Storage of Waste: An area for temporary storage of asbestos waste must be approved by the Owner. Asbestos waste may only be stored in an enclosed container which is posted and secured whenever not in use. Asbestos waste material shall be loaded into a waste transportation vehicle/dumpster and hauled away as soon as there is a sufficient quantity available for direct transportation to the approved disposal site.
- C. OSHA/EPA labeling: Asbestos warning labels having permanent adhesive and waterproof print, or being permanently printed on the container, shall be affixed to the outside of all asbestos containers, and each inside bag, except that nonfriable asbestos-containing waste that has not been and does not have a high probability of becoming, crumbled, pulverized, or reduced to powder need not be labeled. Labels will be conspicuous and legible and shall contain the following warning:

DANGER  
CONTAINS ASBESTOS FIBERS  
MAY CAUSE CANCER  
CAUSES DAMAGE TO LUNGS  
DO NOT BREATHE DUST  
AVOID CREATING DUST

The Contractor is directed to properly label each waste bag in accordance with the latest NESHAP standard, Section 61.150, with the following information:

SITE OWNER'S NAME SITE NAME

- D. DOT labeling and marking: A DOT "class 9" shipping label and DOT mark shall be applied to or be printed on each packaging of asbestos-containing materials; except for nonfriable asbestos-containing materials that did not become crumbled, pulverized, or reduced to powder; or a limited quantity of asbestos-containing material which is not being transported by air.
- E. EPA vehicle marking: Each vehicle transporting asbestos-containing waste shall be marked with asbestos danger signs during loading and unloading of the waste, in accordance with the NESHAP, 40 CFR 61.150.
- F. Asbestos waste shipment records: The Contractor shall prepare the waste shipment records. Completed waste shipment record(s) signed by the Contractor, all transporter(s), transferor(s), disposal and/or conversion facility(s), shall be provided to the Owner within 30 days of the time at which the asbestos-containing wastes are received at the disposal and/or conversion facility (ies), which shall be no longer than 40 days after the waste was accepted by the initial transporter. The Waste Shipment Record shall specify the designated number of bags or cubic yard(s) of asbestos waste.
- G. Depositing: Asbestos waste shall be deposited as soon as practical at a regulated waste disposal site, except for EPA "Category I" nonfriable ACM that has not become friable, nor will be or has been sanded, ground, cut, or abraded. Waste disposal sites for asbestos materials will be in accordance with 40 CFR 61.25, Waste Disposal Sites. The Contractor shall provide written evidence that the site is approved for asbestos disposal by the EPA, State and local regulatory agencies.

### 3.03 QUALITY CONTROL AND TESTING

- A. The Contractor shall be responsible for achieving acceptable visual inspection for ALL abatement areas as follows:

1. The Work Area and perimeter shall be visually inspected by the Contractor's Site Supervisor and ATLAS's Project Monitor for dust, debris and other particulate residue. The Work Area and perimeter shall be repeatedly cleaned by the Contractor or other entity carrying out the work operation until the no Visible Debris criterion is achieved.

**END OF SECTION**

ATTACHMENT A

TABLE 1.0

SUMMARY OF ACM TO BE ABATED

Table I CITY OF WORCESTER CARRIAGE BARN & PUMP HOUSE			
LOCATION	MATERIAL	RESULTS	NOTES
Carriage Barn	Roof Chimney Sealant	12% Chrysotile	Refer to Architectural Drawings
Pump House	Lower Roof Roofing Tar	11% Chrysotile	Refer to Architectural Drawings
Pump House	Lower Roof Roof Flashing	3% Chrysotile	Refer to Architectural Drawings

## SECTION 02.41.00

### SELECTIVE DEMOLITION

#### I. PART 1 - GENERAL

##### 1.01 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.
- B. This Contractor must be familiar with all other Divisions and Sections of the Specifications which affect the work of this Section.

##### 1.02 DESCRIPTION OF WORK

- A. **Work included:** Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to selective demolition of the following:
  - 1. Pump House: Removal of built-up roof system, including underlayments and flashings down to the roof deck.
  - 2. Carriage Barn: Removal of shingle roof system, including underlayments and flashings down to the roof deck.
  - 3. Disposal of demolished items.
- B. **Alternates:** None.
- C. **Items to Be Installed Only:** Install the following items as furnished by the designated Sections:
  - 1. None.
- D. **Items to Be Furnished Only:** Furnish the following items for installation by the designated Sections:
  - 1. None.
- E. **Related Work Specified Elsewhere:** The following items are not included in the Section, and will be performed by the designated Sections:
  - 1. 02.08.00 - ASBESTOS ABATEMENT, for removal of Asbestos-Containing Materials (ACM).

##### 1.03 SUBMITTALS

- A. Refer to Section 01.33.00 - SUBMITTALS for requirements and procedures.
- B. Schedule: Provide detailed sequence of demolition and removal work.

##### 1.04 JOB CONDITIONS

- A. Condition of Structures: Owner assumes no responsibility for actual condition of items or structures to be demolished.
- B. Protections: Provide temporary barricades and other forms of protection as required to protect Owner's personnel and from injury due to selective demolition work.
  - 1. All work will be performed on the roofs of unoccupied storage buildings which will remain open to Owner's personnel during construction.
  - 2. Provide protective measures as required to provide free and safe passage of Owner's personnel.

3. Protect from damage existing finish work that is to remain in place and becomes exposed during demolition operations. Protect site with suitable coverings when necessary.
  4. Remove protections at completion of work.
- C. Damages: Promptly repair damages caused to adjacent facilities by demolition work at no cost to Owner.
  - D. Traffic: Conduct selective demolition operations and debris removal in a manner to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.
  - E. Do not close, block or otherwise obstruct streets, walks or other occupied or used facilities without written permission from authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
  - F. Utility Services: Maintain existing utilities indicated to remain, keep in service, and protect against damage during demolition operations.
  - G. Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to governing authorities.
  - H. Environmental Controls: Use temporary enclosures, and other suitable methods to limit dust and dirt rising and scattering in air to lowest practical level. Comply with governing regulations pertaining to environmental protection.

## **II. PART 2 - PRODUCTS**

2.01 Not Used.

## **III. PART 3 - EXECUTION**

### **3.01 INSPECTION**

- A. Prior to commencement of selective demolition work, inspect areas in which work will be performed. Photograph existing conditions to structure surfaces, equipment or to surrounding properties which could be misconstrued as damage resulting from selective demolition work; file with Architect prior to starting work.

### **3.02 ASBESTOS ADVISORY**

- A. Refer to Section 02.08.00- ASBESTOS ABATEMENT.

### **3.03 LEAD-CONTAINING PAINT**

- A. The General Contractor shall be made aware that lead-containing paint is present on architectural components to be affected by the renovation work under the Contract.
- B. With regards to renovation work performed under this project, abatement of lead-containing paint by a licensed Lead Abatement Contractor in accordance with Massachusetts Department of Public Health (DPH) 105 CMR 460.000 Regulations will not be required.
- C. In addition to those requirements, the all Contractors working at the site shall also comply with the OSHA "Lead in Construction Standard at 29 CFR 1926.62 as well as properly dispose of all material that contains lead in accordance with applicable Massachusetts Department of Environmental Protection (DEP) and federal EPA Regulations.
- D. Prior to the start of the work, the General Contractor shall be required to provide a written description (i.e. submittal) that details the means and methods to achieve compliance with the provisions outlined herein.

### **3.04 PREPARATION**



- A. File all appropriate paperwork and obtain all required permits prior to the start of demolition.
- B. Cease operations and notify the Owner's Representative immediately if safety of structure appears to be endangered. Take precautions to support structure until determination is made for continuing operations.

### 3.05 GENERAL DEMOLITION

- A. Do not perform more demolition than can be made weather-tight that same day. "Weather-tight" shall mean the complete installation of the specified underlayments.
- B. Perform selective demolition work in a systematic manner. Use such methods as required to complete work indicated on Drawings in accordance with demolition schedule and governing regulations.
- C. Provide services for effective air and water pollution controls as required by local authorities having jurisdiction.
- D. If unanticipated mechanical, electrical or structural elements which conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict. Submit report to Designer in written, accurate detail. Pending receipt of directive from Designer, rearrange selective demolition schedule as necessary to continue overall job progress without delay.
- E. Notify Architect immediately if materials scheduled to remain are found to be unsuitable for the installation of the new work, or if existing conditions deviate substantially from those shown on the drawings. Remove and replace, or make good, any existing materials unsuitable for installation of new work.
- F. Provide all required protective measures prior to roofing demolition. In particular, ensure that tarps extend beyond the upper level balconies to protect them from debris.

### 3.06 ROOF DEMOLITION

- A. Do not remove any more materials than can be replaced in the same day. Do not remove materials when the forecast is for rain or high winds. Should inclement weather arise at any time during the project, the roofer shall cease operations and secure the roof and any stored materials from damage by wind or rain.
- B. Strip off all of the existing roof shingles, nails, felt or membrane underlayment, metal drip edge, existing ridge vents, built-up roofing, insulation, perimeter blocking and flashing on all buildings listed in the Summary of Work and legally dispose of all debris.
  - 1. Carefully protect all roof trim and soffits scheduled to remain.
- C. Verify that the existing sheathing is in good condition, identifying for examination by the Architect all areas that show evidence of damaged sheathing. Set all popped nails and resecure all loose sheathing.
- D. Remove from the Owner's property and legally dispose of materials or items demolished and not designated to become the property of the Owner.
- E. The Contractor shall have at least one person in charge of operations on the ground below roof material removal operations. This person shall be cognizant of Owner's personnel and other persons in the work area and shall remove debris that may obstruct passage or otherwise present a danger to Owner's personnel.
- F. Safely remove all demolished materials to dumpsters at grade, and legally dispose of materials, recycling where required by other sections of this specification.

### 3.07 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove debris, rubbish and other materials resulting from demolition operations from building site. Transport and legally dispose of materials off site.
- B. Recycle materials as required by Section 01.74.19 - CONSTRUCTION WASTE MANAGEMENT AND

DISPOSAL.

- C. Burning of removed materials is not permitted on project site.

3.08 CLEAN-UP AND REPAIR

- A. Upon completion of demolition work, remove tools, equipment and demolished materials from site.
- B. Clean site daily where work is performed.
- C. Repair demolition performed in excess of that required. Return structures and surfaces to remain to condition existing prior to commencement of selective demolition work. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.
- D. Any damages to existing furnishings and/or equipment, shall be reimbursed by the general contractor, who shall recoup costs from other contractors as appropriate.

**END OF SECTION**  
**02.41.00**

## SECTION 06.10.00

### ROUGH CARPENTRY

#### I. PART 1 - GENERAL

##### 1.01 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.
- B. This Contractor must be familiar with all other Divisions and Sections of the Specifications which affect the work of this Section.

##### 1.02 DESCRIPTION OF WORK

- A. **Work included:** Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
  - 1. Dimensional Lumber.
  - 2. Plywood.
  - 3. Nails and fasteners for securing items of this section.
- B. **Alternates:** None.
- C. **Items to Be Installed Only:** Install the following items as furnished by the designated Sections:
  - 1. None. All items to be installed by this trade, shall be furnished by this trade.
- D. **Items to Be Furnished Only:** Furnish the following items for installation by the designated Sections:
  - 1. None.
- E. **Related Work Specified Elsewhere:** The following items are not included in the Section, and will be performed under the designated Section:
  - 1. None.

##### 1.03 REFERENCES

- A. APA: American Plywood Association.
- B. AWWA (American Wood Preservers Association) C1 - All Timber Products Preservative Treatment by Pressure Process.
- C. NFPA: National Forest Products Association.

##### 1.04 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 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.

#### 1.05 QUALITY ASSURANCE

- A. Perform Work in accordance with the following agencies:
  1. Lumber Grading Agency: Certified by ALSC.
  2. Plywood Grading Agency: Certified by APA.
- B. The maximum moisture content for lumber products shall be 19 percent on air-dried stock, and 15 percent maximum on kiln-dried (KD) stock. All lumber stock shall be furnished air-dried unless specifically noted otherwise.
- C. Except when particular types of dressing are specified for certain products, surface lumber four sides (S4S).

#### 1.06 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.

#### 1.07 PROJECT CONDITIONS

- A. The Contractor must examine the substrate and supporting structure and the conditions under which the carpentry work is to be installed, and notify the Architect or Construction Advisor in writing of conditions detrimental to the Work. The Contractor must notify the Architect or Construction Advisor if the existing conditions are not acceptable for shingle installation. Do not proceed with the installation until unsatisfactory conditions have been corrected in a manner acceptable to the Architect and the Construction Advisor.
- B. Coordination: Fit carpentry work to other work; scribe and cope as required for accurate fit. Coordinate location of furring, nailers, blocking, grounds and similar supports to allow proper attachment of other Work.

#### 1.08 WARRANTY

- A. Contractor's standard 1-year warranty on installed items.
- B. Manufacturer's standard warranty on treated lumber.

## II. PART 2 - PRODUCTS

#### 2.01 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of lumber grading agencies certified by the American Lumber Standards Committee Board of Review.
  1. Factory mark each piece of lumber with grade stamp of grading agency.
  2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
  3. Provide dressed lumber, S4S, unless otherwise indicated.
  4. Provide dry lumber with 15 percent maximum moisture content at time of dressing for 2-inch nominal thickness or less, unless otherwise indicated.

B. Plywood Panels:

1. Plywood: Either DOC PS 1 or DOC PS 2, exterior grade fir, unless otherwise indicated.
2. Thickness: As needed to comply with requirements specified but not less than thickness indicated.
3. Factory mark panels according to indicated standard.

2.02 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. Preservative Treatment by Pressure Process: AWP A T1-11.
- B. Preservative: Alkaline Copper Quat Type A (P5).
- C. Mark each treated item with the treatment quality mark of an inspection agency approved by the American Lumber Standards Committee Board of Review.
- D. Application: Treat items indicated on Drawings, and the following:
1. Members in connection with roofing, flashing, vapor barriers, and waterproofing shall be treated in accordance with AWP A Standard U1-11 to the requirements of Use Category 3A (UC3A).
  2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete in exterior walls, AWP A Standard U1-11 to the requirements of Use Category 2 (UC2).

2.03 LUMBER

- A. General: Provide lumber for support or attachment of other construction, including the following:
1. Blocking and scabs where required to support replacement of roof sheathing.
- B. For items of dimension lumber size, provide Construction, Stud, or No. 2 grade lumber.

2.04 PANEL PRODUCTS

- A. Sheathing: Exterior Type, Standard Grade with exterior glue; Douglas Fir, 5 ply thickness to match the existing sheathing. Note: 4 ply, southern yellow pine plywood is not acceptable.
- B. Plywood Grading: Comply with Product Standard PS 1, "Construction and Industrial Plywood".
- C. Certification and Marking: The producer shall include a Certificate of Inspection with each shipment. Grade mark each panel in compliance with applicable standards of Product Standard PS 1.
- D. Moisture Content: Provide plywood which has been seasoned by kiln drying to a moisture content not to exceed 19%.
- E. Thickness:
1. Where used to patch or infill existing openings in roof sheathing, match existing. Record drawings indicate that the existing roof sheathing on the Carriage Barn is 3/4" T&G wood boards.

2.05 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
1. Where carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

- B. Nails, Wire, Brads, and Staples: FS FF-N-105
- C. Power-Driven Fasteners: CABO NER-272.
- D. Screws: Wood Screws: ASME B18.6.1.

### **III. PART 3 - EXECUTION**

#### **3.01 INSTALLATION**

##### **A. INSTALLATION, GENERAL**

1. 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.
2. 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.
3. Apply field treatment complying with AWWPA M4 to cut surfaces of preservative-treated lumber and plywood.
4. Securely attach carpentry work as indicated and according to applicable codes and recognized standards.
5. Use fasteners of appropriate type and length. Predrill members when necessary to avoid splitting wood.
6. Resecure existing sheathing, where loose.

##### **B. WOOD BLOCKING, AND NAILER INSTALLATION**

1. Install where indicated and where required for attaching other work. For to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
2. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.

##### **C. SHEATHING REPAIRS**

1. Where removal of the roofing reveals damaged sheathing not suitable for receiving new shingles, remove and replace the damaged areas back to the adjacent framing. Include (4) 4' x 8' sheets of 3/4" plywood to be installed where damage is uncovered.
2. At all areas being patched, remove existing damaged boards entirely to expose existing rafters below in order to provide adequate fastening area for plywood patch. Minimum (3) rafters.

##### **D. PLYWOOD INSTALLATION**

1. Where removed, sheathing shall be cut along the centerline of existing framing members to provide continuous support when installing plywood patches. Where cutting along framing members is not feasible, scab new lumber to roof framing for the full length of sheathing to be reinstalled.

**END OF SECTION**

**06.10.00**

## SECTION 07.31.00

### SHINGLE ROOFING

#### I. PART 1 - GENERAL

##### 1.01 GENERAL

- 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.
- B. This Contractor must be familiar with all other Divisions and Sections of the Specifications which affect the work of this Section.

##### 1.02 DESCRIPTION OF WORK

- A. **Work included:** Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
  - 1. Installing a new roof system, including but not limited to asphalt roof shingles, underlayment, rubberized membrane underlayment, aluminum drip edge, and other sheet metal flashings, starter strips, nails and other fasteners, and plastic cement and other items required for a complete watertight installation.
- B. **Alternates:** None.
- C. **Items to Be Installed Only:** Install the following items as furnished by the designated Sections:
  - 1. None. All items to be installed by this trade, shall be furnished by this trade.
- D. **Items to Be Furnished Only:** Furnish the following items for installation by the designated Sections:
  - 1. None.
- E. **Related Work Specified Elsewhere:** The following items are not included in the Section, and will be performed under the designated Section:
  - 1. 02.41.00 - SELECTIVE DEMOLITION, for demolition of the existing roof system.
  - 2. 06.10.00 - ROUGH CARPENTRY, for patching products at roof sheathing.

##### 1.03 SUBMITTALS

- A. General: Submit in accordance with Section 01.33.00.
- B. Product data for each type of product specified, including details of construction relative to materials, dimensions of individual components, profiles, textures, and colors.
- C. Samples for initial selection in the form of manufacturer's sample finishes showing the full range of colors and profiles available for each type of asphalt shingle indicated.

##### 1.04 QUALITY ASSURANCE

- A. All roofing accessories shall be by the manufacturer of the roofing material whenever possible.
- B. Provide certificate of compliance from shingle manufacturer for ASTM and UL Standards, indicating conformance to Contract requirements.

- C. Maintain one (1) copy of manufacturer's application instructions on site.
- D. All shingles shall have same Lot Number.

#### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in manufacturer's unopened bundles or containers with labels intact.
- B. Handle and store materials at Project site to prevent water damage, staining, or other physical damage. Store roll goods on end. Comply with manufacturer's recommendations for job-site storage, handling, and protection.

#### 1.06 JOB CONDITIONS

- A. Substrate: Proceed with shingle work only after substrate construction and penetrating work have been completed.
- B. Weather Conditions: Proceed with shingle work only when weather conditions are in compliance with manufacturer's recommendations and when substrate is completely dry.
- C. ABSOLUTELY NO WORK WILL BE DONE DURING PRECIPITATION.
- D. NO SHINGLE WORK SHALL BE PERFORMED WHEN THE AIR TEMPERATURE IS BELOW 32° F

#### 1.07 WARRANTY

- A. In addition to those Guarantees and Warranties required by the General Conditions the Contractor shall provide:
  - 1. The Contractor shall provide the Owner with a copy of the Bill of Sale for the Shingles clearly indicating the product, quantity, purchase date, and a note indicating the project for which the product is intended.
  - 2. The installing contractor shall warranty watertightness of the entire system for a period of 2 years from Substantial Completion.
  - 3. The Shingle Manufacturer shall warranty the shingles as follows:
    - a. Initial non pro-rated warranty period of 5 years
    - b. Overall warranty period of 50 years.
    - c. Wind ("blow-off") warranty of 15 years for wind speeds up to 110 mph.
    - d. Algae resistance warranty of 10 years.
  - 4. Satisfactory delivery of warranties shall be precedent to final payment.

## II. PART 2 - PRODUCTS

#### 2.01 SHINGLES

##### A. MANUFACTURERS

- 1. Certaineed "Landmark Premium"
- 2. GAF "HDZ"
- 3. Tamko "Titan XT"
- 4. Approved equal fiberglass/asphalt laminated architectural shingle meeting the following:
  - a. ASTM D 3018, Type 1
  - b. ASTM D 3462 Tear Resistance



- c. ASTM E 108, UL 790 Fire Resistance: Class A
  - d. ASTM D7158, Class H
  - e. ASTM D3161, Class F
  - f. Algae Resistant
5. Ridge Caps: Use manufacturer's Distinctive Ridge Caps designed for use with the Specified Product.
  6. Color: one color shall be selected by the Owner from the full range of colors available.

#### B. SHINGLE ACCESSORIES

1. Waterproof Underlayment (ice and water shield): Provide materials manufactured by the shingle manufacturer, for inclusion in a system warranty.
  - a. GAF "Storm Guard".
  - b. Tamko "Moisture Guard".
  - c. CertainTeed Corporation "WinterGuard"
  - d. Underlayment manufactured by approved equal shingle manufacturer.
2. Fiberglass reinforced Roof Deck Protection: UL Classified for use with Class A Asphalt Shingles to meet roof shingle manufacturer's requirement, complying with ASTM D 226, ASTM D4869, 36" wide. Provide materials **acceptable to** the shingle manufacturer, for inclusion in a system warranty.
3. Nails: 11 or 12-gage, sharp pointed, conventional roofing nails with barbed shanks, minimum 3/8" diameter head and of sufficient length to penetrate through sheathing. Length to penetrate 3/4 inch into solid decking or at least 1/8 inch through plywood sheathing.
  - a. Where hot-dipped galvanized nails are used, nails shall meet ASTM A-153 Hot Dip Galvanizing Spec.
  - b. Electrogalvanized nails will be acceptable in locations where they are fully covered by shingles or other construction.
  - c. Where nails are in contact with flashing, prevent galvanic action by providing nails made from the same metal as that of the flashing.
4. Asphalt Plastic Cement: Rubber reinforced asphalt cement with mineral fibers complying with ASTM D-4586 Type 1, ASTM D 3409 and federal Spec SS-C-153 Type 1 (Asbestos-Free) designed for trowel application. Material shall be Karnak #19 Ultra Rubberized Flashing Cement, APOC 128 All Pro SBS Rubberized Flashing Cement, BLACK JACK Premium Rubberized or equal.

#### 2.02 FLASHINGS

- A. Aluminum Drip Edge: Berger Building Products "F8 Drip Edge" or approved equal, minimum .024" aluminum sheet style drip edge, brake-formed to provide a minimum 1" inch flange with 1-1/2" drip at lower edge and a minimum 8" roof deck flange. Furnish in 8' or 10' lengths. Do not install drip edge in pieces shorter than 24". Color to be selected by Owner.
- B. Plumbing Vent Flashings: Furnish and install new stack flashings with black neoprene base at all plumbing penetrations, size to fit existing vent stack. Acceptable manufacturers:
  1. Oatey Aluminum Base no-caulk Plumbing Pipe Penetration Flashing
  2. IPS Adjustable Multi-size Roof Flashings
  3. Aztec Washer Company Res Lead Master Flash Plumbing Vent Flashings
  4. Approved equal.
- C. Step and Counter Flashing: Cold-rolled Soft Lead meeting the following standards:
  1. ASTM B 749

2. Thickness: 0.041" minimum.
3. Dimensions: As indicated on drawings.
4. Provide lead wedge and sealant for installation in existing mortar joint.

### III. PART 3 - EXECUTION

#### 3.01 PREPARATION AND PROTECTION

- A. Provide, erect and maintain catch platforms, lights, barriers, weather protection, warning signs and other items as required for the protection of the workers engaged in demolition operations and the public.
- B. Provide fire protection in accordance with local fire department requirements.
- C. Do not close or obstruct streets or sidewalks without the proper permit. Conduct operations with minimum traffic interference.
- D. Protect public and private property adjacent to and on the job site, including landscaping, vents, utility lines, streets, sidewalks, light standards, hydrants, street signs, mail boxes and fire alarm boxes. Make repairs to the complete satisfaction of the owner of the damaged property.
- E. Make such explorations and probes as are necessary to ascertain any required protective measures before proceeding with demolition and removal work.
- F. Provide and maintain temporary protection of the existing structure designated to remain where demolition and removal work is being done, connections made, materials handled or equipment moved, including but not limited protecting areas where roofing has been re-moved and new work has not be made the existing weather tight.
- G. Protect items scheduled to remain, from being damaged during demolition operations.
- H. Clean substrates of projections and substances detrimental to application. Cover knotholes or other minor voids in substrate with sheet metal flashing secured with non-corrosive roofing nails.
- I. Coordinate installation with flashings and other adjoining work to ensure proper sequencing.

#### 3.02 SHINGLE INSTALLATION

- A. General: Comply with manufacturer's instructions and recommendations but not less than those recommended by ARMA's "Residential Asphalt Roofing Manual" or "The NRCA Steep Roofing Manual."
  1. Fasten shingles to roof sheathing with nails by hand or nail gun. Under no circumstances shall staples be used.
- B. Ice and Water Shield Underlayment:
  1. Eaves: Apply 2 layers of underlayment horizontally to a minimum of 36" past the warm face of the wall extent indicated on the Drawings, whichever is greater. Lap ends a minimum of 4". Overlap edges a minimum of 2". Adhere underlayment using the self-sticking backing.
    - a. After installation of edge metal, install an 8" strip of underlayment over the edge metal.
- C. Felt Underlayment: Cover the remainder of roof areas to receive shingles with one layer of roofing felt, lapping all edges a minimum of 2" and ends a minimum 6". Stagger end joints a minimum 24". Secure with roofing nails and underlayment tins at a rate of 1 fastener per 4 sf minimum. Staples and tack hammers are not permitted.
- D. Flashing:
  1. Edge flashing: Install metal flashing and trim around edges of all roof sheathing receiving work and

according to details and recommendations of the "Asphalt Roofing" section of "The NRCA Steep Roofing Manual" and ARMA's "Residential Asphalt Roofing Manual."

E. Shingles:

1. Comply with installation details and recommendations of shingle manufacturer and NRCA Steep Roofing Manual.
2. At roof's lower edge, install shingles with manufacturer's starter strip a starter strip of inverted shingles with tabs removed. Inverting a course of shingles is NOT AN ACCEPTABLE STARTER COURSE. Use vertical and horizontal chalk lines to ensure straight coursing.
3. Fasten shingles with the manufacturer's recommended exposure pattern, using six nails per shingles.

3.03 ADJUSTING AND CLEANING

- A. Upon completion of demolition work, remove tools, equipment and demolished materials from site.
- B. Repair demolition performed in excess of that required. Return structures and surfaces to remain to condition existing prior to commencement of selective demolition work. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.
- C. Replace any damaged materials installed under this Section with new materials that meet specified requirements.
- D. Clean site regularly as work is performed.

**END OF SECTION**  
**07.31.00**

## SECTION 07.50.00

### MEMBRANE ROOFING

#### I PART 1 - GENERAL

##### 1.01 GENERAL REQUIREMENTS

- A. General and Supplementary General Conditions, Special Conditions and applicable parts of Division I as part of this Section.
- B. This Contractor must be familiar with all other Divisions and Sections of the Specifications which affect the work of this Section.

##### 1.02 SCOPE 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. Removing existing roofing systems, cants, flashings, blocking as indicated and all related items down to the original concrete roof deck.
  - 2. New single-ply roofing system comprised of rigid insulation, EPDM membrane, flexible and metal flashings and related adhesives and accessories.
- B. **Alternates:**
  - 1. None.
- C. **Items to Be Installed Only:** Install the following items as furnished by the designated Sections:
  - 1. None. All items to be installed by this trade, shall be furnished by this trade.
- D. **Items to Be Furnished Only:** Furnish the following items for installation by the designated Sections:
  - 1. None.
- E. **Related Work Specified Elsewhere:** The following items are not included in the Section, and will be performed under the designated Section:
  - 1. 02.41.00 - SELECTIVE DEMOLITION, for demolition of the existing roof system.
  - 2. 06.10.00 - ROUGH CARPENTRY, for plywood backer and perimeter blocking materials.

##### 1.03 SUBMITTALS

- A. Make submittals under provisions of Section 013000.
- B. Prior to starting work, the roofing contractor must submit the following:
  - 1. Shop drawings showing layout, details of construction and identification of materials.
  - 2. Sample of the manufacturer's Membrane System Warranty.
  - 3. Submit a letter of certification from the manufacturer which certifies the roofing contractor is authorized to install the manufacturer's roofing system and lists foremen who have received training from the manufacturer along with the dates training was received.
- C. Upon completion of the installed work, submit copies of the manufacturer's final inspection to the specifier prior to the issuance of the manufacturer's warranty.

#### 1.04 QUALITY ASSURANCE

- A. To the greatest degree possible, all products to be furnished for this project shall be manufactured by the roofing membrane manufacturer, to constitute a “system”. Third party products are only acceptable where specifically accepted by the manufacturer for inclusion in the system warranty. Submit such approval on manufacturer’s letterhead.
- B. The manufacturer must have a minimum of 20 years experience in the manufacturing of vulcanized thermal set sheeting.
- C. Unless otherwise noted in this specification, the roofing contractor must strictly comply with the manufacturer’s current specifications and details.
- D. The roofing system must be installed by an applicator authorized and trained by the manufacturer in compliance with shop drawings as approved by the manufacturer. The roofing applicator shall be thoroughly experienced and upon request be able to provide evidence of having at least five (5) years successful experience installing single-ply EPDM roofing systems and having installed at least one (1) roofing application or several similar systems of equal or greater size within one year.
- E. Provide adequate number of experienced workmen regularly engaged in this type of work who are skilled in the application techniques of the materials specified. Provide at least one thoroughly trained and experienced superintendent on the job at all times roofing work is in progress.
- F. There shall be no deviations made from this specification or the approved submittals without the prior written approval of the Architect. Any deviation from the manufacturer’s installation procedures must be supported by a written certification on the manufacturer’s letterhead and presented for the specifier’s consideration.
- G. Upon completion of the installation, the applicator shall arrange for an inspection to be made by a non-sales technical representative of the membrane manufacturer in order to determine whether or not corrective work will be required before the warranty will be issued. Notify the building owner seventy-two (72) hours prior to the manufacturer’s final inspection.

#### 1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to the job site in the manufacturer’s original, unopened containers or wrappings with the manufacturer’s name, brand name and installation instructions intact and legible. Deliver in sufficient quantity to permit work to continue without interruption.
- B. Comply with the manufacturer’s written instructions for proper material storage.
  - 1. Store materials between 60°F and 80°F in dry areas protected from water and direct sunlight. If exposed to lower temperature, restore to 60°F minimum temperature before using.
  - 2. Store materials containing solvents in dry, well ventilated spaces with proper fire and safety precautions. Keep lids on tight. Use before expiration of their shelf life.
- C. Insulation must be on pallets, off the ground and tightly covered with waterproof materials. Manufacturer’s wrap does not provide sufficient waterproofing.
- D. Any materials which are found to be damaged shall be removed and replaced at the applicator’s expense.

#### 1.06 WORK SEQUENCE

- A. Schedule and execute work to prevent leaks and excessive traffic on completed roof sections. Care should be exercised to provide protection for the interior of the building and to ensure water does not flow beneath any completed sections of the membrane system
- B. Do not disrupt activities in occupied spaces.

## 1.07 USE OF THE PREMISES

- A. Before beginning work, the roofing contractor must secure approval from the Owner for the following:
  - 1. Areas permitted for personnel parking.
  - 2. Access to the site.
  - 3. Areas permitted for storage of materials and debris.
  - 4. Areas permitted for the location of cranes, hoists and chutes for loading and unloading materials to and from the roof.

## 1.08 EXISTING CONDITIONS

- A. Refer to the plan on Sheet A1 for test cut information.
- B. Note that the existing Pump House roof is approximately 60% covered by moss and other plants and the existing built-up roofing and insulation are saturated across the entire roof.
- C. If discrepancies are discovered between the existing conditions noted on the Drawings and what is uncovered in the field, immediately notify the owner's representative by phone and solicit the manufacturer's approval prior to commencing with the work. Necessary steps shall be taken to make the building watertight until the discrepancies are resolved.

## 1.09 JOB SITE CONDITIONS

- A. The roofing contractor shall adequately protect building, paved areas, service drives, lawn, shrubs, trees, etc. from damage while performing the required work. Provide canvas, boards and sheet metal (properly secured) as necessary for protection and remove protection material at completion. The contractor shall repair or be responsible for costs to repair all property damaged during the roofing application.
- B. The contractor shall take precautions to prevent the spread of dust and debris, particularly where such material may sift into the building. The roofing contractor shall provide labor and materials to construct, maintain and remove necessary temporary enclosures to prevent dust or debris in the construction area(s) from entering the remainder of the building.
- C. Do not overload any portion of the building, either by use of or placement of equipment, storage of debris, or storage of materials.
- D. Protect against fire and flame spread. Maintain proper and adequate fire extinguishers.
- E. Store moisture susceptible materials above ground and protect with waterproof coverings.
- F. Remove all traces of piled bulk materials and return the job site to its original condition upon completion of the work

## 1.10 SAFETY

- A. The roofing contractor shall be responsible for all means and methods as they relate to safety and shall comply with all applicable local, state and federal requirements that are safety related. **Safety shall be the responsibility of the roofing contractor.** All related personnel shall be instructed daily to be mindful of the full time requirement to maintain a safe environment for the facility's occupants including staff, visitors, customers and the occurrence of the general public on or near the site.

## 1.11 WORKMANSHIP

- A. Applicators installing new roof, flashing and related work shall be factory trained and approved by the manufacturer they are representing.

- B. All work shall be in strict accordance with the manufacturer's published specifications and to the building owner's satisfaction.
- C. There shall be a supervisor on the job site at all times while work is in progress.

#### 1.12 JOB CONDITIONS

- A. Material Safety Data Sheets (MSDS) must be on location at all times during the transportation, storage and application of materials.
- B. When positioning membrane sheets, exercise care to locate all field splices away from low spots and out of drain sumps. All field splices should be shingled to prevent bucking of water.
- C. When loading materials onto the roof, the roofer must comply with the requirements of the Architect to prevent overloading and possible disturbance to the building structure.
- D. Proceed with roofing work only when weather conditions are in compliance with the manufacturer's recommended limitations, and when conditions will permit the work to proceed in accordance with the manufacturer's requirements and recommendations.
- E. Proceed with work so new roofing materials are not subject to construction traffic. When necessary, new roof sections shall be protected and inspected upon completion for possible damage.
- F. Provide protection, such as 3/4 inch thick plywood, for all roof areas exposed to traffic during construction. Plywood must be smooth and free of fasteners and splinters.
- G. The surface on which the insulation or roofing membrane is to be applied shall be clean, smooth, dry, and free of projections or contaminants that would prevent proper application of or be incompatible with the new installation, such as fins, sharp edges, foreign materials, oil and grease.
- H. New roofing shall be complete and weathertight at the end of the work day.
- I. Contaminants such as grease, fats and oils shall not be allowed to come in direct contact with the roofing membrane.

#### 1.13 WARRANTY

- A. Roofing Contractor's Warranty:
  - 1. The roofing contractor shall supply the Owner with a minimum one-year workmanship warranty. In the event any work related to the roofing, flashing, or metalwork is found to be defective within one year 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 the roofing signed warranty shall be sent to the roofing system's manufacturer.
- B. Membrane Manufacturer's Warranty:
  - 1. Provide manufacturer's 20 year Total System Warranty covering both labor and material with no dollar limitation.
    - (a.) 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, metal roof copings, metal roof edges and termination metals and roof drain assemblies. The manufacturer shall repair defects in materials and workmanship as promptly after observation as weather and site conditions permit.
  - 2. The maximum wind speed coverage shall be peak gusts of **72** mph measured at 10 meters above ground level.

3. Pro-rated System Warranties shall not be accepted.

## II PART 2 - PRODUCTS

### 2.01 MANUFACTURERS

- A. The products to be furnished shall be provided by the manufacturer of the roofing membrane, to comprise a "system" eligible for warranty as specified in Part 1. The basis of this specification is Elevate "RubberGard" EPDM and its related line of products manufactured by Holcim Elevate Building Products, Nashville, TN. Equal systems by the following manufacturers will also be acceptable:
  1. Carlisle "Sure-Seal"
  2. Johns Manville "NR 60"
  3. Approved equals.
- B. Unless otherwise approved by the specifier and accepted by the membrane manufacturer, all products (including insulation, fasteners, fastening plates and edgings) must be **manufactured and supplied** by the roofing system manufacturer and covered by the warranty.

### 2.02 INSULATION

- A. Roof Insulation: Polyisocyanurate Board Insulation: Closed cell polyisocyanurate foam with black glass reinforced mat laminated to faces, complying with ASTM C 1289 Type II Class 1, with the following additional characteristics:
  1. Thickness: (2) layers 3".
  2. Size: 48 inches by 96 inches, nominal.
  3. Compressive Strength: 20 psi when tested in accordance with ASTM C 1289.
  4. Ozone Depletion Potential: Zero; made without CFC or HCFC blowing agents.
  5. Recycled Content: 19 percent post-consumer and 15 percent post-industrial, average.
  6. Acceptable Product: ISO 95+ polyiso board insulation by Firestone or approved equal.

### 2.03 ADHESIVES, CLEANERS AND SEALANTS

- A. Insulation Adhesive: Manufacturer's LVOC, low-rise polyurethane insulation adhesive, appropriate for application in winter conditions, applied according to manufacturer's instructions.
  1. Perform positive adhesion test of concrete roof slab prior to application, if required by manufacturer.
- B. Membrane Bonding Adhesive: Manufacturer's LVOC high-strength, synthetic rubber adhesive used for bonding EPDM membranes to various surfaces.
- C. Seam Tape: Manufacturer's standard 6" wide by 100' long pressure-sensitive splice tape used for splicing adjoining sections of EPDM membrane.
  1. Membranes with pre-applied seam tape are acceptable.
- D. Primer: Manufacturer's standard solvent-based primer used to prepare the surface of EPDM membrane for application of Splice Tape or Pressure-Sensitive products. Where permitted by manufacturer, primer can also be used in conjunction with Splicing Cement in lieu of Splice Cleaner.
- E. Lap Sealant: Manufacturer's standard black, heavy-bodied material used to seal the exposed edges of a membrane splice or membrane/flashing edge. Color to match membrane.
- F. Water Cut-Off Mastic: Manufacturer's standard one-component, low viscosity, self wetting, Butyl blend mastic used as a sealing agent between the EPDM membrane or Elastoform (uncured) Flashing and applicable substrates.



- G. Pourable Sealer: Manufacturer's standard black, two-component, solvent-free, polyurethane based product used for tie-ins and as a sealant around hard-to-flash membrane penetrating objects such as clusters of pipes and for a daily seal when the completion of flashings and terminations cannot be completed by the end of each work day.

## 2.04 FASTENERS AND PLATES

- A. Provide the membrane manufacturer's recommended fasteners required for attachment to meet warranty requirements.
- B. Termination bar: Manufacturer's standard 1" x .040" x 10' long galvalume-coated steel fastening bar used with HD Fasteners for membrane securement into plywood backing.
  - 1. Where termination bars are used at masonry or concrete materials, provide manufacturer's standard 1-1/4" long expansion anchor with a zinc plated steel drive pin.
- C. Membrane transition strips: Manufacturer's standard 9" wide, nominal 45-mil thick clean, cured black reinforced EPDM membrane 6" wide Factory-Applied seam tape laminated along one edge.

## 2.05 METAL EDGING AND MEMBRANE TERMINATIONS

- A. Metal Roof Edging and Fascia: Continuous metal edge member serving as termination of roof membrane and retainer for metal fascia; watertight with no exposed fasteners; mounted to roof edge nailer.
  - 1. Wind Performance:
    - (a.) Membrane Pull-Off Resistance: 100 lbs/ft minimum, when tested in accordance with ANSI/SPRI ES-1 Test Method RE-1, current edition.
    - (b.) Fascia Pull-Off Resistance: At least the minimum required when tested in accordance with ANSI/SPRI ES-1 Test Method RE-2, current edition.
  - 2. Description: Elevate "UNA-Edge Drip Edge Kynar with Continuous Cleate" or approved equal meeting the following:
    - (a.) Fascia Face Height: 10".
    - (b.) Fascia Material and Finish: 24 ga, 0.040 inch aluminum with Kynar 500 finish with color selected by owner; matching concealed joint splice plates; factory-installed protective plastic film.
      - 1) Provide material samples to the designer for color selection.
    - (c.) Length: 144 inches.
    - (d.) Anchor Bar Cleat: 22 ga, 0.036 inch G90 coated commercial type galvanized steel with pre-punched holes.
    - (e.) Fasteners: Factory-provided corrosion resistant fasteners, with drivers; no exposed fasteners permitted.

## 2.06 OTHER MATERIALS

- A. Pipe flashing: molded EPDM boot-style flashing with pressure-sensitive adhesive flange. Provide stainless steel clamp ring and water cut-off mastic.
- B. Fasteners: Provide manufacturer's recommended size/length/type fasteners in stainless steel.
- C. Sealant: 100% clear silicone.

# III PART 3 - EXECUTION

## 3.01 EXAMINATION

- A. Prior to the start of work, the roofer shall examine the project area and the surrounding site, to develop a logistical plan for the execution of the work. The following shall be reviewed and discussed with the Owner:
  - 1. Location of dumpsters and chutes.
  - 2. Method of preventing adhesive fumes from entering the building HVAC.
  - 3. Locations of cranes, Lulls or other hoisting equipment, and location of stockpiled materials on roof.
- B. Prior to the start of demolition, the roofer shall arrange an on-site conference with a field representative for the membrane manufacturer, to review any special details which may be required for issuance of the specified warranty. The roofer shall be prepared to perform any test cuts or exploratory work required by the manufacturer's representative, and to patch the same.

### 3.02 COORDINATION

- A. The roofer shall coordinate his operations with the Owner, relative to the continued use of the building by Owner's personnel as the work progresses.

### 3.03 DEMOLITION

- A. Do not remove any more materials than can be replaced in the same day. Do not remove materials when the forecast is for rain or high winds. Should inclement weather arise at any time during the project, the roofer shall cease operations and secure the roof and any stored materials from damage by wind or rain.
- B. Remove roofing systems and insulation taking care to protect and preserve the existing roof deck.
- C. Remove all cants, rubber or metal flashings, drain strainers and other work as detailed.
- D. Safely remove all demolished materials to dumpsters at grade, and legally dispose of materials, recycling where required by other sections of this specification.

### 3.04 GENERAL

- A. Comply with the manufacturer's published instructions for the installation of the membrane roofing system including proper substrate preparation, jobsite considerations and weather restrictions.
- B. Position sheets to accommodate contours of the roof deck and shingle splices to avoid bucking water.

### 3.05 INSULATION PLACEMENT

- A. Install insulation in configuration and with attachment method(s) specified in PART 2, under Roofing System.
- B. Install only as much insulation as can be covered with the completed roofing system before the end of the day's work or before the onset of inclement weather.
- C. Lay first layer of roof insulation in courses parallel to roof edges and second layer rotated 90 degrees. Stagger layer joints.
- D. Neatly and tightly fit insulation to all penetrations, projections, and nailers, with gaps not greater than 1/4 inch. Fill gaps greater than 1/4 inch with acceptable insulation. Do not leave the roofing membrane unsupported over a space greater than 1/4 inch.
- E. Attach insulation to concrete decks with adhesive. Do not fasten insulation to concrete.

### 3.06 MEMBRANE PLACEMENT AND BONDING

- A. Unroll and position membrane without stretching. Allow the membrane to relax for approximately 1/2 hour before bonding. Fold the sheet back onto itself so half the underside of the membrane is exposed.

- B. Apply the Bonding Adhesive in accordance with the manufacturer's published instructions, to both the underside of the membrane and the substrate. Allow the adhesive to dry until it is tacky but will not string or stick to a dry finger touch.
  - 1. Roll the coated membrane into the coated substrate while avoiding wrinkles. Brush down the bonded half of the membrane sheet with a soft bristle push broom to achieve maximum contact.
  - 2. Fold back the unbonded half of the membrane sheet and repeat the bonding procedure.
- C. Install adjoining membrane sheets in the same manner, overlapping edges approximately 4 inches. Do not apply bonding adhesive to the splice area.

### 3.07 MEMBRANE SPLICING

- A. Splice and seal all membrane intersections using seam tape, following the manufacturer's requirements for the specified warranty.
- B. Use primers and membrane cleaners prior to applying tape.
- C. Roll the splice using positive pressure when using a 2" wide steel roller. Roll across the splice edge, not parallel to it.
- D. At all field splice intersections, apply Lap Sealant along the edge of the membrane splice to cover the exposed tape in each direction from the splice intersection. Install "T" Joint Covers or a 6" wide section (with rounded corners) of Pressure-Sensitive Flashing over the field splice intersection.

### 3.08 FLASHING

- A. Install flashings, including laps, splices, joints, bonding, adhesion, liquid flashings, and attachment, as required by membrane manufacturer's recommendations and details.
- B. Metal Accessories: Install metal edgings in locations indicated on the drawings, with horizontal leg of edge member over membrane and flashing over metal onto membrane.
  - 1. Follow roofing manufacturer's instructions.
  - 2. Remove protective plastic surface film immediately before installation.
  - 3. Flash with manufacturer's recommended flashing sheet unless otherwise indicated.
  - 4. Where single application of flashing will not completely cover the metal flange, install additional piece of flashing to cover the metal edge.
  - 5. When the roof slope is greater than 1:12, apply seam edge treatment along the back edge of the flashing.
- C. Flashing at Walls, Curbs, and Other Vertical and Sloped Surfaces: Install weathertight flashing at all walls and other vertical and sloped surfaces that the roofing membrane abuts to; extend flashing at least 8 inches high above membrane surface.
  - 1. Use the longest practical flashing pieces.
  - 2. Evaluate the substrate and overlay and adjust installation procedure in accordance with membrane manufacturer's recommendations.
  - 3. Complete the splice between flashing and the main roof sheet with specified splice adhesive before adhering flashing to the vertical surface.
  - 4. Provide termination directly to the vertical substrate as shown on roof drawings. Wall and curb flashing shall be cured EPDM membrane. Continue the deck membrane as wall flashing where practicable.
- D. Follow manufacturer's typical flashing procedures for all wall, curb, and penetration flashing including metal edging applications.

### 3.09 DAILY SEAL

- A. If the reroofing cannot be completed in one day, a daily seal must be performed to temporarily close the membrane to prevent water infiltration.
- B. Complete an acceptable membrane seal in accordance with the manufacturer's requirements.

### 3.10 CLEAN UP

- A. Perform daily clean-up to collect all wrappings, empty containers, paper, and other debris from the project site. Upon completion, all debris must be disposed of in a legally acceptable manner.
- B. Prior to the manufacturer's inspection for warranty, the applicator must perform a pre-inspection to review all work and to verify all flashing has been completed as well as the application of all caulking.

**END OF SECTION**

## SECTION 09.90.00

### PAINTING

#### I PART 1 GENERAL

##### 1.01 GENERAL REQUIREMENTS

- 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.
- B. This Contractor must be familiar with all other Divisions and Sections of the Specifications which affect the work of this Section.

##### 1.02 FILED SUB-BIDS

- A. Sub-bids shall be submitted for the Work of this Section in accordance with the provisions of M.G.L. c.149 §§44A-J. The time and place for submission of sub-bids are set forth in the Advertisement. The procedures and requirements for submitting sub-bids are set forth in the Instructions to Bidders.
- B. Sub-bidders must be DCAMM Certified in the listed trade and shall include a Current DCAMM sub-bidder Certificate of Eligibility and a signed DCAMM Sub-bidder's Update Statement with the bid.
- C. The Work of this section is shown on Drawing A6
- D. Sub-sub listings:
  - 1. Not required.

##### 1.03 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. Final preparation of new substrates to be painted.
  - 2. Caulking casing boards to windows and walls.
  - 3. Painting surfaces as scheduled herein.
  - 4. All other painting noted on the Drawings.
- B. **Alternates:** Not applicable.
- C. **Items to Be Finished Only:** Finish the following items as furnished by the designated Sections:
  - 1. None.
- D. **Items to Be Furnished Only:** Furnish the following items for installation by the designated Sections:
  - 1. None.
- E. **Related Work Specified Elsewhere:** The following items are not included in the Section, and will be performed under the designated Section:
  - 1. Section 02.41.00 - SELECTIVE DEMOLITION for removal of lead-containing paint.

##### 1.04 DEFINITIONS AND EXTENT

- A. General: Standard coating terms defined in ASTM D 16 apply to this Section.

1. Flat: a lusterless or matte finish with a gloss range below 15 when measured at an 85-degree meter.
  2. Eggshell: low-sheen finish with a gloss range between 20 and 35 when measured at a 60-degree meter.
  3. Semigloss: medium-sheen with a gloss range between 35 and 70 when measured at a 60-degree meter.
  4. Full gloss: high-sheen finish with a gloss range more than 70 when measured at a 60-degree meter.
- B. This Section includes surface preparation and field painting of exposed exterior and interior items and surfaces.
1. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.
- C. Paint exposed surfaces, except where these Specifications indicate that the surface or material is not to be painted or is to remain natural. If an item or a surface is not specifically mentioned, paint the item or surface the same as similar adjacent materials or surfaces. If a color of finish is not indicated, Designer will select from standard colors and finishes available.
- D. Do not paint pre-finished items, concealed surfaces, finished metal surfaces, operating parts, and labels.

#### 1.05 SUBMITTALS

- A. Product Data: on all finishing products under provisions of Section 01 33 00. Submit manufacturer's literature on surface preparation methods.
- B. Samples: one complete set of color chips or fan deck for color selection.
1. Final color selections will be made by the Owner from the full range of colors available. No color selections will be made until all materials requiring color selection have been submitted. The designer shall prepare color boards from the samples submitted, for the Owner's review. Plan adequate time for decisions, when making submittals.

#### 1.06 QUALITY ASSURANCE

- A. Applicator Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.
- B. Source Limitations: Obtain block fillers and primers for each coating system from the same manufacturer as the finish coats.
- C. Mockups: Not Required.

#### 1.07 DELIVERY, STORAGE AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptance.
- B. Container labeling to include manufacturer's name, type of paint, brand name, brand code, coverage, surface preparation, drying time, cleanup, color designation, and instructions for mixing and reducing.
- C. Store paint materials at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in well ventilated area, unless required otherwise by manufacturer's instructions.
- D. Take precautionary measures to prevent fire hazards and spontaneous combustion.

#### 1.08 PROJECT CONDITIONS

- A. Provide continuous ventilation and heating facilities to maintain surface and ambient temperatures above 45 degrees F for 24 hours before, during, and 48 hours after application of finishes, unless required otherwise by

manufacturer's instructions.

- B. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.
- C. Minimum Application Temperature for Varnish and Finishes: 65 degrees F for interior or exterior, unless required otherwise by manufacturer's instructions.

#### 1.09 WARRANTY

- A. Painter shall warranty applied finishes for a period of one year from Substantial Completion.
- B. Provide paint manufacturer's standard warranty on paint products.

## II PART 2 PRODUCTS

#### 2.01 MANUFACTURERS

- A. All materials specified in the painting schedule are to be Sherwin-Williams, or approved equal.

#### 2.02 MATERIALS

- A. Coatings: Ready mixed, except field catalyzed coatings. Process pigments to a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating with a good flow and brushing properties; capable of drying or curing free of streaks or sags.
- B. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.
- C. All materials shall be zero-VOC where possible. Where zero-VOC products are not available, products shall be of the lowest VOC rating available.

## III PART 3 EXECUTION

#### 3.01 INSPECTION

- A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- C. Verify that nail holes and miter joints in new woodwork have been filled and sanded by the installing trade.
- D. Beginning of installation means acceptance of existing surfaces.

#### 3.02 PREPARATION

- A. Correct minor defects and clean surfaces which affect work of this Section.
- B. Scrape flaking paint and sand to smooth finish all surfaces which affect work of this Section.
- C. Impervious Surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

#### 3.03 PROTECTION

- A. Protect elements surrounding the work of this Section from damage or disfiguration. The painter is responsible for protecting surroundings from overspray and drips, regardless of whatever other protection is

in place by other trades.

- B. Repair damage to other surfaces caused by work of this Section.
- C. Furnish drop cloths, shields, and protective methods to prevent spray or droppings from disfiguring other surfaces. Remove empty paint containers from site.

#### 3.04 APPLICATION COATINGS GENERAL

- A. Apply products in accordance with manufacturer's instructions.
- B. Do not apply finishes to surfaces that are not dry.
- C. Apply each coat to uniform finish.
- D. Sand lightly between coats to achieve required finish.
- E. Allow applied coat to dry before next coat is applied.

#### 3.05 CLEANING

- A. As Work proceeds, promptly remove paint where spilled, splashed, or spattered.
- B. During progress of Work maintain premises free of unnecessary accumulation of tools, equipment, surplus materials, and debris.
- C. Collect cotton waste, cloths, and material which may constitute a fire hazard, place in closed metal containers and remove daily from site.

#### 3.06 PAINT SCHEDULE

- A. Exterior Wood Trim:
  - 1. Surface preparation: S-W 24
  - 2. First Coat: Primer not required - specified paint is self-priming.
  - 3. Two Coats- Sherwin-Williams Duration Exterior Acrylic Latex Enamel, Semi-Gloss
  - 4. Color: to be selected by Owner.

**END OF SECTION**