Classroom Renovations

at the

Chandler Magnet Elementary School

for

Worcester Public Schools

May 31, 2023

DOCUMENTS PREPARED BY

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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.
B. Examination of Site and Documents.
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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 removal of the existing classroom floor system and the installation of a new flooring syste.

B. The scope of work, without limiting the generality thereof, includes all labor, materials, equipment and services required to perform the work described fully in the Drawings and Specifications and includes, but is not limited to the following major work:

1. Removal of existing perimeter casework / room items as required to perform the new work.

2. Temporary removal and reinstallation of the existing Unit Ventilator to perform the new work.

3. Electrical removal of floor mounted receptacles so they can be made safe for filling a flooring over.

4. Remove existing wood flooring system where present, down to the existing slab.

5. Install moisture mitigation system and fill material to level the slab to the existing adjacent flooring system.

6. Install new LVT flooring system, base and accessories.

7. Install new VCT where removed in hallway.

8. Construct plywood enclosures around feed to existing unit ventilators and floor vents

9. Prep and paint all walls, ceilings, wood trim, new items and existing wall mounted items.

C. The following major elements will be performed by the Owner, under separate contracts, for which the Prime Contractor has a coordinating responsibility:
   1. Clear all school items / furniture from the classrooms receiving work, the adjacent hall and access to the work area.

D. The following major elements will be furnished by the Owner, for installation by the Contractor or sub-contractors:
   1. None. The Contractor shall furnish all materials and labor required for the execution of this project.

E. Reference to Drawings: included with the bid package, but not in the project manual, they are separate D-Size sheets.

F. Prevailing Wage: The Massachusetts Standard Labor Wage rates, as outlined in the exhibits, will be used in the construction of this project

G. **<u>Start of Work</u>: The work may start on site the day after the last day of school. The last day of school is currently scheduled for June 20, 2023, but may change as a result snow days.**

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 provided that coordinate the visit with WPS and the main office.

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 Contractor's or Subcontractor's failure to familiarize themselves with the contract documents. The 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.

1.07 SUPERVISION OF WORK

A. The Contractor shall be held directly responsible for the correct installation of all work performed under this Contract. The 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 Contractor's warranty period, from the date of final acceptance of the work by the Owner.

B. The 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 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 by the public (if applicable).

2. Driveways and Entrances: Keep driveways and entrances serving the premises clear and available to the Owner, the Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

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 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 Contractor can gain access to the premises during the hours specified below. In addition the 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, Contractor shall inform the Owner one week prior to work.

1. Deliveries: **7:00 AM to 3:00 PM**, but only when the contractor is present on site.
2. Work on site:
   (a) **7:00 AM to 3:00PM** while school is not in session.
   (b) Other work times must be co-ordinated and approved with WPS.
   (c) *If the contractor chooses to work during times when the school is not staffed, weekends or after 11PM, etc., and it is approved by the owner, the contractor shall be responsible for all additional overtime / oversight charges that will be incurred.*
   (d) The contractor may work longer shifts than noted above, but the timing will need to be coordinated with WPS and the school, and any additional cost incurred for this work will be the responsibility of the contractor unless otherwise coordinated with WPS.
3. Weekends: At contractor's discretion and as allowed by Owner. No additional compensation for overtime.
4. Holidays: As coordinated with the owner.

E. The 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: Work is anticipated to start while school is not in session, but the Contractor will need to get parking area approval by the school. Some continued use of the building by WPS staff or custodians is anticipated, and contractors shall cooperate with the Owner and the staff, and park where directed.

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 barriers, approved by the Owner, suitable for the purpose, and installed adjacent to each work area. Barriers shall be barrier tape and/or sawhorses as a means of such access protection.

1.09 COORDINATION

A. The 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 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 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 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 Contractor shall review the tolerances established in the specifications for each type of work and as established by Subcontractor organizations. The Contractor shall coordinate the various Subcontractors and resolve any conflicts that may exist between Subcontractor tolerances without additional cost to the Owner. The 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 site at intervals appropriate to the progress of the Work and as required

subject to the discretion of the Owner.

1. 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.

B. In order to expedite construction progress on this project, the 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 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.

C. Scheduling shall be discussed with all concerned parties, and methods shall be presented by the 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 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 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 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 Contractor.

D. Contractor and specialized Subcontractors as applicable shall identify all permits (other than building permit) required from Authorities having jurisdiction over the Project for the construction and occupancy of the work. The 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 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 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.

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. 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 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 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 Contractor shall ensure that each of the Subcontractors clean up during and immediately upon completion of their work. Clean up includes the following tasks:

1. Remove all rubbish, waste, tools, equipment, appurtenances caused by and used in the execution of work.

D. Prevent the accumulation of debris at the construction site, storage areas, parking areas, and along access roads and haul routes.

E. Provide containers for deposit of debris and schedule periodic collection and disposal of debris.

F. Prohibit overloading of trucks to prevent spillage on access and haul routes.

G. The 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 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 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 Contractor and Subcontractors, and the Contractor shall create and maintain a copy of the documentation on site at all times.

1.17 DAMAGE RESPONSIBILITY

A. The 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. None.

1.19 ASBESTOS AND HAZARDOUS MATERIALS DISCOVERY

A. **See Section 02.08.00 - Abatement and Appendix A for items tested / results / scope.**

B. If unanticipated asbestos-containing materials or other Hazardous Materials not included in Contract are discovered at any time during the course of work, the 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.

C. 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.

1.20 LIST OF DRAWINGS

A. All Drawings are included in Appendix A of this Project Manual.

1. T1 - Cover Sheet
2. A1 - Demolition Plan and Details
3. A2 - New Elevations, Plans and Details - Room 118
4. A3 - New Elevations, Plans and Details - Room 122A
5. A4 - New Elevations, Plans and Details - Room 122B
6. E1.0 - Electrical Floor Plans

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION
01.11.00

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. The Contractor shall be solely responsible for the management, scheduling and sequencing of all work and inspections required to meet this deadline.

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 Partial (Beneficial) Occupancy.

C. Meetings:

1. 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. Contractor’s mark-up will be excluded from change orders caused by lack of coordination during design.

E. Commissioning:

1. Not applicable.

1.03 FIELD COORDINATION

A. Project scopes of limited complexity or limited utility installation will not require coordination drawings. The 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 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 forseen or properly coordinated between the contractors, the conflicting utility shall be revised at no expense to the Owner, to eliminate the conflict.

1.04 MEP COORDINATION DRAWINGS

A. Full drawings not required, but coordination shall occur between all contractors / trades.

II. PRODUCTS (Not Used)

III. EXECUTION (Not Used)

END OF SECTION
01.31.00

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 01.10.00 – SUMMARY

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 CONSTRUCTION SCHEDULE

A. Contractor shall prepare and submit for Designer and Owner's information, a Construction Schedule for the work of the project. Said schedule shall include sequencing of the project work and shall be submitted within 2 weeks of pre-construction meeting.

B. In addition, the Contractor shall prepare and submit at each project meeting, a two-week look-ahead schedule. The schedule shall identify:

1. Major elements of the work which were complete since the last project meeting, organized by room or by trade.

2. Major elements of the work to be performed in the next two weeks, to be able to track short-term conformance to the overall project schedule.

3. A projection of any upcoming required service interruption notices

1.05 CRITICAL PATH METHOD SCHEDULING

A. The Contractor remains responsible for identifying the critical path of all project activities and milestones, and will not be entitled to any additional compensation or any additional days related to Change Order work unless it can be demonstrated that latent conditions impact the critical path.

B. The critical path schedule shall be updated and resubmitted with each Application for Payment, and shall be considered a prerequisite for payment.

C. Additional Requirements

1. Provide a list of every submittal of shop drawings, product data, samples and other submittals required by the contract, General Conditions, Supplementary Conditions and/or technical specifications of the construction contract. The list shall identify every long lead item required by the contract.

II. PRODUCTS (Not Used)

III. EXECUTION (Not Used)

END OF SECTION
01.32.00

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. Allow (14) calendar days for Architect's review.

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 Re-submittal: 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 Architects 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 to the owner.

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.

END OF SECTION
01.33.00

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. Indoor Air Quality (IAQ) Management.
11. Enclosures.
12. Cleaning During Construction.
13. Field Offices.
14. Telephone Service.
15. Sanitary Facilities.
16. Construction Barriers.
17. Parking.
18. Debris Control and Removal.
19. Safety Protection.
20. Vehicle and Equipment Protection.
21. Shoring.
22. Construction Fence.
23. Project Identification Sign.
24. Delivery of Materials.
25. Shut Down Notice.
26. Construction Cores.
27. Covered Walkways
28. Excavations and Field Survey Requirements

1.03 TEMPORARY WATER

A. Water available within the project area may be used by Contractors for construction purposes, provided it is not use wastefully. The Owner reserves the right to revoke this privilege is water is not used responsibly.

B. Connection to the building water supply shall be made from the adjacent boiler/mechanical room. Connection in the toilet rooms may be made with the Owner's approval, and provided hoses are protected and oriented so as to avoid trip hazards.

C. Contractors shall furnish their own hoses for temporary water. When water is not in use, hoses shall be disconnected, rolled up and stored out of the way of the occupants.

D. The General Contractor shall provide an adequate supply of drinking water from approved sources of acceptable quality, satisfactorily cooled, for his employees and those of his Subcontractors.

E. Use of the water may be discontinued by the Owner if, in their opinion, it is wastefully used.

1.04 WEATHER PROTECTION

A. Although the scope of work is entirely interior, contractors are reminded that M.G.L. Chapter 149, Section 44D(G) requires that the General Contractor shall provide temporary enclosures and heat to permit construction work to be carried on during the months of November through March in compliance with M.G.L. Chapter 149, Section 44D(G) if required. Under no circumstances shall the General Contractor suspend any work during the months of November through March because of their reluctance to provide and pay for temporary weather protection. These Specifications are not to be construed as requiring enclosures or heat for operations that are not economically feasible to protect in the judgment of the Designer. Included in the preceding category, without limitation, are such items as site work, excavation, steel erection, erection of certain "exterior" wall panels, roofing, and similar operations.

B. "WEATHER PROTECTION" shall mean the temporary protection of that work adversely affected by moisture, wind, and cold, by covering, enclosing and/or heating. This protection shall provide adequate working areas during the months of November through March as determined by the Designer and consistent with the approved construction schedule to permit the continuous progress of all work necessary to maintain an orderly and efficient sequence of construction operations. The General Contractor shall furnish and install all "weather protection" material and be responsible for all costs, including heating required to maintain a minimum temperature of 50 degrees F. at the working surface. This provision does not supersede any specific requirements for methods of construction, curing of materials or the applicable general conditions set forth in the Contract Articles with added regard to performance obligations of the General Contractor.

1. Within 30 calendar days after his award of contract, the General Contractor shall submit in writing to the Designer for approval, three copies of his proposed methods for "Weather Protection."
2. 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.
3. The General Contractor shall furnish and install one accurate Fahrenheit thermometer at each work area as designated by the Designer. However, one additional accurate Fahrenheit thermometer shall be provided for every 2,000 square feet of floor space where the work areas exceed 2,000 square feet.

1.05 HEATING DURING CONSTRUCTION

A. The heating system is not anticipated to be affected by this scope of work, therefore no temporary heat is anticipated.

B. The contractor shall furnish any local heating or ventilation as may be required for the curing or drying of the Work, if the building’s heating system is insufficient.

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.

C. Generators for temporary power which cannot be provided through outlets within or around the project area, will be permitted.

1. Equip generators with mufflers or silencers and position outside the building, where directed by the Owner. If generator noise adversely affects building occupants, the Owner may ask for the location to be changed or the use of generators to be suspended.

2. Do not idle generators when power is not required for the work being performed.

1.07 MAINTENANCE OF ACCESS

A. The General Contractor shall maintain for the duration of his contract, a means of access to, around and within the site, as indicated on the Contract Drawings, for vehicular traffic and authorized personnel. Driveways and loading areas shall not be blocked by contractor's equipment, vehicles or dumpsters.

1.08 DUST CONTROL

A. The General Contractor shall provide adequate means for the purpose of preventing dust caused by construction operations from creating a hazard, nuisance, and from entering adjacent occupied areas throughout the period of the construction contract.

B. This provision does not supersede any specific requirements for methods of construction or applicable general conditions set forth in the Contract Articles with added regard to performance obligations of the General Contractor.

1.09 NOISE CONTROL

A. Contractors shall anticipate limited use of the building by the Owner during the performance of the Work.

B. 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.

C. 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.

D. 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.

1.10 INDOOR AIR QUALITY (IAQ) MANAGEMENT

A. Minimize exposure of building occupants, indoor surfaces, and ventilation air distribution systems to environmental tobacco smoke. At a minimum, take the following measures:
1. Prohibit smoking in the building.
2. Locate exterior designated smoking areas away from entries, outdoor air intakes, and operable windows.

B. During Construction:
1. Provide negative air machines, ducted to existing windows through polyethelyne ducting, to contain dust within the project area and exhaust it to the exterior. Locate exhaust away from doors and windows. Where windows are present above the exhaust location, check to ensure that they are closed.

C. Before Occupancy:

1. Conduct a baseline indoor air quality testing procedure consistent with the United States Environmental Protection Agency's "Compendium of Methods for the Determination of Air Pollutants in Indoor Air."

1.11 ENCLOSURES

A. Provide temporary, insulated, weather tight closures of openings in exterior surfaces for providing acceptable working conditions and protection for materials, allowing for heating during construction, and preventing entry of unauthorized persons.

B. All utilities including electric ducts, conduits, telephone lines, sprinklers, and other utilities shall be protected against damage from construction activity. The General Contractor shall be responsible for all damage to the utilities from construction and shall repair all such damage at no additional cost to Owner.

C. Provide temporary partitions and/or ceiling as required to separate work areas from occupied areas, to prevent penetration of dust and moisture into occupied areas, to prevent damage to existing areas and equipment. Construction shall be framing and sheet materials with closed joints and sealed edges at intersections with existing surfaces; (STC rating 35 in accordance with ASTM E900. Flame Spread Rating of 25 in accordance with ASTM E84.)

1.12 CLEANING DURING CONSTRUCTION

A. Unless otherwise specified under the various Sections of the Specifications, the General Contractor shall perform clean-up operations during construction as herein specified.

B. Control accumulation of waste materials and rubbish; periodically dispose of off-site in a legal manner. The General Contractor shall bear all costs, including fees resulting from such disposal.

C. Clean interior areas prior to start of finish work and maintain areas free of dust and other contaminants during finish operations.

D. Clean all dirt and debris tracked into other buildings by construction personnel, to the satisfaction of the Owner.

E. Maintain project in accordance with all local and Federal Regulatory Requirements.

F. Store volatile wastes in covered metal containers, and remove from premises.

G. Prevent accumulation of wastes which create hazardous conditions.

H. Provide adequate ventilation during use of volatile or noxious substances.

I. 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.

J. Use only those materials which will not create hazards to health or property and which will not damage surfaces.

K. Use only those cleaning materials and methods recommended by manufacturer of surface materials to be cleaned.

L. 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.

M. Provide on-site containers for collection of waste materials, debris, and rubbish.

N. Remove waste materials, debris and rubbish form the site periodically and dispose of at legal disposal dump site (DEP approved). Recycle where possible.

O. Handle material in a controlled manner with as few handlings as possible. Do not drop or throw materials from heights.

P. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not damage surrounding surfaces.

1.13 FIELD OFFICES

A. Contractors may utilize space within the project area for a field office or the owner will provide usable space, outside of the project area, as field offices for the contractors.

B. At the Contractor's option and expense, and if permitted by the Owner, the General 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. 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 will be permitted, provided the Contractors maintain the facilities in clean condition. The General 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. Location to be confirmed by the owner. Abuse or improper cleaning will result in the Contractor not being able to use the toilet facilities.

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. Barriers shall be erected at such approved locations as are necessary, sufficiently cross-braced and supported adequately from floors and ceilings as required.

1.17 PARKING

A. Parking will be permitted within the school's parking lot, where directed by the Owner. Contractors shall move vehicles when requested by the Owner.
   1. Access to loading docks, driveways, staff, faculty, visitor or tenant parking shall not be blocked by construction vehicles.
   2. 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. Dumpster shall be provided by the General Contractor for removal of debris for all Subcontractors.

B. Remove debris from the work site on a daily basis and dispose of same at any (private or public) DEP approved dump that the General Contractor may choose providing that the General Contractor shall make all arrangements and obtain all approvals and permits necessary from the owner or officials in charge of such dumps. During disposal process, copies of daily receipts from dump site 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 General 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 General Contractor.

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

1.21 CONSTRUCTION FENCE

A. Not required.

1.22 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.

1.23 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.

1.24 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. Investigation of the existing systems to determine the areas served, the location of isolation valves or sub-panels, etc., is to be anticipated and included in the bid scope.

C. Shutdowns involving sprinkler systems or fire alarm systems, for which the Authority Having Jurisdiction (AHJ) or WPS requires a fire watch, the contractor performing the shutdown shall provide and pay for the fire watch at no additional cost to the Owner.

D. Utility shutdowns affecting other buildings will be limited to occur after normal working hours. No additional compensation will be paid for overtime.

1.25 EXCAVATIONS AND FIELD SURVEY REQUIREMENTS

A. Not applicable.

II. PART II - PRODUCTS (Not Used)

III. PART III - EXECUTION (Not Used)

END OF SECTION
01.50.00

SECTION 01.73.29

CUTTING AND PATCHING

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.

1.02 SCOPE OF WORK

A. The General Contractor shall coordinate the work to ensure that all embedded or concealed items are placed prior to the closing of construction. Where opening up construction is required to install any aspect of the work, the General Contractor shall be solely responsible for the cutting and patching of such materials.

1.03 SUMMARY

A. This Section specifies administrative and procedural requirements for cutting and patching.

B. Refer to other Sections for specific requirements and limitations applicable to cutting and patching.

1.04 QUALITY ASSURANCE

A. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would reduce their load-carrying capacity or load-deflection ratio.

B. Obtain approval of the cutting and patching proposal from the Designer before cutting and patching structural elements.

C. Operational and Safety Limitations: Do not cut and patch operating elements or safety related components in a manner that would result in reducing their capacity to perform as intended, or result in increased maintenance, or decreased operational life or safety.

D. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces, in a manner that would, in the Designer's opinion, reduce the building's esthetic qualities, or result in visual evidence of cutting and patching. Remove and replace Work cut and patched in a visually unsatisfactory manner.

1.05 RELATED SECTIONS

A. Section 4.13 - General Conditions of the Contract, Article 3.

II. PART 2 - PRODUCTS

2.01 MATERIALS

A. Use materials that are identical to existing materials. If identical materials are not available or cannot be used where exposed surfaces are involved, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect. Use materials whose installed performance will equal or surpass that of existing materials.

B. Concrete, where used to spot patch abandoned penetrations in floors, shall be:

1. Normal weight concrete proportioned in accordance with ACI 211.1 and ACI 30 for 4,000 psi compressive strength @ 28 days.

2. At openings over 6" wide, provide ASTM A 615/A 615M, Grade 60, deformed reinforcing bars doweled into to the existing slab 48" on center, both sides, staggered.

3. At horizontal openings less than 6" wide, chip out the top of the opening to enlarge it, creating a tapered or conical hole to patch, such that the patch material cannot drop trough the hole.

C. Grout, where used to close annular space around floor or wall penetrations, shall be:

1. non-shrink type, prepackage and preproportioned, requiring only the addition of potable water before use, meeting or exceeding the following standards:
   (a) General Properties: ASTM C 1107-02
   (b) Compressive strength: ASTM C 109
   (c) Bond Strength: ASTM C 882

D. Lumber: where cutting of lumber is required for the installation of utilities or recessed items, or for the incidental replacement of damaged or unsuitable framing materials, new materials used to patch, sister, header or box out openings shall be kiln dried, stud grade S-P-F dimensional lumber with a dressed size of 1½" x the depth of the members receiving the work.

1. Use pressure treated lumber when in contact with ground, masonry, concrete or for roof blocking, with CCA preservative and a minimum retention rate of 0.25 pcf. Treat all cut ends by touching up in field with preservative. Use only galvanized fasteners and separate from materials which will react with preservative by using a separation sheet of peel-and-stick bituminous flashing tape.

III. PART 3 - EXECUTION

3.01 PROTECTION

A. Protect existing trees, plants, roads, walls etc. to remain. Special protection of any lawns and planting around buildings is the responsibility of the Contractor. Contractor will replace any planting killed or damaged by construction operations.

3.02 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.

1. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

2. Take all precautions necessary to avoid cutting existing pipe, conduit or duct work serving the building, but scheduled to be removed or relocated until provisions have been made to bypass them.

C. Furnish drop cloths, erect dust partitions and take other measures as required to control dust generated by cutting activities and prevent its spread to adjacent areas

3.03 PERFORMANCE

A. The General Contractor shall be responsible for all cutting and patching, including all cutting and patching required by sub contractors.

1. Before cutting existing surfaces, examine surfaces to be cut and patched and conditions under which

cutting and patching is to be performed. Take corrective action before proceeding, if unsafe or unsatisfactory conditions are encountered.

2. Before proceeding, meet at the site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

B. Firestopping, where required, shall be performed by the trade penetrating the wall, floor or ceiling. At all other areas requiring firestopping, work shall be performed by the General Contractor.

C. General: Employ skilled workmen to perform cutting and patching. Where required to maintain an existing product or system warranty, such as a roof warranty, employ a manufacturer's approved and warranted Contractor to perform the cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.

1. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.

D. Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction. Where possible review proposed procedures with the original installer; comply with the original installer's recommendations.

1. In general, where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots neatly to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

2. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.

3. Cut through concrete and masonry using a cutting machine such as a Carborundum saw or diamond core drill.

E. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.

1. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

2. Where removal of walls or partitions extends one finished area into another, patch and repair floor and wall surfaces in the new space to provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary to achieve uniform color and appearance.

3. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing the patch, after the patched area has received primer and second coat. Touch-up painting may stop at a corner, pilaster or other visual break in the repaired surface.

4. Patch, repair or re-hang existing ceilings as necessary to provide an even plane surface of uniform appearance.

F. Site Repair:

1. Restore all lawns, plantings, trees to their original condition.

2. Repair all walkways and driveways that were damaged due to construction.

3.04 CLEANING

A. Thoroughly clean areas and spaces where cutting and patching is performed or used as access. Remove

completely paint, mortar, oils, putty and items of similar nature.

B. Clean any portions of the building which were affected by dirt or dust generated by cutting, sanding or other construction activities.

END OF SECTION
01.73.29

SECTION 01.77.00

CLOSEOUT PROCEDURES

I. PART 1 - GENERAL

1.01 GENERAL

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.02 DESCRIPTION OF WORK

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.

1.03 RELATED DOCUMENTS

A. This section supplements the General Conditions.

B. Consult the individual sections of the specifications for specific items required under those sections.

1.04 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 re-inspections are required, the Architect reserves the right to bill the Owner for the re-inspections, and such monies will be deducted from the balance due to the Contractor.

1.05 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. 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.

G. 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.

H. 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.

I. 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.

1.06 RECORD SURVEYS

A. Not required.

1.07 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.

1.08 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.

1.09 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
01.77.00

SECTION 02.08.00

ASBESTOS ABATEMENT

PART I - 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. The Contractor must be familiar with all other Divisions and Sections of the Specification which affect the work of this Section.

1.02 DEFINITIONS

A. The following definitions shall be applicable to this Section:

"Site": Refers to the Chandler Magnet School located in Worcester, Massachusetts as described by the Contract Documents and Drawings.

"Owner": Refers to Worcester Public Schools and their designated, authorized personnel.

"Architect": Refers to Nault Architects Inc., 71 Hope Avenue, Worcester, Massachusetts and their designated, authorized personnel.

"Consultant": Refers to Atlas Technical Consultants, LLC (ATLAS), 73 William Franks Drive, West Springfield, Massachusetts and their designated, authorized personnel.

"General Contractor": Refers to the Contractor who has been awarded the overall contract for renovation work outlined by the Contract Documents.

"Asbestos Abatement Contractor": Refers to the Contractor who is performing asbestos abatement work as outlined by this Section.

1.03 GENERAL REQUIREMENTS/QUALIFICATIONS

A. All Asbestos Abatement work referenced herein shall be performed by a Massachusetts licensed Asbestos Abatement Contractor in accordance with Massachusetts Department of Labor Standards (MADLS) 454 CMR 28.00 Regulations.

B. Qualifications of Asbestos Abatement Contractor

1. Asbestos Abatement Contractor performing the abatement work of this section ("Asbestos Abatement Contractor") shall be an Asbestos Abatement Contractor licensed to perform asbestos operations in the State of Massachusetts. Asbestos Abatement Contractor shall submit license number and proof of licensure.

2. The Asbestos Abatement 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 Asbestos Abatement 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 Asbestos Abatement Contractor.

3. The Owner, Architect or Consultant shall also reserve the right to research and utilized other information received from any other projects completed by the Asbestos Abatement Contractor not provided under 1.03 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 Asbestos Abatement Contractor based upon this review, for any reason, if found to be in the best interest of the Owner.

NOTE: The Asbestos Abatement Contractor shall not be authorized to begin work until all credentials outlined above are reviewed and approved by the Architect.

1.04 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 Asbestos Abatement 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 Asbestos Abatement 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 Asbestos Abatement Contractor for failure to perform this requirement and no compensation shall be granted for variations in the quantities presented herein.

C. The following Scope of Work and Requirements shall be applicable for asbestos abatement work at the site. If a specific note for an abatement procedure or requirement is not mentioned herein, the Asbestos Abatement Contractor shall perform the removal of such material in accordance with local, state and federal regulations. The Asbestos Abatement Contractor shall also coordinate all work with the General Contractor.

1. All Asbestos Abatement work shall take place in accordance with the provisions outlined herein as well as current local, state and federal regulations. Specifically, the abatement work shall be subject to compliance with MADEP 310 CMR 7.15 and MADLS 454 CMR 28.00 Regulations. No additional compensation shall be granted to the Asbestos Abatement 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 Asbestos Abatement Contractor's responsibility to comply with such regulations as well as any other additional requirements outlined by this Section.

2. The Asbestos Abatement Contractor shall coordinate with the General Contractor as to the locations of areas to be abated in accordance with the Scope of Work outlined herein and the Drawings.

3. The Asbestos Abatement Contractor shall be responsible for all demolition work required in order to access all asbestos materials for abatement. All demolition debris shall be disposed of as asbestos waste, unless otherwise determined by the Consultant.

4. All removal procedures shall take place under full containment and a three-stage decontamination unit under negative pressure.

5. With regards to the variance from requirements on polyethylene sheeting on "impervious wall" surfaces, the Asbestos Abatement Contractor shall be required to adhere to all requirements outlined by MADLS regulations governing work area set-up for asbestos abatement. This process shall be applicable for all work areas deemed to contain impervious surfaces by the Asbestos Abatement Contractor. In addition, the Asbestos Abatement Contractor shall take full responsibility including all costs associated with approval and/or denial of such actions (i.e. non use of polyethylene) if determined to be deficient by the Owner's Consultant and/or a state or federal agency. If the variance is not permitted by said parties; the Asbestos Abatement Contractor shall proceed with installation of polyethylene sheeting on such surfaces at no additional cost to the Owner.

6. The following requirements shall be applicable for abated of all floor tile and mastic at the site:

   a. Removal shall include the floor tile and mastic located at the entrance doors to Classrooms 122A & 122B which will be removed and replaced as per the Drawings.
   b. The Asbestos Abatement Contractor shall coordinate with the General Contractor as to the specific amount of floor tile to be removed. At each location, the tile and all mastic, glue, levelastic, grout, caulking, infill/filler, flash-patching, etc. shall be removed down to the existing concrete.
   c. All staining located on the floors shall be 100% removed.
   d. The Asbestos Abatement Contractor shall remove all material by manual and/or mechanical means. ABATEMENT OF THE TILE AND MASTIC USING CHEMICAL SHALL NOT BE PERMITTED.
   e. At locations where the floor tile is located beyond the limits of work specified herein, (i.e. adjacent areas not in the Contract.) removal shall include the tile up to the outside portion of the door jamb/threshold or to the next full tile to remain. The tile shall be "squared off" in a professional manner to allow for new replacement tile to be installed by the General Contractor. Any damaged to tiles to remain beyond that point resulting from the Abatement work shall be replaced at no cost by the Asbestos Abatement Contractor.
   f. All damaged caused to the flooring beyond the limits of the work as a result of the abatement shall be repaired by the General Contractor.

7. Refer to Attachment A (Table 1.0) for a summary of materials that require abatement at the site. Refer to the Drawings and coordinate all work with the General Contractor.

1.05 SUBMITTALS

A. In addition to items required by other sections of the Project Manual, the following submittals are required for review and approval by the Architect on/or before the Pre-Construction Meeting:

   1. Copy of Massachusetts MADLS Asbestos Abatement Contractor's License
   2. Copy of the asbestos Notification (ANF01)
   3. Chain-Of-Command list of all personnel on-site and emergency contact person(s)
   4. Work plan which dictates all removal procedures to be implemented
   5. Proposed waste hauler and disposal site for asbestos
   6. Copy of proposed Waste Shipment Record to be used for disposal of asbestos.

B. In addition to the items required by other sections of the Project Manual, the following submittals are required for final payment

1. Copy of Waste Shipment Records

1.06 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 Asbestos Abatement 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 Asbestos Abatement Contractor's responsibility to know, understand, and abide by all such regulations and common practices.

1.07 FEES, PERMITS & LICENSES

A. The Asbestos Abatement 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 Asbestos Abatement Contractor shall be solely responsible for costs, damages, or losses resulting from any infringement of these patent rights or copyrights. The Asbestos Abatement Contractor shall hold the Owner, Consultant and Architect 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 Asbestos Abatement Contractor shall be responsible for the fee or royalty fee and shall disclose the existence of such rights.

B. Asbestos Abatement Contractor shall be responsible for costs for all licensing requirements, where applicable and notification requirements and all other fees related to the Asbestos Abatement Contractors 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.

1.08 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. 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.

1.09 COORDINATION

A. Extend full cooperation to Owner in all matters involving the use of Owner's facilities. At no time shall the Asbestos Abatement 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. Coordinate the work of this section with that of all other trades as directed by the General Contractor and at the express consent of the Owner and Architect. Phasing and scheduling of this project will be subject to the approval of the Owner and Architect. The work of this Section shall be scheduled and performed so as not to impede the progress of the project as a whole. Work shall not proceed in any area without the express consent of the Owner and Architect. The Asbestos Abatement Contractor shall be available within 24 hours notice for additional work if after acceptance of the work it is found that full abatement was not achieved from the initial work effort as determined by the Owner, Architect or Consultant.

C. Complete Asbestos activities in the phases of the final schedule agreed upon by Owner and General Contractor.

1.10 SUBSTITUTION OF MATERIALS OR METHODS

A. Owner and Architect approval is required for all modifications to methods, procedures, and design, which may be proposed by the Asbestos Abatement 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 Architect. Any such modifications or substitutions to methods, procedures, or design shall comply with applicable regulations. Asbestos Abatement Contractor shall submit the proposed modification or substitution in accordance with the requirements of the General Conditions, and no later than five (5) 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, Asbestos Abatement 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 Asbestos Abatement Contractor shall assume the cost and the entire responsibility thereto unless performed under the approved Change Order Process.

D. The Owner and Architect's permission to make such substitution shall not relieve the Asbestos Abatement Contractor from full responsibility for the work.

1.11 SITE SECURITY

A. The Asbestos Abatement Contractor is responsible for performing all work under this contract without contaminating the building environment with asbestos fibers. This includes interiors of duct work, outside containment locations, machinery and equipment and any other release into unregulated spaces. The Asbestos Abatement Contractor is responsible for making right and clean-up of any such contamination if found to be present.

B. The Asbestos Abatement Contractor will be responsible for the security of the abatement area, allowing only authorized personnel into the area, and securing assigned entrances and exits with locked doorway's at the end of the work day. Signs will be posted prior to asbestos removal as required in 29 CFR 1926.1101.

1.12 PROJECT MONITOR

A. The Architect (on behalf of the Owner) has retained ATLAS as their Consultant for the technical advisement and project management during the Project. In addition, ATLAS will perform project monitoring services during abatement activities. The 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 Contractor 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 has 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 Architect and Owner.

1.13TEMPORARY FACILITIES

A. Use of Owner provided facilities is specified in Division 1 and shall be coordinated through the Owner and General Contractor.

PART II - 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, Architect and Consultant. The Asbestos Abatement Contractor shall comply with local, state and federal regulations pertaining to the selection and use of materials and equipment on this project. The Asbestos Abatement Contractor shall provide a submittal on all materials and equipment to be used for review and approval by the Architect and Consultant prior to commencement of the work.

PART III - EXECUTION

3.01 PREPARATION

A. Critical Barriers: Prior to any masking and sealing operations which will make up the asbestos removal work area, windows, doors, openings, ducts, drains and vents will be masked and sealed with a minimum of one layer of six (6) mil polyethylene sheeting. Large openings to occupied areas, such as open doorways, hallways, passageways and major openings shall be sealed with permanent, solid construction materials and made air tight in accordance with MADLS 454 CMR 28.00 Regulations. Voids in the walls and ceilings that are due to penetrations of conduits and pipes shall be sealed with fire retardant spray foam. Exposed electrical panels in work areas will be shut off when possible, and masked and sealed with a minimum of two (2) layers of six (6) mil polyethylene and duct tape.

B. Decontamination Chambers: It is the Asbestos Abatement Contractor's responsibility to provide Decontamination Chambers consisting of an equipment room, shower and clean room for personnel involved in asbestos removal. The Chamber shall be masked and sealed with two layers of six mil polyethylene sheeting with flaps between each room. Each of the three rooms will be of a sufficient size to accommodate the Asbestos Abatement Contractor's contaminated personnel

and related equipment. The rooms will be framed, masked, sealed and attached and sealed to the entry/exit ways of asbestos worksites. Adequate heat and light will be safely provided. The Asbestos Abatement Contractor shall provide a minimum of one water heater per work area decontamination chamber. Waste water will be filtered by 20 micron and 5 micron filters in series prior to discharge.

3.02 ABATEMENT PROCEDURES

A. General: The following paragraphs detail the work requirements for the regulated area. Workers shall wear tyvek suits and respiratory protection for all removals.

B. Masking and Sealing

1. Critical Barriers

a. Prior to any masking and sealing operations which will make up the asbestos removal work area, windows, doors, openings, ducts, drains and vents will be masked and sealed with a minimum of one layer of six (6) mil polyethylene sheeting. Voids in the walls and ceilings that are due to penetrations of conduits and pipes shall be sealed with fire retardant spray foam. Large opening to occupied areas, such as open doorways, hallways, passageways and major openings shall be sealed with permanent, solid construction materials and made air tight in accordance with MADLS 454 CMR 28.00 Regulations.

b. In areas where drains or sump pumps are located, primary filters will be placed in drain and openings sealed with 6 mil polyethylene sheeting, in addition to floor masking and sealing requirements.

c. Any furniture, fixtures, or stored material that cannot be removed or that must remain in the work area will be covered, masked and sealed with a minimum of one layer of six (6) mil polyethylene sheeting. If the surfaces of these materials are determined to be contaminated with asbestos fibers, the Contractor shall remedial clean them prior to masking and sealing.

d. Exposed electrical panels in work areas will be shut off when possible, and masked and sealed with a minimum of two (2) layers of six (6) mil polyethylene and duct tape.

2. Full Containment:

a. Unless otherwise specified, floors and walls will be masked and sealed with two layers of six mil polyethylene sheeting with a minimum overlap of two feet at seams and up walls. Where it is necessary to mask and seal ceiling areas, a minimum of two (2) layers of four (4) mil polyethylene sheeting will be used.

b. The floors shall be covered first and the flooring plastic shall extend up on the walls. The walls shall then be covered with plastic from ceiling to floor level, thus overlapping the floor plastic. The floor shall then be covered with the second layer of plastic, the plastic extended up the walls and the edges sealed to the wall plastic. The walls shall then be covered with a second layer of plastic from ceiling to floor level, thus overlapping the second layer of floor plastic. The bottom portion of the wall plastic shall thus be sandwiched between the layers of the floor plastic. If the floor or wall plastic necessitates seams, the seams in successive layers of plastic sheet shall be staggered so as to reduce the potential for water or asbestos to penetrate through the covering.

c. The two separate layers of six-mil polyethylene sheeting on walls and floors shall constitute the primary and secondary containment barriers, respectively. This containment, along with the decontamination chamber, will constitute full containment, and will isolate the contained worksite from surrounding areas except where air must enter the worksite due to the use of exhaust equipment.

C. Personal Air Sampling: Daily personal and excursion sampling will be the responsibility of the Contractor to check personal exposure levels versus respiratory protection and to check work practices. At least 25% of the workers in each shift, but not less than 2, shall be sampled. The Contractor is responsible for his own personal sampling as outlined in OSHA Regulation 1926.1101. The Contractor shall post the personal air sample results within 24 hours.

D. Remedial Cleaning: Remedial cleaning of horizontal surfaces, ledges, and equipment will be required prior to masking and sealing operations of work areas. Cleaning will be done using HEPA vacuums and wet methods. Determinations of additional remedial cleaning will be made on the basis of hazard potential to workers and the outside environment relating to setup and masking and sealing operations (as deemed by the Consultant). Respiratory protection and protective clothing will be required for the cleaning. Prior to remedial cleaning negative air filtration units and a three stage decontamination shall be in place and running and all wall and ceiling penetrations shall be sealed with fire retardant spray foam.

E. Decontamination Chambers: The Contractor shall construct a decontamination chamber in accordance with local, state and federal regulations governing asbestos abatement.

F. Negative Air Filtration: The Contractor shall establish negative pressure air filtration within the work areas. The Contractor shall install, operate, and maintain a sufficient number of Negative Air Filtration Units (NAFU's) to meet the requirements of local, state and federal regulations.

G. Removals: Removal of asbestos containing materials, unless specified otherwise, will be performed using negative air filtration techniques, wet methods, attached three stage decontamination chambers, the masking and sealing of openings, ducts and vents, full two-layer plastic containment's and the encapsulation of post removal surfaces. Removals will be as indicated and as specified herein, and will be performed in a neat and workman like manner to the limits indicated or specified. Asbestos will be consistently and thoroughly wetted with a fine spray of amended water and will be carefully removed and immediately placed in approved and properly labeled six mil polyethylene disposal bags. Asbestos residual materials will be diligently scraped or brushed from surfaces. After brushing and scraping, surfaces will be free of visible debris and fibers and surfaces will be HEPA vacuumed clean.

H. 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 clearance air quality criteria.

I. Encapsulation: A bridging encapsulant/lockdown sealant will be applied to remaining surfaces in direct contact with removal operations, polyethylene sheeting and on any porous surfaces within the work site. The chosen encapsulant must be compatible with the replacement materials and conform to the proper edition of applicable fire and electrical standards.

J. Work Completion: Final air clearance testing shall be performed by the Project Monitor for all areas.

3.03 DISPOSAL

A. Packaging: Prior to post-abatement inspection, asbestos- containing waste material (ACWM) 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 Asbestos Abatement Contractor shall remove the debris accumulated during that day's work activities using procedures outlined in the Specifications. The Asbestos Abatement Contractor shall provide a daily tally of all bags removed.

B. Temporary Storage of Waste: An area for temporary storage of ACWM must be approved by the Owner. ACWM must be stored in a restricted area and must be in an **enclosed container** which is posted and secured whenever not in use. ACWM shall NOT be store outside the building on the ground, pavement areas or other non-enclosed area. ACWM 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. ACWM waste shall **NOT** be transferred back to the Asbestos Abatement Contractor's yard/facility unless approved by the Owner. ACWM shall only be stored at:

1. An approved refuse transfer station facility permitted or that is managing such wastes in accordance with 310 CMR 19.061 and/or;
2. The site of generation of the asbestos abatement activity.

Note: All ACWM shall be shipped from the site for disposal within 30 days after completion of the work and acceptance of a final visual inspection by the Consultant.

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. 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 BREATH DUST
AVOID CREATING DUST

The Asbestos Abatement 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 ACWM.

E. Waste Transportation: All ACWM waste shall be containerized pursuit to 310 CMR 7.15 prior to being transported. All ACWM waste shall be transported in totally enclosed vehicles or containers that are designed, constructed, and operated to prevent spills, leaks or emissions. All ACWM waste shall be transported in compliance with 40 CFR Part 61 and applicable Department of Transportation (DOT), OSHA and local regulations. 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 Asbestos Abatement Contractor shall prepare the waste shipment records for disposal of the ACWM. **All ACWM waste to be disposed of from the site shall be shipped on UMASS's approved "Asbestos Waste Shipment Record". A representative from Worcester Public Schools shall sign-off as "Generator" on the Asbestos Waste Shipment Record for each shipment leaving the site.**

G. The following information shall be included on the waste shipment record for each and every load of ACM transported off-site:

1. The name, address and telephone number of the owner/operator of the facility or dumping ground where asbestos abatement activities have occurred;
2. The quantity and type (friable or non-friable) of the ACWM in cubic meters (cubic yards) and a description of the container used for shipment;
3. The name, address and telephone number of the person who conducted any asbestos abatement activity;
4. The name and telephone number of the disposal site operator;
5. The name and physical location of the disposal site;
6. The date transported;
7. The name, address, and telephone number of the transporter(s);
8. Certification by the owner/operator of the facility or dumping ground where asbestos abatement activities have occurred/where asbestos waste was generated that the contents of each shipment have been characterized, packaged, marked and labeled in accordance with 310 CMR 7.15;
9. Signature of each transporter confirming the contents of each shipment are in all respects in the proper condition for transport according to applicable international, federal, state and local regulations;
10. Signature by the receiving disposal facility confirming that: i) the quantity of ACWM listed on the waste shipment record is the same as the quantity accepted for disposal; and ii) it holds appropriate permits and/or authorizations to accept for disposal ACWM described on waste shipment records.

Note: The final waste shipment records (with signature of acceptance at the landfill) for disposal of ACM from the project site shall be received by the Owner within 35 days of shipment from the site.

3.04 QUALITY CONTROL AND TESTING

A. The Asbestos Abatement Contractor shall be responsible for achieving acceptable visual and final air clearance testing for ALL abatement areas as follows:

- Clearance inspection: ATLAS's Project Monitor shall inspect the work area and surrounding areas for clearance using visual and physical methods, prior to clearing the project for air monitoring clearance procedures.

- Post-abatement Clearance Air Monitoring: For each abatement areas, post abatement clearance air samples will be taken when a visual inspection by ATLAS's Project Monitor detects no visible debris, and surfaces are encapsulated and dry.

- Based upon the quantity of material to be abated, either Phase Contrast Microscopy (PCM) or Transmission Electron Microscopy (TEM) clearance testing will be performed to confirm the completion of removal. All clearance testing shall be performed in accordance with state of Massachusetts and EPA "Asbestos Hazard Emergency Response

Act" (AHERA) Regulations. The work areas shall be considered complete if the following criteria is met:

1. Containment's cleared and samples analyzed by Phase Contrast Microscopy (PCM): Maximum airborne fiber concentration of <0.01 fibers per cubic centimeter (minimum 5 samples).

2. Containment's cleared and samples analyzed by Transmission Electron Microscopy (TEM): The average concentration of asbestos on the five inside containment samples in not statistically different (as determined by the Z-test calculation found in Appendix A of 40 CFR 763 Subpart E) from the average asbestos concentrations of the five outside containment samples, and average asbestos concentrations of the three field blanks are below the filter background level of 70 structures per square millimeter (70/smm).

Note: Should results indicate a fiber concentration greater than the clearance criteria stated above or if the visual inspection fails, the Asbestos Abatement Contractor shall reclean the entire work at no additional cost to Owner, utilizing the methods specified in this section. The Asbestos Abatement Contractor shall pay for all additional testing and inspections until the clearance level is achieved as per this Section. The cost of additional testing and inspection shall be paid by the Asbestos Abatement Contractor by subtracting the cost for analysis and inspector's time from the Contract total. This shall also include resampling of any areas where air cassettes became overloaded due to construction activities.

ATTACHMENT A

TABLE 1.0
SUMMARY OF ACM TO BE ABATED

TABLE 1.0 SUMMARY OF ACM TO BE ABATED			
LOCATION	**MATERIAL**	**QUANTITY**	**NOTES**
Classroom 118	Transite Panels Behind Perimeter Wall Vent/Cabinet	165 SF	Includes all debris located within the vent/cabinets as ACM.
Classroom 122A	Transite Panels Behind Perimeter Wall Vent/Cabinet	125 SF	Includes all debris located within the vent/cabinets as ACM.
Classroom 122A	Floor Tile and Mastic	4 SF	Includes tile at the entrance doorway to allow for new work to be performed.
Classroom 122B	Transite Panels Behind Perimeter Wall Vent/Cabinet	65 SF	Includes all debris located within the vent/cabinets as ACM.
Classroom 122B	Floor Tile and Mastic	4 SF	Includes tile at the entrance doorway to allow for new work to be performed.

SECTION 02.41.00

SELECTIVE DEMOLITION

I. PART 1 - GENERAL

1.01 GENERAL

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.02 WORK INCLUDES

A. Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following major items:

1. Removal of existing built-in shelving, casework and trimin spaces receiving work.
2. Removal of existing end-grain wood flooring system to concrete deck.
3. Removal of abandoned wall / ceiling mounted.
4. Removal of existing classroom clocks.

B. The following elements will be **performed by the Owner**, under separate contracts, for which the Prime Contractor has a coordinating responsibility:

1. WPS will removal of loose furniture, classroom related items / decorations, any items stored in the spaces receiving work and clearing the path of travel from the work area to the exterior of the building, prior to the contractor mobilizing on site.

1.03 RELATED WORK

A. Section 02.08.00 - ABATEMENT: *for removal of hallway flooring and heating reflector plates behind shelving / under windows.*

B. HVAC temporary unit ventilator removal / reinstallation work, included on the Architectural drawings

C. Electrical “make-safe” work is included on the electrical drawings.

1.04 SUBMITTALS

A. Refer to SECTION 01.33.00 - SUBMITTALS *for submittal provisions and procedures.*

B. Schedule: Provide detailed sequence of demolition and removal work.

1.05 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 general public from injury due to selective demolition work.

1. Provide protective measures as required to provide free and safe passage of Owner's personnel.

2. 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.

3. 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 the Owner. 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. Provide negative air equipment throughout demolition as a means of dust and odor control.

II. PART II - PRODUCTS (Not Applicable)

III. PART III - EXECUTION

3.01 ASBESTOS ADVISORY

A. The Owner has tested the project area elements scheduled to be demolished, for the presence of asbestos containing materials (ACMs), see section 02.08.00 and Appendix A for a complete summary.

B. If hazardous materials beyond those identified for removal are encountered during demolition operations, stop work immediately and notify the Owner and Architect. If work cannot be stopped safely, comply with applicable regulations, laws, and ordinances concerning removal, handling and protection against exposure or environmental pollution.

3.02 INSPECTION

A. Prior to commencement of 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.

B. Contractors are advised that although school is not in session at the beginning of the project, the building will remain partially occupied over break the School will be in full operation for the duration of the project.

3.03 PREPARATION

A. Submit a demolition plan and schedule under the provisions of Section 01.33.00 - Submittals, prior to performing any demolition work. Adjust schedule as required to accommodate ongoing research in occupied areas. In some cases, work after hours may be required.

B. File all appropriate paperwork and obtain all required permits prior to the start of demolition, including but not limited to:
   1. AQ-06 demolition permit.
   2. Dumpster permit, if debris is not going to be removed by truck a the end of each day.

C. Sequence work in occupied areas so as to minimize disruption, and to allow continued use of spaces.

D. 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.

E. Areas to be renovated will be emptied of loose contents prior to the start of demolition, by the Owner. Where demolition of utilities and other items is required on other floors, the general contractors shall cover and protect furniture, equipment and fixtures from soiling or damage when demolition work is performed, remove said protection after the work is complete, and clean room to original condition prior to returning to occupants.

F. Erect and maintain dust-proof partitions and closures, and other means as required to prevent spread of dust or fumes to occupied portions of the building, as specified in Section 01.50.00. Temporary partitions at corridors shall not restrict access of egress through the corridor, and shall not reduce the clear width to less than what is required by Code.

G. Coordinate temporary building HVAC shutdowns in the event dust-generating demolitions is to be performed adjacent to building air intake points. The general contractor shall provide temporary ventilation through fans, to control the spread of dust through the building and maintain a negative pressure in the project area, relative to the remainder of the building.

H. Extra care and precaution shall be taken by the GC to protect any live utilities from damage until such time as they can be demolished by the appropriate sub-trade. The GC will be responsible for the correction or replacement any and all damages to materials scheduled to remain.

3.04 GENERAL DEMOLITION

A. 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.

B. Provide services for effective air and water pollution controls as required by local authorities having jurisdiction.

C. 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.

D. 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.

E. Sequence work in accordance with requirements of Section 01.31.00. Schedule new work to coincide with demolition work, to minimize amount of disruption.

3.05 SHELVING AND CASEWORK DEMOLITION

A. Remove existing casework, shelving and associated trim as required to perform the new work. Be careful not to affect items scheduled to remain or affect the integrity of the substrate (to remain) they are fastened too.

B. Fill any holes left in the block wall after demolition is complete.

C. Coordinate this demolition with the Abatement, HVAC and Electrical contractors.

3.06 FLOORING DEMOLITION

A. Confirm that the abatement, general demo, electrical make-safe and HVAC (unit ventilator temporary removal) have been completed and the entire existing floor is exposed and ready for removal.

B. The extent of flooring demolition shall include removal of all materials above the existing concrete slab. The contractor performing the demolition shall coordinate with the contractor performing the in-fill / leveling work along with the flooring installer, to understand the flooring manufacturer's required substrate.

C. Remove flooring, carefully, to maintain the integrity of the substrate.

D. Fill all depressions already present in the room where construction removed by others, existing holes from damage or removal of utilities, damage left by shot-blasting (if performed) and all other defects as required to deliver a level, uniform surface for the installation of finish flooring.

1. Filler material shall be non-shrink grout.

E. Fill any abandoned cores for utilities which are removed through this project, or any encountered abandoned utility cores with non-shrink grout.

3.07 DISPOSAL OF DEMOLISHED MATERIALS

A. All demolished materials may be conveyed to dumpsters at grade by carts through the building. Carts shall be covered at all times while being transported, and contractors shall sweep and damp mop dust and debris from transportation route at the end of each work day.

1. Follow the shortest route to the exterior. Transporting debris through finished portions of the building, particularly portions not receiving work, is discouraged and shall be minimized.

B. Remove debris, rubbish and other materials resulting from demolition operations from building site. Transport and legally dispose of materials off site.

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

3.08 DISPOSAL, CLEAN-UP AND REPAIR

A. Upon completion of demolition work, remove tools, equipment and demolished materials from site.

1. The general contractor shall provide dumpsters for all project debris. One 30-yard dumpster will be permitted, where directed by WPS. The dumpster shall not obstruct access, and shall be emptied in a timely manner.

B. Remove protections and leave interior areas broom clean. Where demolition was performed in occupied areas, all surfaces shall be vacuumed and wiped down free of dust.

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 I - GENERAL

1.01 GENERAL

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.02 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. Blocking.

2. Anchors, bolts, screws, nails and other fasteners required to secure the items specified in this Section.

1.03 RELATED WORK

A. Section 02.41.00 - Selective Demolition.

1.04 REFERENCES

A. ALSC - American Lumber Standards Committee: Softwood Lumber Standards.

B. APA - American Plywood Association.

C. AWPA - American Wood Preservers' Association: Book of Standards.

D. FS - TT-W-571 - Wood Preservation: Treating Practices.

E. NFPA - National Forest Products Association.

F. SFPA - Southern Forest Products Association.

G. WCLIB - West Coast Lumber Inspection Bureau: Standard Grading Rules for West Coast Lumber.

H. WWPA - Western Wood Products Association.

1.05 QUALITY ASSURANCE

A. Lumber Grading Agency: Certified by ALSC.

B. Plywood Grading Agency: Certified by APA.

1.06 SUBMITTALS

A. Submit product data under provisions of Section 01300.

II. PART II - PRODUCTS

2.01 **Blocking, furring:** construction grade Western Hemlock, Douglas Fir, Sugar or Southern Pine, 19 percent maximum moisture content.

III. PART III - EXECUTION

3.01 INSTALLATION

A. **Blocking, furring:** install in continuous pieces or the longest lengths practical. Install straight and level, to provide continuous support for other installed materials.

END OF SECTION
06.10.00

SECTION 06.20.00

FINISH CARPENTRY

I PART 1 GENERAL

1.01 GENERAL

A. The General Conditions, Supplementary General Conditions, and applicable parts of Division I as part of this Section.

B. This Contractor must be familiar with all other Divisions and Sections which affect this Work.

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. Under Sill Trim / Apron
2. Interior window stops and in-fill strips.
3. HVAC transition and floor duct enclosure, and blocking and cleats.

B. **Alternates:** N/A

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 this Section, and will be performed under the designated Section:

1. Section 02.80.00 - SELECTIVE DEMOLITION for trim / in-fill where items are removed.
2. Section 09.00.00 - PAINTING for prep and painting new and existing wood item.

1.03 REFERENCES

A. AWI - Quality Standards.

1.04 REGULATORY REQUIREMENTS

A. Conform to applicable code for fire retardant requirements.

B. Conform to UL requirements to achieve fire resistance assembly rating indicated.

1.05 SUBMITTALS

A. Literature: Submit manufacturer's specifications and installation instructions in accordance with Section 01.33.00 for each item of factory-fabricated woodwork.

B. Samples: Submit samples of:
   1. All trim profiles.

C. Project literature and Shop drawings for:
   1. Shelf systems

D. Maintenance data: Submit care and maintenance data, including repair and cleaning instructions. Include in project close-out documents.

1.06 QUALITY ASSURANCE

A. Finish carpentry items shall conform to the "Quality Standards" of the Architectural Woodwork Institute (AWI). Any reference to Premium, Custom or Economy in this Specification shall be as defined in the latest edition of the AWI "Quality Standards". Any item not given a specific quality grade shall be Custom grade as defined in the latest edition of the AWI "Quality Standards".

B. Allowable tolerances:

   1. Variation in component size: ± 1/8" (3 mm).
   2. Location of openings: ± 1/8" (3 mm) from indicated location.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Protect woodwork during transit, delivery, storage and handling to prevent damage, soiling and deterioration.

B. Store materials in ventilated, interior locations under constant minimum temperatures of 60 degrees F and maximum relative humidity of 55 percent.

C. Do not deliver woodwork until painting, wet work and similar operations which could damage or deteriorate woodwork have been completed in installation areas.

II PART 2 PRODUCTS

2.01 TRIM MATERIALS

A. Trim lumber shall be graded in accordance with the requirements of AWI; maximum moisture content of 6 percent; of the following species and grades:

   1. Material: All new wood trim shall be pine, No 1 quality, paint grade. Finger jointing is acceptable.

   2. Profile: Trim and moldings shall match existing trim and moldings elsewhere on site.

   3. Size: sizes shall match existing, typically:
      a. Window sill: shall be sided to extent a min of 1" past the face of trim in all directions.
      b. Window Apron: as noted on drawings

B. Measurements: Before proceeding with fabrication of woodwork required to be fitted to other construction, obtain measurements and verify dimensions and shop drawing details as required for accurate fit.

1. Where sequence of measuring substrate before fabrication would delay the project, proceed with fabrication (without field measurements) and provide ample borders and edges to allow for subsequent scribing and trimming of woodwork for accurate fit.

2.02 HVAC TRANSITION AND DUCT ENCLOSURE (Locations as noted on the plans: painted plywood)

A. Shelves shall be 3/4" paint grade plywood, all painted wall color or black as selected by owner.

B. Include blocking for the support of all items.

C. As detailed on drawings.

III PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces and openings are ready to receive work and field measurements are as shown on shop drawings.

B. Verify that mechanical, electrical, and building items affecting work of this Section are placed and ready to receive this work.

C. Beginning of installation means acceptance of existing conditions.

3.02 PREPARATION

A. Before installation, prime paint surfaces of items or assemblies to be in contact with cementitious materials.

3.03 TRIM INSTALLATION

A. Install work in accordance with AWI Custom quality standard.

B. Set and secure materials and components in place, plumb and level.

C. Scribe and cut work to fit adjoining work, and refinish or repair damaged cut surfaces.

D. Install standing and running trim with the least joints possible. Apply woodwork to anchors or built-in blocking or directly to the substrate. Use countersunk nails or screws for exposed woodwork, filled flush with matching finish.

E. Miter all trim joints, and secure by gluing edges and driving two brad nails, one into each piece of trim. Fill and sand joint if required prior to finishing.

F. Where ends of trim boards are to be exposed after installation, cut board cleanly with a high tooth count blade, and sand end grain as required to provide a smooth solid wood appearance. Ragged or torn-out end grain is not acceptable.

G. Ease all 90 degree wood edges lightly by plane, file or sanding block, to prevent any possible injury to tenants. A 1/16" chamfer is typically acceptable.

H. Fill prep and paint all new and existing trim. Sand all new woodwork lightly to prepare it for painting

under section 09.90.00.

I. The contractor may choose to pre-fabricate and paint all window casing and stops to minimize the time spent in the unit. If this option is chosen, the members may be shop primed with one shop coat and the final coat shall be field applied after field installation is complete.

3.04 ENCLOSURE FABRICATION AND INSTALLATION

A. Coordinate the installation of blocking where enclosures are to be installed.

B. Secure brackets / blocking to wall with appropriate anchors for all locations.

C. Fill prep and paint all new and existing trim. Sand all new woodwork lightly to prepare it for painting under section 09.90.00.

D. The contractor may choose to pre-fabricate and paint all window casing and stops to minimize the time spent in the unit. If this option is chosen, the members may be shop primed with one shop coat and the final coat shall be field applied after field installation is complete.

3.05 ADJUSTMENT, CLEANING AND PROTECTING.

A. Repair damaged and defective woodwork wherever possible to eliminate defects. Replace woodwork where acceptable repairs are not possible. Adjust joinery for a uniform appearance.

B. Clean hardware, lubricate and make final adjustments for proper operation.

C. Clean woodwork on exposed or semi-exposed surfaces. Touch-up finishes to restore damaged or soiled areas.

D. Installer of architectural woodwork shall advise the Contractor of procedures required to protect architectural woodwork during remainder of construction. Contractor shall protect as required, and repair any damages until Substantial Completion is reached.

END OF SECTION
06.20.00

SECTION 09.61.10

VAPOR MITIGATION AND IN-FILL AT SLAB

I. PART I - GENERAL

1.01 GENERAL

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.02 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. Vapor mitigation at existing concrete slabs under the following finishes:

(a) New infill slab for new floor system.

2. Cementitious underlayment over floor receiving vapor mitigation to in fill / level existing adjacent flooring.

B. **Alternates:** N/A

C. **Items to Be Installed Only:** Not Applicable.

D. **Items to Be Furnished Only:** Not Applicable.

E. **Related Work Specified Elsewhere:** The following items are not included in the Section, and will be performed under the designated Sections:

1. Section 02.80.00 - SELECTIVE DEMOLITION: for initial floor prep / cavety filling.

1.03 SUBMITTALS

A. Product Data: For each product indicated.
B. Qualification Data: For Installer.
C. Field quality-control test reports.
D. Warranty: Special warranty specified in this Section.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized / factory trained representative who is trained and approved for installation of vapor mitigation coatings required for this Project with not less then 5 years experience.

B. Source Limitations: Obtain coatings from a single manufacturer.

C. Prior to start of work the concrete substrates shall be tested by the Special Inspector in accordance with the manufacturer’s recommendations. Tests shall be approved by the manufacturer’s representative.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original packages and containers with seals unbroken and bearing manufacturer's labels showing the following information:

1. Manufacturer's brand name.
2. Type of material.
3. Directions for storage.
4. Date of manufacture and shelf life.
5. Lot or batch number.
6. Mixing and application instructions.

B. Store materials in a clean, dry location protected from exposure to direct sunlight. In storage areas, maintain environmental conditions within range recommended in writing by manufacturer.

1.06 PROJECT CONDITIONS

A. Do not apply moisture vapor reduction system to unprotected surfaces or when water is accumulated on the surface of the concrete.

B. Do not apply water vapor reduction system when temperature is lower than 50° F or expected to fall below this temperature within 24 hours from time of application.

C. Allow continuous ventilation and indirect air movement at all times during application and curing process of the water vapor reduction system.

D. Protection: Protect water vapor reduction system to prevent damage from active rain or topical water for a minimum period of 24 hours from time of application.

1.07 REFERENCES

A. ASTM F2170 - Relative Humidity in Concrete Floor Slabs Using in situ Probes.

B. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.

C. ASTM C1583 - Standard Test Method for Tensile Strength of Concrete Surfaces and the Bond Strength or Tensile Strength of Concrete Repair and Overlay Materials by Direct Tension.

D. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.

E. ASTM D1308 - Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes.

F. ASTM F3010 – Two-Component Resin Based Membrane-Forming Moisture Mitigation Systems for Use Under Resilient Floor Coverings.

G. ASTM D2369 – Standard Test Method for Volatile Content of Coatings

1.08 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace systems that deteriorate during the specified warranty period. Perform all pre-installation warranty requirements from the product manufacturer.

B. Warranty Period: Minimum **(20)** years from the date of Certificate of Agency Use and Occupancy. Guarantees or warranties that start at the date of shipment from the factory, or from the completion date of an individual portion of the project, are not acceptable.

II. PART II - PRODUCTS

2.01 GENERAL: Use material recommended by the flooring manufacturer for the specific type of flooring to be installed. The vapor barrier shall be suitable for inclusion is the warranty for each type of flooring. Systems anticipated for the basis of specification products listed for each type of flooring include:

1. Flooring System:
   (a) Per Section 09.65.00 - Resilient Flooring System.

2.02 MANUFACTURER

A. Available Manufacturers: Provide products by one of the following:

1. Ardex Engineered Cements; Ardex MC Rapid.
2. CMP Lock Down
3. Koester American Corporation; Koester VAP 1 2000 System.
4. Laticrete International Inc.; Drytek MVB.
5. Or equal approved system.

B. MOISTURE VAPOR EMISSION CONTROL: One-Coat Moisture Control System for Concrete to Receive ARDEX Undergarments and Toppings:

1. Acceptable Products:

   (a) ARDEX MC™ RAPID; Manufactured by ARDEX Americas: 400 Ardex Park Drive, Aliquippa, PA, 15001, USA, (724) 203-5000, www.ardexamericas.com
      (i) *Local Ardex Representative: Barry Cullen, 508.561.0837, barr.cullen@ardexamericas.com*

   (b) Performance and Physical Properties: Meet or exceed the following values for material cured at 70° F+/-3°F (21° C+/-3°C) and 50% +/-5% relative humidity:

      (i) Application: Manual
      (ii) Material Requirements on CSP 3 Prepared Concrete: Approx. 250 - 270 sq. ft. (25 m^2) per mixed unit for 10 mils, and approx. 170 – 190 sq. ft. (16 – 18 m^2) per unit for 14 mils
      (iii) Permeability (ASTM E96): 0.06 perms
      (iv) 14 pH solution (ASTM D1308): No effect
      (v) Working Time: 20 minutes
      (vi) Pot Life: 20 minutes
      (vii) VOC: 19.9 g/L, A+B, ASTM D2369Walkable: Minimum of 4 hours
      (viii) Prime and Install Underlayment: Minimum 4 hours, maximum 24 hours

2. HYDRAULIC CEMENT UNDERLAYMENT: Hydraulic Cement-based Self-Leveling Underlayment

   (a) Acceptable Products:
      (i) ARDEX V 1200; Manufactured by ARDEX Americas: 400 Ardex Park Drive, Aliquippa, PA 15001 USA, (724) 203-5000, www.ardexamericas.com
      (ii) CMP, Level - 1
      (iii) Laticrete, Drytek Level-Ex
      (iv) Or equal compatible approved for use with the main system.

   (b) Primer: ARDEX P 82™ Ultra Prime or primer approved by the underlayment manufacturer.

   (c) Performance and Physical Properties: Meet or exceed the following values for material cured at 70° F+/-3°F (21° C+/-3°C) and 50% +/-5% relative humidity:
      (i) ARDEX K 10™
         a) Application: Barrel Mix or Pump
         b) Flow Time: 10 minutes
         c) Final Set: Approx. 90 minutes

d) Compressive Strength: 4500 psi (315 kg/cm^2) at 28 days, ASTM C109M.
e) Flexural Strength: 1000 psi (70 kg/cm^2) at 28 days, ASTM C348.
f) VOC: 0

(d) Water shall be clean, potable, and sufficiently cool (not warmer than 70°F).
(e) System shall be rated for deep fills / leveling, thickness as noted on drawings.

2.03 SYSTEM

A. Provide manufacturer's standard system, consisting of one to three coats, applied to a properly prepared concrete surface.

B. The water vapor reduction system shall be required to reduce vapor emissions by a minimum of 90% after final cure.

C. Provide compatible crack filler for cracks in excess of 1/32 inch.

2.04 MIX DESIGNS FOR VAPOR MITIGATION COATING

A. Use clean containers and mix thoroughly as per Manufacturer's requirements to obtain a homogeneous mixture. Use a low speed motor less than 400 rpm and a two bladed Jiffy mixing blade only. DO NOT AERATE. Mix ratios are measured by volume.

B. Mix Ratio: Mix Component A and B at a ratio recommended by manufacturer.

III. PART III - EXECUTION

3.01 EXAMINATION

A. Refer to Division 09 Sections for moisture criteria and testing requirements for each flooring type.

B. Examine substrates for compliance with requirements and for other conditions affecting performance of traffic coatings.
C. Prepare written report listing conditions detrimental to performance.

D. Verify compatibility with and suitability of substrates.

E. Begin coating application only after minimum concrete curing and drying period recommended by manufacturer has passed, after unsatisfactory conditions have been corrected, and after surfaces are dry.

F. Application of coating indicates acceptance of surfaces and conditions.

G. Review / coordinate final sub-straight requirements with flooring installer prior to the start of work.

3.02 PREPARATION

A. Manufacturer's representative shall inspect surfaces with regard to their suitability to receive moisture vapor reduction system with manufacturer's representative.

B. Mechanically scarify, shot or bead blast, the surface to obtain an ICRI profile of CSP 3 (Light shot-blast).

C. Repair concrete prior to moisture vapor reduction system installation as recommended by manufacturer.

D. Clean all surfaces to receive moisture vapor reduction system as recommended by manufacturer.

E. Clean surfaces with vacuum to remove residue off the substrate. Remove defective materials, and foreign matter such as dust, adhesives, leveling compounds, paint, dirt, floor hardeners, bond breakers, oil, grease,

curing agents, form release agents, efflorescence, laitance. Shot blast bee bees, etc. Repair cracks, expansion joint, control joints, and open surface honeycombs and fill in accordance with manufacturer's recommendations. Reinforcing fibers must be burned off, scraped and vacuumed, after shot blasting, leaving no fibers left on the concrete surfaces. Provide uncontaminated, sound surface.

F. Acid etching and chemical cleaning will not be accepted.

G. If the concrete substrate is too uneven to provide a uniform film thickness of the ARDEX MC™ RAPID (typically CSP 6 or higher), the substrate can be pre-smoothed. Please contact ARDEX Technical for guidance.

3.03 CRACK AND JOINT TREATMENT

A. Dormant control joints and dormant cracks greater than a hairline (1/32'' / 0.79 mm) must be pre-filled with ARDEX ARDIFIX™. Dormant cracks and dormant control joints must be filled in strict accordance with the installation instructions provided by the ARDEX Technical Service Department. Once the dormant cracks and dormant control joints have been filled properly, broadcast sand to refusal, and allow these areas to cure thoroughly. ARDEX recommends wearing an N-95 dust mask when broadcasting sand. Remove all excess sand prior to proceeding with the ARDEX MC RAPID installation.

B. All moving joints and moving cracks must be honored up through the ARDEX MC RAPID, the ARDEX underlayment and the floor covering by installing a fully flexible sealing compound designed specifically for use in moving joints, such as ARDEX ARDISEAL™ RAPID PLUS.

3.04 APPLICATION OF AEDEX MC RAPID *(part of system)*:

A. Examine substrates and conditions under which materials will be installed. Do not proceed with installation until unsatisfactory conditions are corrected.

B. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas from contact due to mixing and handling of materials.

C. Mixing: Comply with manufacturer's printed instructions and the following.

1. Each individual 22 lb. (10 kg) unit contains separate, pre-measured quantities of hardener (Part B) and the resin (Part A). After opening each container, stir the individual components thoroughly before blending. The hardening agent (Part B) is added to the resin (Part A)

2. Pour all of the hardener into the resin portion and stir thoroughly for a minimum of 3 minutes using a low speed drill and an epoxy mixing paddle. Once mixed, pour some of the epoxy back into the hardener container, stir for 10 seconds, and then pour all of the contents back into the resin container. Mix for an additional 30 seconds before applying.

D. Application: Comply with manufacturer's printed instructions and the following.

1. The required thickness for the ARDEX MC RAPID is dependent on application. Please refer to the technical data sheet for more information.

2. Apply the freshly mixed ARDEX MC™ RAPID at the minimum thickness specified in the technical data sheet to the prepared concrete surface in a uniform direction with a short-nap paint roller or notched squeegee with back-rolling for smoother surfaces, and a longer nap roller for more uneven substrates. To minimize the potential for pinhole formation, work the ARDEX MC™ RAPID into the surface with the roller to ensure maximum penetration. ARDEX MC™ RAPID can also be worked into the surface with a paintbrush for hard to reach areas and corners.

3. A sand broadcast is required for this application due to the overall thickness; see the technical data sheet. Where required, sand broadcast must proceed while the ARDEX MC RAPID is still in a fresh state (maximum 20 minutes). ARDEX recommends wearing an N-95 dust mask when broadcasting sand. Per the manufacturer, the sand must be kiln dried, appropriately sized and placed at a rate of 1 lb

per square foot.

4. Following the application of MC RAPID and primer (if needed) or sand broadcast, install the selected ARDEX Underlayment as outlined in the technical data sheet.

5. It is not necessary to re-test the substrate for moisture emissions prior to installing the coating or floor covering.

3.05 APPLICATION OF ARDEX V 1200™ *(part of system)*:

A. Examine substrates and conditions under which materials will be installed. Do not proceed with installation until unsatisfactory conditions are corrected.

B. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas from contact due to mixing and handling of materials.

C. Mixing: Comply with manufacturer's printed instructions and the following.

1. Add 5 quarts (4.75 L) of clean potable water per 50 lb. (22.7 kg) bag.

2. Mix using a ½" (min. 650 rpm) heavy-duty mixing drill with an ARDEX T-1 mixing paddle. Do not overwater.

3. For pump installations, ARDEX V 1200™ shall be mixed using the ARDEX ARDIFLO™ Automatic Mixing Pumps. Contact the ARDEX Technical Service Department (888) 512-7339 for complete pump operation instructions.

4. When mixing sanded materials, ARDEX recommends using the ARDEX DUSTFREE™ or a standard "gutter hook" vacuum attachment in combination with a wet/dry (Shop-Vac® style) vacuum and HEPA dust extraction vacuum system. Additionally, each bag should be handled with care and emptied slowly to avoid creating a plume of dust. Contact the ARDEX Technical Service Department for more details on ARDEX products and air quality management.

D. Application: Comply with manufacturer's printed instructions and the following.

1. ARDEX V 1200™ must be installed at a minimum thickness of 1/8" over the highest point in the floor, which typically results in an average thickness of ¼" or more over the entire floor. ARDEX V 1200™ can be installed up to 1 ½ " thick and can also be tapered to as thin an application as the sand will allow to match existing elevations. If a true featheredge is needed, ARDEX recommends using ARDEX FEATHER FINISH® for transitions.

2. Pour the liquid ARDEX V 1200™ and spread in place with the ARDEX T-4 Spreader. Immediately use the ARDEX T-5 Smoother or T-6 Spike Roller to smooth the surface. Wear non-metallic cleats to avoid leaving marks in the liquid ARDEX V 1200™.

3. **Additional Manufacture's Application Notes for this Project:**
   (a) The total thickness shall be achieved in two lifts, first lift shall be 1 ½" and the second lift shall be 1/4 - 3/4" depending on location and height of existing adjacent finished floor / flooring.
   (b) The sand placed on top of the MC Rapid eliminates the requirement for P-82 primer before the first lift.
   (c) After the first lift has set for twenty-four hours, the V1200 shall be primed with ARDEX P-51 acrylic primer, cut 1:1 with water and allowed to dry approximately one hour before the second lift of V1200 is applied.
   (d) Given the thickness of the lifts, the install may choose to add 3/8" clean, washed pea gravel to the mix to help with sloping / slumping during curing. If used, this stone is normally added at a ratio of two parts V1200 to one parts stone (by volume).

E. Curing

1. ARDEX V 1200™ can be walked on in 2-3 hours after installation. The cure time required prior to installing finish flooring will vary with the thickness of the ARDEX V 1200 installation and the type of flooring being installed. Contact ARDEX Technical Services Department (888) 512-7339 for information regarding recommended cure times.

3.06 FIELD QUALITY CONTROL

A. Where specified, field sampling of the ARDEX products is to be done by taking an entire unopened bag/unit of the product being installed to an independent testing facility to perform testing. There is no in-situ test method applicable for this system.

3.07 CLEANING

A. Remove debris resulting from water vapor reduction system installation from project site.

3.08 PROTECTION

A. Protect each coat during specified cure period from any kind of traffic, topical water and contaminants.

B. Prior to the installation of the finish flooring, the surface of the underlayment should be protected from abuse by other trades by the use of plywood, Masonite or other suitable protection course.

END OF SECTION
09.61.10

SECTION 09.65.00

RESILIENT FLOORING SYSTEM

I. PART 1 - GENERAL

1.01 GENERAL

A. The 00.72.00 **Conditions of the Contract** and all sections of **Division 01**, General Requirements shall be part of this section unless otherwise specifically excluded.

B. This Contractor must be familiar with all other Divisions and Sections which affect this Work.

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. Luxury vinyl tile (LVT).
2. HD vinyl tile (VCT).
3. Vinyl base.
4. Adhesives and accessories.

B. **Alternates:** N/A

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. Section 02.40.00 - SELECTIVE DEMOLITION, *for removal of all other flooring and base and initial floor prep at cavities.*
2. Section 09.61.10 - VAPOR MITIGATION AND IN_FILL AT SLAB, *for moisture mitigation, floor in-fill and secondary floor prep .*

1.03 SUBMITTALS

A. Submit under provisions of Section 01.33.00.

B. Submit product information on all flooring and base, along with all adhesives and installation requirements. Adhesive literature must state that it is approved for use with the submitted flooring.

C. Submit samples of full range of colors available for flooring and base. Provide two binders for LVT, two chains of color chips for Vinyl base.

D. If required by flooring manufacturer, submit qualifications that installer has attended approved training clinics or have received manufacturers approval to install product.

1.04 ENVIRONMENTAL REQUIREMENTS

A. Store materials for three days prior to installation in area of installation to achieve temperature stability.

B. Maintain ambient temperature required by adhesive manufacturer three days prior to, during, and 24 hours after installation of materials.

1.05 WARRANTIES

A. Provide manufacturer's standard warranty on installed products. Arrange inspections by manufacturer's authorized representatives if required as a condition for the warranty. Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

1.06 EXTRA MATERIAL

A. Installer shall provide the Owner with one extra full box of each color of flooring matching the flooring installed, for future repairs.

II. PART 2 PRODUCTS

2.01 LUXURY VINYL TILE (LVT)

A. Mannington "Amtico", or approved equal meeting the following:

1. Sizes and Patterns
   (a) Wood Planks.
   (b) Size: 6"x 36".
   (c) One color throughout, selected from full range available.
   (d) Installation pattern: one-third running bond.

2. Overall thickness: 0.096 inch (2.55 mm).

3. Wear Layer: 40 mil (1mm) with aluminum oxide UV cured finish. MOH hardness scale of 9 or better.

4. Static Load limit: 450 psi minimum.

5. ASTM F-1700, Class III, Type B.

6. ASTM E648, Class 1.

7. Warranty: 20 year Commercial Warranty.

B. Adhesive: premium grade waterproof , full spread type as approved by the manufacturer.

C. Equal systems by **Sellers** or **VanGelder** are also acceptable.

2.02 HEAVY DUTY RESILIENT TILE FLOORING (VCT) **(In-Fill in Hallway)**

A. Altro Dolce Essentials or approved equal meeting or exceeding the following:

1. Sizes and Patterns
   (i) Resilient Tiles
   (ii) Size: 12"x12".
   (iii) color from manufacturers full range.
   (iv) Installation pattern: TBD.
2. Overall thickness: 0.120 inch (3.0 mm).
3. Homogeneous construction.
4. Static Load limit: 1000 psi minimum.
5. ASTM E648, Class 1.
6. Warranty: 10 year Commercial Warranty.

B. Adhesive: premium grade waterproof , full spread type as approved by the manufacturer.

C. Equal systems by **Armstrong** or **VanGelder** are also acceptable.

2.03 VINYL BASE (VCB)

A. Armstrong, or approved equal, by Johnsonite or Roppe, meeting the following criteria:
   1. 6 inches high, 0.125 gauge thick
   2. Rounded top with cove base, and ribbed back.
   3. Interior corners shall be cut and coped (not mitered or formed from a single piece)
   4. Exterior corners shall be pre-molded.
   5. Color: **Two** colors throughout, as selected by Owner. One color in apartments and one color in all other areas.

2.04 ACCESSORIES

A. Sub-Floor Filler shall be as recommended by the manufacturer of the materials used.

B. Primers and Adhesives shall be waterproof and of type and shall be manufactured by, and recommended by, the manufacturer of the flooring it is to be used with. Adhesives shall be low odor and low VOC type.

C. Trowelable Leveling and Patching Compounds: Latex-modified, Portland cement based or blended hydraulic cement based formulation provided or approved by resilient product manufacturer for applications indicated.

D. Transition strips where flooring meets dissimilar floor material of a different thickness shall be vinyl. Where flooring material meets the same type of flooring (i.e. VCT to VCT), or where flooring meets flooring of same thickness, no transition strips are required.

III. PART 3 EXECUTION

3.01 PRE-INSTALLATION CONFERENCE

A. After receiving approved submittals and prior to ordering materials, schedule a pre-installation conference on site to review locations, colors, patterns, joints, etc with Owner and Architect. Bring full size samples for mockup. Provide 4 square feet of each product and color for mockup approval.

3.02 EXAMINATION

A. Coordinate installation to insure all other construction operations have been completed.

B. Provide fans, filters or other mechanical ventilation as required, to permit the continuous occupancy and use of the project area.

C. At least on week prior to staring work, perform moisture testing per ASTM F2170, and pH testing per ASTM F710, at 6 varied locations throughout the building as selected by Architect. Advise Owner and Architect of results prior to starting work.

D. Beginning of installation means acceptance of existing substrate and site conditions.

3.03 PREPARATION

A. Refer to Section 01.11.00 for phasing requirements.

B. Prepare concrete slabs per ASTM F170 to manufacturer's requirements.

C. Fill small damaged areas, low spots, with manufacturer's recommended sub floor filler.

D. Remove sub-floor ridges and bumps.

E. Apply, trowel, and float all repair materials to leave a smooth, flat, hard surface.

F. Prohibit traffic from area until filler is cured.

G. Vacuum clean substrate. Floors must be free of all foreign materials.

H. Apply primer if recommended by flooring manufacturer, in compliance with manufacturer's directions.

3.04 FIELD QUALITY REQUIREMENTS

A. Manufacturer's Field Services: Provide manufacturers field service consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturers's instructions.

3.05 FLOORING INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install floor tiles to completely fill rooms within the project area. Install sheet vinyl with no seams.

C. Provide control joints, spaced as recommended by flooring manufacturer. Advise Architect of proposed locations and obtain approval prior to installation.

D. Layout flooring so that no tile widths less than 1 ½" be installed wherever possible.

E. Mix tile from containers to ensure shade variations are consistent. Install tile with the grain in one direction. Install all flooring with the grain parallel with the shortest room dimension.

F. Spread only enough adhesive to permit installation of materials before initial set.

G. Set flooring in place and press with heavy roller to attain full adhesion.

H. Terminate flooring or make color change at centerline of doors where adjacent floor finish is dissimilar.

I. Install transition strips at unprotected or exposed edges, and where flooring meets dissimilar flooring thicknesses.

J. Scribe flooring to walls, columns, floor outlets, and other appurtenances to produce tight joints.

3.06 BASE INSTALLATION

A. Use the longest pieces of base possible, minimizing joints. Where joints are unavoidable, coordinate so that they fall behind appliances or similar items.

B. Fit joints of vinyl bases tight and vertical. Maintain minimum measurement of 18 inches between joints.

C. Miter internal base corners. At external corners, use premolded units. At exposed ends use premolded units.

D. Install base on solid backing. Repair existing plaster or drywall as required to create a level, sound substrate.

Bond tight to wall and floor surfaces.

E. Install VCB at base of casework, in rooms scheduled to receive new vinyl base. Scribe to fit toe kick.

F. Scribe and fit to door frames and other interruptions.

G. Spot repair and paint walls where disturbed by base removal and not covered by new base installation.

3.07 PROTECTION

A. Newly installed flooring should not be exposed to routine rolling load traffic (wheelchairs, walkers, carts, lifters, etc.) for at least 72 hours after installation to allow setting and drying of adhesives. If rolling loads cannot be avoided, protect the installation for 72 hours after installation by covering with ram boards.

3.08 CLEANING AND FINISHING

A. Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Remove excess adhesive from floor, base, and wall surfaces without damage.

B. RT: Clean in accordance with manufacturer's cleaning and maintenance guide. Apply 2 coats of manufacture's finish per manufacturers instructions.

C. LVT, VCT and VCB: Clean in accordance with manufacturer's instructions.

END OF SECTION
09.65.00

SECTION 09.90.00

PAINTING

I PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

A. The General Conditions, Supplementary General Conditions, and applicable parts of Division I as part of this Section.

B. This Contractor must be familiar with all other Divisions and Sections which affect this Work.

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.) The work consists of the following major items:
- (a.) Field painting interior wood trim and enclosures, etc..
- (b.) Field painting GWB and CMU walls and accessories.
- (c.) Field painting metal ceiling and trusses.
- (d.) Field painting of doors and frames (on room side).
- (e.) Caulking around dissimilar materials / joints in areas to be painted.
- (f.) Priming of all surfaces to receive paint.
- (g.) Preparation of all items to be painted.
- (h.) Painting surfaces as scheduled herein.
- (i.) Protection of all items which may be affected by the work of this section, to remain.
- (j.) All other items shown on the drawings to be painted.

B. **Alternates:** N/A

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 this Section, and will be performed under the designated Section:

(1.) Section 01.73.29 - CUTTING AND PATCHING: fabrication and installation of enclosures and trim.
(2.) Section 06.20.00 - FINISH CARPENTRY: fabrication and installation of enclosures and trim.

1.03 SUBMITTALS

A. Submit product data on all finishing products under provisions of Section 01.33.00.

B. Submit one complete fan deck for color selection.

1.04 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.

1.05 ENVIRONMENTAL REQUIREMENTS

A. Provide continuous ventilation and heating facilities to maintain surface and ambient temperatures above 45 degrees F (7 degrees C) for 24 hours before, during, and 48 hours after application of finishes, unless required otherwise by manufacturer's instructions.

B. Do not apply exterior coatings during rain or snow, or when relative humidity is above 50 percent, unless required otherwise by manufacturer's instructions.

C. Minimum Application Temperatures for Latex Paints: 45 degrees F (7 degrees C) for interiors; 50 degrees F (10 degrees C) for exterior; unless required otherwise by manufacturer's instructions.

D. Minimum Application Temperature for Varnish and Finishes: 65 degrees F (18 degrees C) for interior or exterior, unless required otherwise by manufacturer's instructions.

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 primers for each coating system from the same manufacturer as the finish coats.

C. Mockups: Provide a full-coat benchmark finish sample for each type of coating and substrate required. Comply with procedures specified in PDCA P5. Duplicate finish of approved sample Submittals.

(1.) Designer will select one room or surface to represent surfaces and conditions for application of each type of coating and substrate.
(a.) Wall Surfaces: Provide samples on at least 4 sq. ft.
(b.) Small Areas and Items: Designer will designate items or areas required.

(2.) Apply benchmark samples, according to requirements for the completed Work, after permanent lighting and other environmental services have been activated. Provide required sheen, color, and texture on each surface.

(a.) After finishes are accepted, Designer will use the room or surface to evaluate coating systems of a similar nature.

(3.) Final approval of colors will be from benchmark samples.

1.07 WARRANTY

A. Contractor shall warranty the finishes applied for a period of one year from final completion, and make any repairs required due to blistering, peeling or other such failures of the finish.

II PART 2 PRODUCTS

2.01 MANUFACTURERS

A. All materials specified in the painting schedule are **Benjamin Moore** Paints.

B. **ICI, Pratt & Lambert or Sherwin Williams** paints may be used may be used of the same quality or better.

2.02 MATERIALS

A. Coatings: 100% Acrylic paint for all. 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.

2.03 ACCESSORY MATERIALS

A. Caulking: DAP "Kwik-Seal Plus" or approved equal siliconized latex caulk with integral anti-microbial additive, white, suitable for painting.

B. Include an "Anti-Mildew" additive in the paint specified for the Bathroom.

III PART 3 EXECUTION

3.01 INSPECTION

A. Surface to be painted must be clean, dry and in sound conditions. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

D. Beginning of installation means acceptance of existing surfaces.

3.02 PREPARATION

A. Remove electrical plates, hardware, light fixture trim, and fittings prior to preparing surfaces or finishing.

B. Correct minor defects and clean surfaces which affect work of this Section.

C. Shellac and seal marks which may bleed through surface finishes.

D. Impervious Surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

E. Plaster and drywall surfaces: Fill minor defects. Spot prime defects after repair.

F. Interior Wood Items Scheduled to Receive Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Coordinate the filling of nail holes and cracks after primer has

dried; sand between coats with General Contractor. Interior trim to receive primer coat and first finish coat prior to installation. Second and final coat to be applied after trim is installed and fastener holes have been filled.

G. Uncoated Steel and Iron Surfaces: Remove grease, scale, dirt, and rust. Where heavy coatings of scale are evident, remove by wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Spot prime paint after repairs.

H. Touch up any voids in sealant placed by others, prior to painting.

I. Sand existing T&G wood ceiling in preparation for new coating.

J. Wood and Metal Doors Scheduled for Painting: Seal top and bottom edges with primer.

K. Caulk the following joints at surfaces scheduled for painting, prior to painting:
(1.) Door and window trim (trim-to-wall, trim-to-frame).
(2.) Cabinets and counters where they meet the wall.

3.03 COORDINATION AND PROTECTION

A. Coordinate painting of exterior electrical items to occur after demolition of siding but prior to installation of new siding, to minimize the chance for spills or drips on new siding.

B. Painter to provide all required protections for work surrounding areas to be painted, and will be responsible for any cleaning required, or replacement of materials that cannot be completely cleaned. Furnish drop cloths, shields, and protective methods to prevent splatter or droppings from disfiguring other surfaces.

C. Protect elements surrounding the work of this Section from damage or disfiguration.

D. Repair damage to other surfaces caused by work of this Section.

3.04 APPLICATION COATINGS

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.

F. The application of the final coat and of any touch-up paint should be done under conditions that reflect the manufacturer’s recommendations regarding weather conditions and temperature.

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.

D. Remove empty paint containers from site. Deliver unused paint to Owner.

3.06 CLOSE OUT

A. Furnish a typewritten list of all paint products used, including the paint codes required for mixing future matches. GC to include list in close out manuals.

3.07 PAINT SCHEDULE

A. **Interior surfaces:**

(1.) Gypsum board finish at interiors (walls):
(a.) First Coat - Benjamin Moore Fresh Start All Purpose 100% Acrylic Primer. White 023-00.
(b.) Second and Third Coat - Benjamin Moore K and B 322.
(c.) Color: to be selected by Owner.***(Owner to select four separate colors, total)***
(d.) Finish: Eggshell.
(e.) ***(All interior paint shall be bathroom rated)***

(2.) CMU at interiors (walls):
(a.) First Coat - Benjamin Moore Ultra Spec Masonry Int/Ext Acrylic High Build Masonry Primer. (N609).
(b.) Second and Third Coat - Benjamin Moore Ultra Spec 500
(c.) Color: to be selected by Owner.***(Owner to select four separate colors, total)***
(d.) Finish: Eggshell.
(e.) ***(All interior paint shall be bathroom rated)***

(3.) Interior wood doors and trim, wood, etc. (new and existing):
(a.) First Coat - Benjamin Moore Fresh Start All Purpose 100% Acrylic Primer. White 023-00.
(b.) Second and Third Coat - Benjamin Moore - Regal Semi-Gloss Finish, 100% Acrylic - N333.
(c.) Color: to be selected by Owner. ***(Owner to select two separate colors per room)***
(d.) Finish: Semi-Gloss
(e.) ***(All interior paint shall be bathroom rated)***

(4.) Existing painted metal ceiling, trusses, door frames, accessaries and similar:
(a.) Surface preparation: Solvent Clean per SSPC-SP1
(b.) First Coat - Benjamin Moore Fresh Start All Purpose 100% Acrylic Primer. White 023-00.
(c.) Second and Third Coat - Benjamin Moore K and B 322.
(d.) Color: to be selected by Owner.
(e.) Finish: Eggshall.

END OF SECTION
09.90.00

73 William Franks Drive
West Springfield. MA 01089
Telephone: (413) 781-0070
www: oneatlas.com

January 4, 2022

Mr. Steve VanDyke
Nault Architects Inc.
71 Hope Avenue
Worcester, MA 01603

Re: Asbestos Testing Results
Chandler Magnet Elementary School
Room 118 Renovations
Worcester Public Schools
Worcester, Massachusetts

Dear Mr. VanDyke:

Atlas Technical Consultants, LLC (ATLAS) was retained by Nault Architects Inc. to perform an Asbestos Survey at the above referenced site. Specifically, ATLAS's Scope of Work included the following:

1. Performance of a limited Asbestos Inspection for accessible suspect asbestos-containing materials (ACM) to determine the type, location and condition of ACM present that will be affected by the forthcoming renovation work within Room 118.
2. Provide a written summary of all on-site findings including remediation requirements.

Limitations:

- *ATLAS's survey only included accessible areas within Room 118.*
- *Destructive testing to access hidden materials behind solid walls, floors or ceilings was not performed.*
- *No other areas within the interior or exterior of the building were investigated by ATLAS.*

Outlined below is a summary of ATLAS's findings:

I. ASBESTOS SURVEY

ATLAS's asbestos inspection included a visual assessment of accessible suspect asbestos-containing materials and subsequent bulk sampling and analysis was performed. The Asbestos inspection and bulk sampling was performed in accordance with the methods outlined in the U.S. EPA guidance document titled, *Guidance for Controlling Asbestos-Containing Materials in Buildings* (Document No. 560/5-85/024). In addition, bulk sampling of asbestos was performed in accordance with 40 CFR Part 763, Asbestos Hazard Emergency Response Act (AHERA) requirements for number of samples and types of asbestos materials to be sampled. According to these requirements, materials are classified as either surfacing (e.g., ceiling plaster, wall plaster, spray-applied fireproofing), thermal system insulation (e.g., pipe insulation, pipe fitting insulation, boiler insulation), or miscellaneous materials (e.g., floor tile, ceiling tile, wallboard).

All bulk samples were analyzed for asbestos content using Polarized Light Microscopy (PLM) with Dispersion Staining EPA Method 600/R-93/116 per 40 CFR 763. To qualify as asbestos containing, the material must be determined to contain *greater than one percent (>1%)* asbestos from a homogeneous material area set of samples.

Consequently, according to the EPA/AHERA criteria, all bulk samples from a homogeneous area must be found to contain *less than or equal to one percent (≤1%)* asbestos in order to be classified as non-asbestos-containing.

Findings:

- Asbestos-containing materials were detected at the site.
- In accordance with Massachusetts Department of Environmental Protection (DEP) and EPA's National Emission Standards for Hazardous Air Pollutants (NESHAP) Regulations, materials found to be asbestos-containing must be abated prior to renovation/demolition activities.
- All asbestos abatement work shall be performed by a Massachusetts licensed asbestos abatement contractor in accordance with local, state and federal regulations.
- The following **Table 1.0** summarizes materials confirmed to be asbestos-containing at the site.
- Refer to **Attachment A** for the Asbestos Bulk Sample Analysis Laboratory Reports.

TABLE 1.0
SUMMARY OF CONFIRMED ASBESTOS MATERIALS

LOCATION	MATERIAL	QUANTITY	NOTES
Room 118	Transite Panels Behind Perimeter Wall/Vent Cabinet	165 SF	

- The following materials tested by ATLAS were found to be negative for asbestos:
  - Residual Cove Base Mastic
  - Brown Caulking on Cove Base Wall
  - Black Floor Mastic
  - Concrete Floor
  - Residual Material in Wall Vent Cavity
  - Mastic on Wood Below Wall/Vent Cabinet
  - Material on Floor on Block

If you have any questions regarding this report, please give Derrick Wissman a call directly at (413) 664-6687.

ATLAS TECHNICAL CONSULTANTS, LLC

Derrick Wissman
Senior Project Manager
For ATLAS
Direct Line 413-664-6687
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Area Manager
For ATLAS
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ATTACHMENT A

PLM BULK ASBESTOS LABORATORY REPORT

EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Tel/Fax: (212) 290-0051 / (212) 290-0058
http://www.EMSL.com / manhattanlab@emsl.com

EMSL Order: 032121740
Customer ID: ATC62
Customer PO: 11-81-0030
Project ID:

Attention: Derrick Wissman
Atlas Technical
73 William Franks Drive
West Springfield, MA 01089

Phone: (413) 781-0070
Fax: (413) 781-3734
Received Date: 11/29/2021 11:19 AM
Analysis Date: 12/02/2021 - 12/04/2021
Collected Date: 11/24/2021

Project: CHANDLER MAGNET SCHOOL / NAULT ARCHITECTS / WORCESTER, MA.

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
CMS-01A *032121740-0001*	ROOM 118 - RESIDUAL COVEBASE MASTIC	Various Non-Fibrous Homogeneous		15% Quartz 25% Ca Carbonate 4% Mica 56.0% Non-fibrous (Other)	**None Detected**
CMS-01B *032121740-0002*	ROOM 118 - RESIDUAL COVEBASE MASTIC	Gray/Tan Non-Fibrous Homogeneous	3% Cellulose	55% Quartz 2% Mica 40.0% Non-fibrous (Other)	**None Detected**
CMS-02A *032121740-0003*	ROOM 118 - BROWN CAULK ON RESIDUAL COVEBASE WALL	Brown Non-Fibrous Homogeneous		12% Quartz 60% Ca Carbonate 3% Mica 25.0% Non-fibrous (Other)	**None Detected**
CMS-02B *032121740-0004*	ROOM 118 - BROWN CAULK ON RESIDUAL COVEBASE WALL	Brown Non-Fibrous Homogeneous		60% Ca Carbonate 40.0% Non-fibrous (Other)	**None Detected**
CMS-03A *032121740-0005*	ROOM 118 - BLACK FLOOR MASTIC	Brown/Black Non-Fibrous Homogeneous		22% Quartz 6% Ca Carbonate 3% Mica 69.0% Non-fibrous (Other)	**None Detected**
CMS-03B *032121740-0006*	ROOM 118 - BLACK FLOOR MASTIC	Black Non-Fibrous Homogeneous		5% Quartz 95.0% Non-fibrous (Other)	**None Detected**
CMS-04A *032121740-0007*	ROOM 118 - FLOOR CONCRETE	Gray Non-Fibrous Homogeneous	3% Cellulose	55% Quartz 8% Ca Carbonate 4% Mica 30.0% Non-fibrous (Other)	**None Detected**
CMS-04B *032121740-0008*	ROOM 118 - FLOOR CONCRETE	Gray Non-Fibrous Homogeneous		45% Quartz 20% Ca Carbonate 5% Mica 30.0% Non-fibrous (Other)	**None Detected**
CMS-05A *032121740-0009*	ROOM 118 - RESIDUAL MATERIAL IN WALL VENT CACITY	Brown Fibrous Homogeneous	60% Cellulose 6% Synthetic 3% Glass	12% Ca Carbonate 19.0% Non-fibrous (Other)	**None Detected**

Initial report from: 12/04/2021 09:36:28

EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Tel/Fax: (212) 290-0051 / (212) 290-0058
http://www.EMSL.com / manhattanlab@emsl.com

EMSL Order: 032121740
Customer ID: ATC62
Customer PO: 11-81-0030
Project ID:

Attention: Derrick Wissman
Atlas Technical
73 William Franks Drive
West Springfield, MA 01089

Phone: (413) 781-0070
Fax: (413) 781-3734
Received Date: 11/29/2021 11:19 AM
Analysis Date: 12/02/2021 - 12/04/2021
Collected Date: 11/24/2021

Project: CHANDLER MAGNET SCHOOL / NAULT ARCHITECTS / WORCESTER, MA.

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

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
CMS-05B *032121740-0010*	ROOM 118 - RESIDUAL MATERIAL IN WALL VENT CACITY	Brown Fibrous Homogeneous	80% Cellulose 7% Synthetic	13.0% Non-fibrous (Other)	**None Detected**
CMS-06A *032121740-0011*	ROOM 118 CABINETS NEAR WINDOWS - TRANSITE PANEL BEHIND WALL UNITS	Beige Non-Fibrous Homogeneous		12% Quartz 35% Ca Carbonate 4% Mica 19.0% Non-fibrous (Other)	**30% Chrysotile**
CMS-06B *032121740-0012*	ROOM 118 CABINETS NEAR WINDOWS - TRANSITE PANEL BEHIND WALL UNITS				**Positive Stop (Not Analyzed)**
CMS-08A *032121740-0013*	ROOM 118 CABINETS NEAR WINDOWS - MASTIC ON WOOD BELOW WINDOW CABINETS	Various Non-Fibrous Homogeneous		10% Quartz 90.0% Non-fibrous (Other)	**None Detected**
CMS-08B *032121740-0014*	ROOM 118 CABINETS NEAR WINDOWS - MASTIC ON WOOD BELOW WINDOW CABINETS	Black Non-Fibrous Homogeneous	10% Cellulose	90.0% Non-fibrous (Other)	**None Detected**
CMS-09A *032121740-0015*	ROOM 118 - SUSPECT MATERIAL ON FLOOR ON BLOCK	Brown/Tan Fibrous Homogeneous	80% Cellulose 7% Synthetic	13.0% Non-fibrous (Other)	**None Detected**
CMS-09B *032121740-0016*	ROOM 118 - SUSPECT MATERIAL ON FLOOR ON BLOCK	Brown Fibrous Homogeneous	60% Cellulose	40.0% Non-fibrous (Other)	**None Detected**

Initial report from: 12/04/2021 09:36:28

EMSL Analytical, Inc.
307 West 38th Street New York, NY 10018
Tel/Fax: (212) 290-0051 / (212) 290-0058
http://www.EMSL.com / manhattanlab@emsl.com

EMSL Order: 032121740
Customer ID: ATC62
Customer PO: 11-81-0030
Project ID:

Attention: Derrick Wissman
Atlas Technical
73 William Franks Drive
West Springfield, MA 01089

Phone: (413) 781-0070
Fax: (413) 781-3734
Received Date: 11/29/2021 11:19 AM
Analysis Date: 12/02/2021 - 12/04/2021
Collected Date: 11/24/2021

Project: CHANDLER MAGNET SCHOOL / NAULT ARCHITECTS / WORCESTER, MA.

The samples in this report were submitted to EMSL for analysis by Asbestos Analysis of Bulk materials via EPA/600 (0513) Method using Polarized Light Microscopy. The reference number for these samples is the EMSL Order ID above. Please use this reference number when calling about these samples.

Report Comments:

Sample Receipt Date:	11/29/2021	Sample Receipt Time:	11:19 AM
Analysis Completed Date:	12/04/2021	Analysis Completed Time:	3:09 AM

Analyst(s):

Christopher Cernansky PLM (7)

Ghaly Hemaya PLM (1)

Valeria Cevallos PLM (7)

Samples Reviewed and approved by:

Charles Johnson, Asbestos Laboratory Manager
or other approved signatory

Initial report from: 12/04/2021 09:36:28

032121740

Relinquished by:	Jim Lowell	Date/Time:	11-24-2021
Received by:		Date/Time:	11/29/21 11:19Am
Relinquished by:		Date/Time:	
Received by:		Date/Time:	
Relinquished by:		Date/Time:	
Received by:		Date/Time:	

EMSL FX: 7962 4950 2720

Company Name:	Atlas Techniical
Company Address:	73 William Franks Rd
City: West Springfield	State: MA Zip: 01089

EMSL ANALYTICAL,INC
307 West 38th Street
New York, NY 10018
(212)-290-0051

Phone: (413) 781-0070	Project Name: Chandler Magnet School/Nault Architects	Analysis Type: PLM
	Project Address: Worcster, Ma.	Positive Stop: Yes
Results to: Derrick.wissman@oneatlas.com	Project Manager: Derrick Wissman	Turnaround Time: 5-Days
Verbal Results: Yes No	Project Number: TBA	Fax Copy by:
Cell or Pager 1-413-664-6687	Sampled by: Jim Lowell Date: 11-24-21	Return Samples: Yes No
Site Fax:	Special Instructions	
Additional Fax:	Assume Sample #07,	

Lab ID	Field ID	Location	Sample Description	Homogenous Area #
	CMS-01a	Room 118	Residual Cove Base Mastic	1
	CMS-01b	Room 118	Residual Cove Base Mastic	1
	CMS-02a	Room 118	Brown Caulk on Residual Cove Base Wall	2
	CMS-02b	Room 118	Brown Caulk on Residual Cove Base Wall	2
	CMS-03a	Room 118	Black Floor Mastic	3
	CMS-03b	Room 118	Black Floor Mastic	3
	CMS-04a	Room 118	Floor Concrete	4
	CMS-04b	Room 118	Floor Concrete	4
	CMS-05a	Room 118	Residual Material In Wall Vent Cacity	5
	CMS-05b	Room 118	Residual Material In Wall Vent Cacity	5
	CMS-06a	Room 118 Cabinets Near Windows	Transite Panel Behind Wall Units	6
	CMS-06b	Room 118 Cabinets Near Windows	Transite Panel Behind Wall Units	6
	CMS-08a	Room 118 Cabinets Near Windows	Mastic on Wood Below Window Cabinets	7

2021 NOV 29 AM 11:19

OrderID: 032121740

0312.040

Relinquished by:	Jim Lowell	Date/Time:	11-24-2021
Received by:		Date/Time:	11/29/21 11:19AM
Relinquished by:		Date/Time:	
Received by:		Date/Time:	
Relinquished by:		Date/Time:	
Received by:		Date/Time:	

Company Name:	Atlas Techniical
Company Address:	73 William Franks Rd
City: West Springfield	State: MA Zip: 01089

EMSL ANALYTICAL,INC
307 West 38th Street
New York, NY 10018
(212)-290-0051

Phone: (413) 781-0070	Project Name: Chandler Magnet School/Nault Architects	Analysis Type: PLM
	Project Address: Worcster, Ma.	Positive Stop: Yes
Results to: Derrick.wissman@oneatlas.com	Project Manager: Derrick Wissman	Turnaround Time: 5-Days
Verbal Results: Yes No	Project Number: TBA	Fax Copy by:
Cell or Pager 1-413-664-6687	Sampled by: Jim Lowell Date: 11-24-21	Return Samples: Yes No
Site Fax:	Special Instructions	
Additional Fax:	Assume Sample #07,	

Lab ID	Field ID	Location	Sample Description	Homogenous Area #
	CMS-08b	Room 118 Cabinets Near Windows	Mastic on Wood Below Window Cabinets	7

2021 NOV 29 AM 11:19

Page 2 Of 2

OrderID: 032121740