PROJECT MANUAL

McGrath Elementary School
Cafeteria / Gym Flooring Replacement
493 Grove Street
Worcester, MA 01605

Worcester Public Schools
Facilities Management
115 NE Cutoff
Worcester, MA 01606

100% Construction Documents
January 17, 2024

Awarding Authority:

City of Worcester
Public Schools Department
20 Irving Street,
Worcester, MA 01609

Architect:

Habeeb & Associates Architects
150 Longwater Drive
Norwell, MA 02061
H&A JN 2124.05

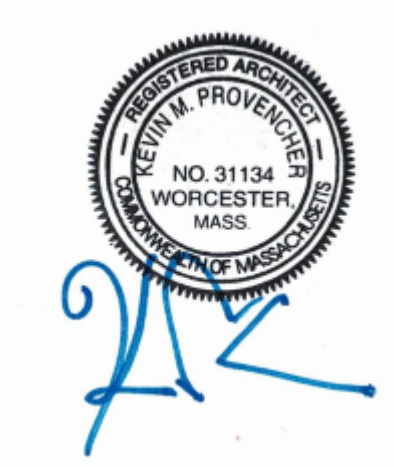
Worcester Public Schools
Worcester, MA

January 17, 2024

PROFESSIONAL SEALS

SPECIFICATIONS

Kevin M. Provencher
Habeeb & Associates Architects
100 grove Street, Suite 303
Worcester, MA 01605
Architect-of-Record



END OF PROFESSIONAL SEALS

Worcester Public Schools
Worcester, MA

January 17, 2024

Section 00 0010

TABLE OF CONTENTS

END OF SECTION

Worcester Public Schools
Worcester, MA

January 17, 2024

SECTION 00 3126

EXISTING HAZARDOUS MATERIAL INFORMATION

PART 1 – GENERAL

1.1 DESCRIPTION

A. The following report is bound in this section of the Project Manual for reference:

Test Report: Asbestos Analysis

Prepared by Atlas Technical Consultants, Dated August 9, 2022

END OF SECTION

EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order:	042218971
Customer ID:	ATC62
Customer PO:	11-81-0030
Project ID:	

Attention:	Brian Williams	**Phone:**	
	Atlas Technical	**Fax:**	(413) 781-3734
	73 William Franks Drive	**Received Date:**	08/03/2022 9:25 AM
	West Springfield, MA 01089	**Analysis Date:**	08/04/2022 - 08/09/2022
		Collected Date:	08/02/2022

Project: 183WPS2268 / McGrath School / 493 Grove St. Worcester

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**
MS-1A *042218971-0001*	Cafeteria / Gym - Brown Rubber Flooring	Brown Non-Fibrous Homogeneous	HA: 1	100% Non-fibrous (Other)	None Detected
MS-1B *042218971-0002*	Cafeteria / Gym - Brown Rubber Flooring	Brown Non-Fibrous Homogeneous	HA: 1	100% Non-fibrous (Other)	None Detected
MS-2A *042218971-0003*	Cafeteria / Gym - Adhesive on 1A	Brown Non-Fibrous Homogeneous	HA: 2	100% Non-fibrous (Other)	None Detected
MS-2B *042218971-0004*	Cafeteria / Gym - Adhesive on 1B	Brown/Tan Non-Fibrous Homogeneous	HA: 2	100% Non-fibrous (Other)	None Detected
MS-3A *042218971-0005*	Cafeteria / Gym - Grey Concrete on 1A	Gray Non-Fibrous Homogeneous	HA: 3	100% Non-fibrous (Other)	None Detected
MS-3B *042218971-0006*	Cafeteria / Gym - Grey Concrete on 1B	Gray Non-Fibrous Homogeneous	HA: 3	100% Non-fibrous (Other)	None Detected
MS-4A *042218971-0007*	Cafeteria / Gym - 4" Black Cove Base	Black Non-Fibrous Homogeneous	HA: 4	100% Non-fibrous (Other)	None Detected
MS-4B *042218971-0008*	Cafeteria / Gym - 4" Black Cove Base	Black Non-Fibrous Homogeneous	HA: 4	100% Non-fibrous (Other)	None Detected
MS-5A *042218971-0009*	Cafeteria / Gym - Brown Adhesive on 4A	Brown Non-Fibrous Homogeneous	HA: 5	100% Non-fibrous (Other)	None Detected
MS-5B *042218971-0010*	Cafeteria / Gym - Brown Adhesive on 4B	Brown Non-Fibrous Homogeneous	HA: 5	100% Non-fibrous (Other)	None Detected

Initial report from: 08/09/2022 00:51:17

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Project ID:	

Analyst(s)

Julianna Hosbach (2)
Michael Bocchicchio (2)
Nicholas Montoya-Orozco (6)

Samantha Rundstrom, Laboratory Manager
or Other Approved Signatory

Initial report from: 08/09/2022 00:51:17

Worcester Public Schools
Worcester, MA

January 17, 2024

SECTION 00 8600

DRAWING LIST

GENERAL

G-001 COVER SHEET
G-002 SYMBOLS, ABBREVIATIONS, GENERAL NOTES
G-003 FIRST FLOOR OVERALL PLAN

ARCHITECTURAL

A-111 DEMOLITION AND CONSTRUCTION PLAN
A-112 STRIPING PLAN
A-113 DETAILS

END OF SECTION

SECTION 010100 - SUMMARY OF WORK

PART 1 – GENERAL

1.1 CONTRACT DOCUMENTS

A. The Contract Documents include the Drawings as enumerated on the Title Drawing, the general provisions of Contract, including General and Supplemental Conditions, and the provisions of this Project Manual and Addenda as a whole represent and describe the work and requirements of the Project.

1.2 GENERAL REQUIREMENTS

Attention is directed to the general and supplementary conditions and Division 1 including all sub-divisions therein attached in this document and drawings, which are made a part of this section.

1.3 SUBSTANTIAL COMPLETION

A. The Date of Substantial Completion shall be August 16, 2024 for Contract work.

1. The Date of Substantial Completion shall remain the same, as stated above, regardless of any alternate(s) chosen to be included in the Contract by the Owner.

B. The Contractor shall obtain a Certificate of Occupancy on or before the Date of Substantial Completion.

1.4 PROJECT DESCRIPTION

A. The project scope generally consists of removal and replacement of flooring in the Cafeteria / Gym, including vinyl wall base, removal of existing flooring and wall base, and any other related work necessary to complete all of the Work of the respective Sections and indicated on the drawings.

B. The Work of this project shall be performed by the general contractor and filed subcontractors.

C. The Work of this project also includes the requirements in the Contract, the Sub-Contract(s), Sections 0 and Division 1 Sections, in their entirety.

RELATED WORK UNDER OTHER CONTRACTS

A. Work by other contractors, which will be under separate contract, may take place during the work of this contract adjacent to and within work areas of this site

B. Cooperate fully with other contractors so that work under those contracts may be carried out smoothly, without interfering with or delaying work under this contract.

1.5 QUALITY ASSURANCE

A. Requirements of Regulatory Agencies; perform demolition work in accordance with applicable rules, regulations, codes, and ordinances of local, state and federal authorities.
B. Obtain and pay for necessary building permits, licenses and certificates and give notices as required during the performance of the Work.
C. Provide 4 copies of shop drawings and literature for Architects review and approval for the items referenced in the specifications.
D. Provide schedule and work plan within one week of the contract signing.
E. Attend weekly meetings (or as scheduled) with the Architect and Owner's Representative as scheduled.
F. Provide all Closeout documents including, final acceptance, warranties, guaranties and bonds.

1.6 RELATED WORK UNDER OTHER CONTRACTS

A. Work by other contractors, which will be under separate contract, may take place during the work of this contract adjacent to and within work areas of this site. This work, under other contract, shall be coordinated between the different General Contractors. The security system will be installed by the Owner under separate Contract and the general Contractor shall work with the Owners vendor to coordinate their work with the General contractor's work.

B. Cooperate fully with separate contractors so that work under those contracts may be carried out smoothly, without interfering with or delaying work under this contract.

1.7 WORK SEQUENCE SCHEDULING AND COORDINATION

A. The Work shall be sequenced, scheduled, and coordinated to achieve the Date of Substantial Completion.

1. All deliveries must be scheduled at a minimum of 48-hours in advance with the Architect and Owner.
2. All existing utility tie-in's must be scheduled and coordinated at a minimum of 72-hours in advance with the Architect and Owner.

B. The General Contractor and each Sub-Contractor shall establish and increase or decrease as appropriate the workforce, days of work, number of shifts, work hours, materials, tools and equipment needed to maintain and achieve the Date of Substantial Completion.

C. The General Contractor and each Sub-Contractor shall increase the workforce, days of work, number of shifts, work hours, materials, tools, and equipment needed to maintain the Date of Substantial Completion as necessary to accommodate any additional work authorized by Construction Change Directives and Change Orders modifications.

D. General Contractor will be responsible for the proper conduct of the work to ensure that all trades work together, and in harmony, to achieve substantial and final completion as specified.

1.8 WORK HOURS

A. Normal working hours are to be Monday thru Friday from 7:00 AM to 2:45 PM, except Legal Holidays. Any working hours outside of these times shall be considered "Extended Hours" and treated as described below.

B. Extended work hours shall require prior scheduling and coordination with the Architect and Owner at a minimum of 48-hours in advance. Extended work hours on Sundays and Legal Holidays may also require a permit from the Police Department.

1. Upon permission from the Architect and Owner, and prior to the start of any extended work, pay for all fees and obtain through the City of Worcester Police Department a work permit for all Sundays and Legal Holidays.

C. The Contractor shall pay any overtime required for the City's Clerk of Works/Owner's Representative to be on site for any work performed outside of normal working hours as defined above. No work shall take place outside of normal working hours without prior approval and the City's Clerk of Works/Owner's Representative on site.

D. Any project related activities may not interfere with the enjoyment and use of abutting areas within the building or adjacent properties during any extended work hours.

1.9 CONTRACTOR USE OF THE PREMISES

A. General Contractor shall have use of the site from date of contract to the Date of Substantial Completion as described above in the Work Hours paragraph.

B. Construction vehicle access and deliveries to the project shall be made during working hours.

C. All contractor personnel shall enter and exit the construction area through Access Driveway.

D. Do not close or obstruct the parking lot, driveways or sidewalks without the proper permit. Conduct operations with minimum traffic interference.

E. The General Contractor shall also be responsible for returning the public areas adjacent to each work area to their original state prior to the start of work in that area.

F. The use of internal combustion engine driven power equipment is prohibited within the building. Alternate power sources, i.e. generators and compressors, may be placed outside the building to provide power to equipment. Placement of any alternate power sources shall be subject to prior Architect and Owner approval.

G. There will be no washing or washing out of any vehicles at the project site. The contractor shall make necessary provisions to accommodate this work off site.

H. All cleaning and wash-down of tools and/or equipment shall be performed in areas designated only by the Architect. This will be strictly enforced.

1.10 CONTRACTOR USE OF CITY STREETS

A. The General Contractor's personnel, and all other personnel employed on the project, shall limit their parking on the site to within the areas designated for construction parking and as permitted by the General Contractor. Additionally, Contractor personnel may park as legally allowed within City Limits. Parking on street sidewalks is prohibited.

B. Driveway entrances, walks, and yards to abutting properties shall be kept unobstructed at all times.

1.11 WORK CONDITIONS

A. Neither the General Contractor, nor Sub-Contractors at any level, nor their employees shall bring illegal substances or alcoholic beverages on the premises.

B. Vulgar, abusive, obscene language or behavior will not be tolerated.

C. Contractor's personnel engaging in the above shall be removed from the job-site.

D. Radios or any type of “music” broadcasting systems are not allowed.

E. This site is smoke-free; therefore smoking is prohibited within the site limits.

1.12 PROJECT MANAGER, SUPERINTENDENTS, FIELD ENGINEER AND FOREMAN

A. The General Contractor shall provide a qualified General Superintendent, who shall be present, full time, on site daily during all work in progress until the Date of Substantial Completion, and for such additional time thereafter as the Architect may determine. Only under extenuating circumstances, with the approval of the Architect and Owner, will the Contractor be allowed to substitute for the General Superintendent prior to the date of Final Completion.

B. The General Superintendent shall supervise and direct the activities of other superintendents and foremen on site. He shall not perform the work of foremen, tradesmen, or home office staff.

C. Each filed sub-bidder and each subcontractor shall provide a Lead Foreman, responsible to be on site full time during the workday.

D. Each foreman, in addition to his regular duties shall be responsible for establishing, maintaining, and providing record drawings, which are required to be updated prior to submitting the current period’s draft Application for Payment.

E. The General Superintendent and Lead Foreman shall not be discharged or changed without prior written consent of the Architect, which will not be unreasonably withheld. The Architect will require that all as-built information be updated and current prior to granting consent.

1.13 DAILY REPORTS AND WEEKLY OUTLINE SCHEDULE

A. The General Superintendent shall provide a "Daily Report" to the Clerk of Works containing the following:

1. Name and manpower of each Contractor, filed Sub-Contractor and Sub Contractor.
2. Equipment used.
3. Delivery of products received on site.
4. Weather conditions at start and end of each day and any significant changes or events during the day.
5. Significant problems, hazards or accidental injury occurring during each shift.
6. Summary of progress made each day.

B. A photocopy may be made of the same "Daily Report," containing the information above, that is used by the General Superintendent. The General Superintendent may obscure confidential portions of his "Daily Report" if desired. Reports are due the following day.

C. The Superintendent shall provide the Clerk of Works a written "Weekly (look ahead) Outline Schedule" of work activities planned at the beginning of each week, for that week. The "Weekly Outline Schedule" may be a simple listing of each trade's activities delineating areas where work is to be scheduled. Note any significant milestones.

1.14 CERTIFICATE OF SUBSTANTIAL COMPLETION

A. The Architect shall issue a Certificate of Substantial Completion for the work when and if all of the following conditions have been met:
   1. The work is sufficiently complete to allow the Owner beneficial use of the premises. The work remaining to be done is not a danger to the proposed occupants and is of a minor nature.

   2. The work is sufficiently complete that the Architect may make affidavits to the Building Official as required by Controlled Construction provisions of the Building Code.

   3. The mechanical and electrical systems are fully operational. Required inspections and tests have been successfully completed, and the Owner has been provided instructions regarding operation and maintenance of mechanical and electrical systems in the building.

   4. The Contractor has made notifications required to pay cost of final billing for utilities and termination of property insurance.

   5. The Owner has made notifications required to assume the future cost of utilities, and provide property insurance.

   6. The Building Official has issued a Certificate of Occupancy without restrictions or conditions relating to the contractor's work.

1.15 CITY OF WORCESTER ORDINANCES, LICENSES, PERMITS, AND FEES

A. All Contractors shall comply with City Ordinances which may affect the work of this contract and which have not been previously covered in the Contract Documents. Requirements and fees listed are those in effect as of this writing and each Contractor shall be responsible for verifying the requirements and fee cost as currently in effect and throughout the duration of this project. This includes, but is not limited to, the following:

Worcester Police Department:

Police Details
Hourly rate for one-half day or full day.
Permits for Sunday and Holiday work
Fee Required.

Worcester Fire Department

Fire and Smoke Alarm
Automatic Sprinkler and Standpipes
Contact Worcester Fire Department at 508-799-1826.

Department of Inspectional Services

Building Permit
Based on total contract price
$11/$1,000 up to first million dollars.
$8.00 per each $1,000.00 over $1,000,000.
Orders of Building Official under Chapter 1, 780 CMR.
Ticket violation under Chapter 33, 780 CMR.

Trash Control
Ticket for Violations

Environmental Control
Air, Water, Noise Pollution - Ticket for Violations
Conservation Commission Enforcement Officer

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 010450 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawing and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, are hereby made a part of this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for cutting and patching work not specified elsewhere.

B. Refer to other Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1. Requirements of this Section apply to all Sections of the Specifications, including mechanical and electrical installations.

C. Any finished new work required to be cut out due to lack of coordination and scheduling, will be repaired by the trade causing cutting and patching to be done. This work will be done at no additional cost to the Owner.

1.3 SUBMITTALS

A. Cutting and Patching Proposal: Where approval of procedures for cutting and patching is required before proceeding, submit a proposal describing procedures seven (7) days in advance of the time cutting and patching will be performed and request approval to proceed. Include the following information, as applicable, in the proposal:

1. Describe the extent of cutting and patching required. Show how it will be performed and indicate why it cannot be avoided.
2. Describe anticipated results in terms of changes to existing construction; include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.
3. List products to be used and firms or entities that will perform Work.
4. Indicate dates when cutting and patching will be performed.
5. List utilities that will be disturbed or affected, including those that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.
6. Where cutting and patching involves adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with the original structure.
7. Approval by the Architect to proceed with cutting and patching does not waive the Architect's right to later require complete removal and replacement of unsatisfactory work.

1.4 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.

1. Obtain approval of the cutting and patching proposal before cutting and patching the following structural elements:

a. Foundation construction.
b. Bearing walls.
c. Structural concrete.
d. Lintels.
e. Structural decking.
f. Miscellaneous structural metals.
g. Piping, ductwork, and equipment.

B. 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.

1. Obtain approval of the cutting and patching proposal before cutting and patching the following operating elements or safety related systems:

a. Primary operational systems and equipment.
b. Air or smoke barriers.
c. Water, moisture, or vapor barriers.
d. Membranes and flashing.
e. Control systems.
f. Communication systems.

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

1. If possible, retain the original installer or fabricator to cut and patch the following categories of exposed Work, or if it is not possible to engage the original installer or fabricator, engage another recognized experienced and specialized firm:

a. Acoustical ceilings.
b. Carpeting.
c. Vinyl flooring.

1.5 WARRANTY

A. Existing Warranties: Replace, patch, and repair material and surfaces cut or damaged by methods and with material in such a manner so as not to void any existing warranties.

PART 2 - PRODUCTS

2.1 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.

PART 3 - EXECUTION

3.1 INSPECTION

A. 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.

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

B. All cutting and patching by all trades shall be done under direction and coordination of the General Contractor. Accurately lay out all conduit runs, piping, recessed items, etc.

C. Inspect existing conditions of project, including elements subject to damage or to movement, during cutting and patching.

D. After uncovering work, inspect conditions affecting installation of products, or performance of work.

E. Report unsatisfactory or questionable conditions to the Architect in writing; do not proceed with work until Architect has provided further instructions.

F. No holes or slots shall be drilled through any structural member. Inspect holes after finishes have been removed to assure that substrate is not structural. No holes to be blindly drilled through walls, ceilings, etc.

3.2 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.

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

D. Take all precautions necessary to avoid cutting existing pipe, conduit or ductwork serving the building.

E. Provide adequate temporary support as necessary to assure structural value or integrity of affected portion of work.

F. Provide devices and methods to protect other portions of project from damage.

G. Provide protection from elements for that portion of the project, which may be exposed by cutting and patching work.

3.3 PERFORMANCE

A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.

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

B. Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction.

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 as small as possible, 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.
4. Comply with requirements of applicable Sections of Division 2 where cutting and patching requires excavating and backfilling.

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

1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
2. 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.

D. Execute cutting and demolition by methods, which will prevent damage to other work, and will provide proper surfaces to receive installation of repairs.

E. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances and finishes.

F. Restore work, which has been cut or removed to match the original adjacent surfaces exactly in color, material and texture. Include repainting of new work. Install new products to provide completed work in accordance with requirements of Contract Documents.

G. Fit work airtight to pipes, sleeves, ducts, conduit and other penetrations through surfaces. All penetrations through separation walls shall be sealed with fire stopping sealant. All penetrations through foundations and exterior walls shall be sealed watertight and shall include proper flashings, drip loops, weatherproof covers, etc. as necessary.

H. Dust and debris from cutting shall be cleaned up immediately after.

3.4 HOLES

A. The General Contractor and subcontractors shall drill all their own holes if sleeves were missed, improperly placed, or not large enough. Holes made by the General Contractor and subcontractors shall be accurate and neat and not just punched out. No long slots shall be made where piping or conduit may be placed in individual holes. No cutting or patching shall be done which, in the opinion of the Architect, will endanger or impair construction or finish.

B. No cores shall be drilled in concrete walls or slabs in excess of six (6) inches without prior approval from the Structural Engineer. The Structural Engineer must approve any cutting of structural steel.

C. Holes cut in fire-resistive walls and floors shall be neatly made and consistent with listing for firestopping assembly to be used.

3.5 CLEANING

A. Thoroughly and completely clean areas and spaces where cutting and patching is performed or used as access. Remove paint, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finish is applied. Restore damaged pipe covering to its original conditions.

END OF SECTION

SECTION 012000 - PROJECT MEETINGS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, are hereby made a part of this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for project meetings, including, but not limited to, the following:

1. Pre-Construction Conference.
2. Pre-Installation Conference.
3. Bi-Weekly Progress Meetings.
4. Coordination Meetings.
5. Project Closeout Conference.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section 01 29000 “Payment Procedures” for procedures on submitting requisitions.
2. Division 1 Section 01 3100 “Project management and Coordination” for procedures for coordinating project meetings with other construction activities.
3. Division 1 Section 01 3300 “Submittal Procedures” for submitting the Contractor's Construction Schedule.
4. Division 1 Section 01 7700 “Closeout Procedures” for procedures and issues surrounding Project Completion.

1.3 PRE-CONSTRUCTION CONFERENCE

A. Schedule a pre-construction conference before starting construction, immediately after execution of the Agreement. Conference is to be held at the Project Site, or other agreed upon location, at a time convenient to both the Owner and Architect. Conduct the meeting to review responsibilities and personnel assignments. Submit agenda to Architect and Owner three (3) days prior to meeting date.

B. Attendees: Authorized representatives of the Owner, Architect, and their consultants; the Contractor and its superintendent; major subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.

C. Agenda: Discuss items of significance that could affect progress, including the following:

1. Introduction of All Project Members.
2. Distribution of Contract Documents.
3. Procedures Outlined for Contract Compliance Issues.
4. Tentative Construction Schedule; Making Notes of Critical Dates.

5. Critical Work Sequencing.
6. Pre-Installation Conferences.
7. Work Hours.
8. Use of the Premises.
9. Deliveries.
10. Security Procedures.
11. Parking and Site Access Issues.
12. Office, Work, and Storage Areas.
13. Housekeeping & Cleaning of Construction Areas.
14. Safety Procedures.
15. First Aid.
16. Procedures for Creating Monthly Cash Flow/Schedule.
17. Procedures for processing Draft Application for Payment Periodic Submittals Certification Statement.
18. Procedures for processing Applications for Payment.
19. Procedures for RFI's, SI's, RFP's, COP's, CCD's, CO's, etc…
20. Procedures for Keeping Logs on RFI's, SI's, RFP's, COP's, CCD's, CO's, etc…
21. Project Coordination Procedures & Drawings.
22. Project Meetings & Meeting Minutes.
23. Unit Prices.
24. Procedures for Submittals.
25. Quality Control, Inspections, and Testing.
26. Temporary Facilities.
27. Preparation of Project Closeout Documents.

D. The Contractor shall record and promptly distribute minutes of this meeting to all project members (in attendance or not), including the Architect and Owner, and as additionally directed by the Architect.

1. Meeting Minutes shall be in a standard type-written format to remain consistent for every project meeting and include, but not limited to, the following items:

a. Detailed notes from all discussions of project business items in chronological order.
b. Updated Project Contractor, Subcontractor, Vendor List.
c. Updated Construction Schedule.

1.4 PRE-INSTALLATION CONFERENCES

A. Conduct a pre-installation conference at the Project Site before each construction activity that requires coordination with other construction.

B. Attendees: The Installer and representatives of manufacturers and fabricators involved in or affected by the installation, and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise the Architect of scheduled meeting dates.

1. Review the progress of other construction activities and preparations for the particular activity under consideration at each pre-installation conference, including requirements for the following:

a. Contract Documents.

b. Options.
c. Related Change Orders.
d. Purchases.
e. Deliveries.
f. Shop Drawings, Product Data, and quality-control samples.
g. Review of mockups or finish samples.
h. Possible conflicts.
i. Compatibility problems.
j. Time schedules.
k. Weather limitations.
l. Manufacturer's recommendations.
m. Warranty requirements.
n. Compatibility of materials.
o. Acceptability of substrates.
p. Temporary facilities.
q. Existing Occupancies.
r. Space and access limitations.
s. Governing regulations.
t. Safety.
u. Inspecting and testing requirements.
v. Required performance results.
w. Recording requirements.
x. Protection.

2. The Contractor shall record significant discussions and agreements and disagreements of each conference, and the approved schedule. The Contractor shall promptly distribute the record of the meeting to everyone concerned, including the Owner and the Architect.
3. Do not proceed with the installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of Work and reconvene the conference at the earliest feasible date.

1.5 PROGRESS MEETINGS

A. Conduct progress meetings at the Project Site weekly. Notify the Owner and the Architect of scheduled meeting dates. Coordinate dates of meetings with preparation of the payment request. General Contractor to record minutes of all meetings.

B. Attendees: In addition to representatives of the Owner and the Architect, each subcontractor, supplier, or 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 the Project and authorized to conclude matters relating to the Work.

C. Agenda: Review and correct or approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the status of the Project.

1. Contractor's Construction Schedule: Review progress since the last meeting. Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether

schedule revisions are required to insure that current and subsequent activities will be completed within the Contract Time.

2. Review the present and future needs of each entity present, including the following:

   a. Interface Requirements.
   b. Time & Project Progress.
   c. Work Hours.
   d. Updated Weekly Look-Ahead Schedule.
   e. Critical Work Sequencing.
   f. Off-Site Fabrication Problems.
   g. Updated Pre-Installation Conference Schedule.
   h. Deliveries.
   i. Use of the Premises.
   j. Security Procedures.
   k. Parking Issues & Snow Removal.
   l. Office, Work, and Storage Areas.
   m. Housekeeping & Cleaning of Construction Areas.
   n. Safety Procedures.
   o. First Aid.
   p. Draft Application for Payment Periodic Submittals Certification Statement (At Appropriately Timed Meeting Each Month).
   q. Updated Submittal, RFI, SI, RFP, COP, CCD, and CO Logs.
   r. New Submittals, RFI's, SI's, RFP's, COP's, CCD's, CO's, etc…
   s. Any Project Coordination Issues or Drawings.
   t. Quality Control, Inspections, and Testing.
   u. Temporary Facilities.
   v. Preparation of Project Closeout Documents.

3. The Contractor shall record and promptly distribute minutes of this meeting to all project members (in attendance or not), including the Architect and Owner, and as additionally directed by the Architect.

   a. Meeting Minutes shall be in a standard type-written format to remain consistent for every project meeting and include, but not limited to, the following items:

      (i) Detailed notes from all discussions of project business items in chronological order.
      (ii) Updated Project Contractor, Subcontractor, Vendor List.
      (iii) Updated Construction Schedule.
      (iv) Updated Weekly Look-Ahead Schedule.
      (v) Updated Submittal, RFI, SI, RFP, COP, CCD, and CO Logs.

1.6 COORDINATION MEETINGS

A. Conduct coordination meetings with all trades convenient for all parties involved. In addition conduct coordination meetings when requested by the Architect or Clerk of Works.

1.7 TIME OF PROGRESS AND COORDINATION MEETINGS

A. Conduct both meetings weekly on a day agreeable to all parties, at a designated location at the site, or other agreed upon location.

1.8 PROJECT CLOSEOUT CONFERENCE

A. The Project Close-Out Conference shall be conducted at a time convenient for all parties involved prior to Substantial Completion. Refer to Section 01700 – Project Closeout for additional information for requirements.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

Worcester Public Schools
Worcester, MA

January 17, 2024

SECTION 012500- SUBSTITUTION PROCEEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, are hereby made part of this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for handling requests for substitutions made after award of the Contract.

B. References Standards and Definitions: Refer to Section 01 4200 "References" for applicability of industry standards to products specified.

1. Requirements for submitting the Contractor's Construction Schedule and the Submittal Schedule are included under Section 01 3300 “Submittal Procedures”.
2. Procedural requirements governing the Contractor's selection of products and product options are included under Section 01 6000 “Product Requirements”.

1.3 DEFINITIONS

A. Definitions used in this Article do not change or modify the meaning of other terms used in the Contract Documents.

B. Substitutions: Changes in products, materials, equipment, and methods of construction required by the Contract Documents proposed by the Contractor after award of the Contract are considered to be requests for substitutions. The following are not considered to be requests for substitutions:

1. Specified options of products and construction methods included in the Contract Documents.
2. The Contractor's determination of, and compliance with, governing regulations and orders issued by governing authorities.

1.4 SUBMITTALS

A. Substitution Request Submittal: Requests for substitution will be considered if received within two (2) days after commencement of the Work. Requests received more than two (2) days after commencement of the Work may be considered or rejected at the discretion of the Architect.

1. Submit three (3) copies of each request for substitution for consideration. Submit requests in the form and according to procedures required for Change-Order Proposals.
2. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers.
3. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:

a. Product Data, including Drawings and descriptions of products and fabrication and installation procedures.
b. Samples, where applicable or requested.
c. A statement indicating the substitution's effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.
d. Cost information, including a proposal of the net change, if any in the Contract Sum.
e. The Contractor's certification that the proposed substitution conforms to requirements in the Contract Documents in every respect and is appropriate for the applications indicated.

4. Architect's Action: Within five (5) days of receipt of a request for substitution the Architect will request additional information or documentation for evaluation necessary for the evaluation of the request. Within five (5) days of receipt of the request, or of receipt of additional information or documentation, whichever is later, the Architect will notify the Contractor of acceptance or rejection of the substitution. If a decision on use of a proposed substitute cannot be made or obtained within the time allocated, use the product specified by name. Acceptance will be in the form of a Change Order when a change in the Contract Sum or Contract Time is required; or in the form of the Architect's Supplementary Instructions when no change to the Contract Sum or Time is required.

1.5 WORK CONDITIONS / SEQUENCE

A. If sub-contractors find that conditions are not appropriate for them to begin the work of their trade or if they are directed to perform their work out of sequence by the General Contractor or if the General Contractor directs sub-contractors to start and continue regardless of job conditions, the sub-contractor shall so notify the Architect in writing by certified mail immediately.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. The Contractor's submittal and the Architect's acceptance of Shop Drawings, Product Data, or Samples that relate to construction activities not complying with the Contract Documents do not constitute an acceptable or valid request for substitution, nor do they constitute approval.

B. Conditions: The Architect will receive and consider the Contractor's request for substitution when one or more of the following conditions are satisfied, as determined by the Architect. If the following conditions are not satisfied, the Architect will return the requests without action except to record non-compliance with these requirements.

1. Extensive revisions to the Contract Documents are not required.
2. Proposed changes are in keeping with the general intent of the Contract Documents.
3. The request is timely, fully documented, and properly submitted.
4. The request is directly related to an "or-equal" clause or similar language in the Contract Documents.
5. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.

6. The specified product or method of construction cannot be provided in a manner that is compatible with other materials and where the Contractor certifies that the substitution will overcome the incompatibility.
7. The specified product or method of construction cannot be coordinated with other materials and where the Contractor certifies that the proposed substitution can be coordinated.
8. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provides the required warranty.

PART 3 - EXECUTION (Not Used)

END OF SECTION

Worcester Public Schools
Worcester, MA

January 17, 2024

SECTION 012600 – CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, are hereby made a part of this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.

B. Related Sections: The following sections contain requirements that relate to this Section:

1. Division 1 Section 01 2900 “Payment Procedures” for administrative procedures governing applications for payment.
2. Division 1 Section 01 3300 “Submittal Procedures” for requirements for the Contractor’s Construction Schedule.
3. Division 1 Section 01 2500 "Substitution Procedures" for administrative procedures for handling requests for substitutions made after award of the Contract.

1.3 MINOR CHANGES IN THE WORK

A. Supplemental instructions authorizing minor changes in the Work, not involving an adjustment to the Contract Sum or Contract Time, will be issued by the Architect on the City's Form of Supplemental Instructions.

1.4 REQUEST FOR PROPOSAL

A. Owner initiated Request for Proposal: Proposed changes in the Work that will require adjustment to the Contract Sum or Contract Time will be issued by the Architect, with a detailed description of the proposed change and supplemental or revised Drawings and Specifications, if necessary.

1. Proposal requests issued by the Architect are for information only. Do not consider them an instruction either to stop work in progress, or to execute the proposed change.

1.5 PROPOSED CHANGE ORDER

A. Proposed Change Order: Using the form at the end of this section submit your proposal for the adjustment to the Contract Sum or Contract Time in response to a Request for Proposal or for Contractor initiated request for a change with Proposed Change Order.

1. Unless otherwise indicated in the Request For Proposal, within twenty (20) days of receipt of the proposal request, submit to the Architect for the Owner's review an estimate of cost necessary to execute the proposed change.

a. Include a list of quantities of products to be purchased and unit costs, along with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
b. Indicate delivery charges, equipment rental, and amounts of trade discounts.
c. Include a statement indicating the effect the proposed change in the Work will have on the Contract Time.

B. Contractor initiated request for change with Proposed Change Order: When latent or other unforeseen conditions require modifications to the Contract, the Contractor may propose changes by submitting a request for a change to the Architect.

1. Include a statement outlining the reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and Contract Time.
   a. Include a list of quantities of products to be purchased and unit costs along with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
   b. Indicate delivery charges, equipment rental, and amounts of trade discounts.
   c. Comply with requirements in Section 01631 "Product Substitutions" if the proposed change in the Work requires the substitution of one product or system for a product or system specified.

1.6 ALLOWANCES

A. Allowance Adjustment: Base each Change Order Proposal Request for an allowance cost adjustment solely on the difference between the actual purchase amount and the allowance, multiplied by the final measurement of work-in-place, with reasonable allowances, where applicable, for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.

1. Include installation costs in the purchase amount only where indicated as part of the allowance.
2. When requested, prepare explanations and documentation to substantiate the margins claimed.
3. The Owner reserves the right to establish the actual quantity of work-in-place by independent quantity survey, measure, or count.

B. Submit claims for increased costs because of a change in scope described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit, within twenty (20) days of receipt of the Change Order or Construction Change Directive authorizing work to proceed. Claims submitted later than twenty (20) days will be rejected.

1. The Change Order cost amount shall not include the Contractor's indirect expense except when it is clearly demonstrated that either the nature or scope of work required was changed from that which could have been foreseen from information in Contract Documents.
2. No change to the Contractor's indirect expense is permitted for selection of higher or lower priced materials or systems of the same scope and nature as originally indicated.

1.7 CONSTRUCTION CHANGE DIRECTIVE

A. A Construction Change Directive shall be issued for all work involving a change in contract cost or time. The Construction Change Directive instructs the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

1. The Construction Change Directive will contain a complete description of the change in the Work and designate the method to be followed to determine change in the Contract Sum or Contract Time, or is for a lump sum amount approved by the Architect.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive, if so directed by the Architect.

1. After completion of the change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

1.8 CHANGE ORDER PROCEDURES

A. Upon the Owner's approval of a Change Order Proposal Request, the Architect will issue a Change Order for signatures of the Owner and Contractor.

1.9 OVERHEAD AND PROFIT

A. Overhead and Profit will be as noted elsewhere in these specifications.

1. Labor rates shall not exceed those shown in the contract specifications as set forth by the Department of Labor and Industries.

B. In reviewing Change Orders, the Architect will exercise his right to request a complete breakdown from the contractor showing exact costs for labor and material, as well as delivery slips and invoices from suppliers and other subcontractors.

PART 2 - PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 012900 – PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, are hereby made part of this Section.

B. Related Sections: Sections which contain requirements that relate to this Section include, but are not limited to the following:

1. Section 01 3300 – Submittal Procedures

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements governing the Progress Schedule, Schedule of Values, and Contractor's Applications for Payment.

1. Coordinate the Schedule of Values and Applications for Payment with the Contractor's Construction Schedule, List of Subcontracts, and Submittal Schedule.

B. The Contractor's Construction Schedule and Submittal Schedule are included in Section 01 3300 "Submittal Procedures".

1.3 PROGRESS SCHEDULE

A. Prepare the Progress Schedule in accordance with Article 8, Paragraphs 8.2.3 and 8.2.4 of the General Conditions for approval by the Architect.

1. The Progress Schedule shall conform to the requirements in Section 01 3300, paragraph 1.4, Contractor’s Progress Schedule and the sample bound in the aforementioned paragraph.

1.4 SCHEDULE OF VALUES

A. Coordinate preparation of the Schedule of Values with preparation of the Progress Schedule.

1. Correlate line items in the Schedule of Values with other required administrative schedules and forms, including:

a. Contractor's Progress Schedule.
b. Application for Payment forms.
c. List of products.
d. Schedule of allowances, if any.
e. Schedule of alternates, if any.
f. Schedule of unit prices, if any.
g. List of products.
h. List of principal suppliers and fabricators.
i. Schedule of submittals.

2. Submit the Schedule of Values to the Architect at the earliest possible date, but no later than seven (7) days before the date scheduled for submittal of the initial Application for Payment.

B. Format and Content: Use the Project Manual Table of Contents as a guide to establish the format for the Schedule of Values. Provide at least one (1) line item for each Specification Section. Coordinate with the Architect for exact breakdown of major categories of work including, but not limited to major equipment and project closeout submittals.

1. Include the following Project identification on the Schedule of Values:

   a. Project name and location.
   b. Name of the Architect.
   c. Project number.
   d. Contractor's name and address.
   e. Date of submittal.

2. Arrange the Schedule of Values in a tabular form with separate columns to indicate the following for each item listed:

   a. Generic name.
   b. Related Specification Section.
   c. Description of Work.
   d. Name of subcontractor.
   e. Name of manufacturer or fabricator.
   f. Name of supplier.
   g. Change Orders (numbers) that have affected value.
   h. Dollar value to nearest dollar.
   i. Percentage of Contract Sum to the nearest percent, adjusted to total 100 percent.

3. Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Breakdown shall be done by sequence. Coordinate with the Project Manual Table of Contents. Break principal subcontract amounts down into several line items, including but not limited to major equipment and project closeout submittals.

4. Do not round amounts off to the nearest whole dollar; carry all amounts out to the two (2) decimal places and the totals shall equal the Contract Sum.

5. For each part of the Work where an Application for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed, provide separate line items on the Schedule of Values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

6. Margins of Cost: Show line items for indirect costs, and margins on actual costs, only to the extent that such items will be listed individually in Applications for Payment. Each item in the Schedule of Values and Applications for Payment shall be complete, including its total cost and proportionate share of general overhead and profit margin for each item.

   a. Temporary facilities, project closeout submittals, and other major cost items that are not direct cost of actual work-in-place shall be shown as separate line items in the

Schedule of Values or distributed as general overhead expense, at the Contractor's option.

7. Schedule Updating: Update and resubmit the Schedule of Values prior to the next Application for Payment when Change Orders or Construction Change Directives result in a change to the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

A. Draft Application Preparation: Submit three (3) **draft** copies of the (current) Application for Payment at the weekly project meeting for Architect's review seven (7) days in advance of the "Payment Application Time" as indicated in the Agreement.

1. Draft Application for Payment transmittal shall include the a fully executed Draft Cover Sheet or **Periodic Submittal Certification Statement** on Contractor letterhead (bound at the end of this section hereafter) certifying that the following Periodic Submittals are current for the appropriate period:

a. Originals of All Waivers of Mechanics Lien & Corresponding Logs Covering Status of All Waivers
b. Certified payrolls
c. Contract Compliance Submittals
d. Insurance and transfer title certificates for any material stored off site
e. Updated as-built drawings of record reflecting Work for the current Application period

B. Each Application for Payment shall be consistent with previous applications and payments as certified by the Architect and paid for by the Owner.

1. The initial Application for Payment, the Application for Payment at time of Substantial Completion, and the final Application for Payment involve additional requirements.

C. Payment Application Times: Each progress payment date is as indicated in the Agreement. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.

D. Payment Application Cover Sheet Form: Complete the enclosed **Application and Certification for Payment Cover Sheet** on Contractor letterhead (bound at the end of this Section hereafter) and transmit with each Payment Application Form submittal.

E. Payment Application Forms: Use AIA Document G 702 and Continuation Sheets G 703 as the form for Application for Payment. **No exceptions will be made.**

F. Application Preparation: Complete every entry on the form, including notarization and execution by a person authorized to sign legal documents on behalf of the Contractor. The Architect will return incomplete applications without action.

1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions have been made.
2. Include only amounts of approved and fully executed Change Orders. Obtain approval from the Architect prior to inclusion into the Application.

3. Each Application for Payment **must** be accompanied by an updated Progress Schedule. The format to which is subject to the Architect's approval.

G. Payment for materials and/or equipment stored off site shall be considered upon the Owner's approved submission by the Contractor bill(s) of sale or such other documentation or procedures satisfactory to the Owner to establish the Owner's clear and legal title to such materials and/or equipment or otherwise provided to protect the Owner's interest. This shall include applicable insurance and transportation to the project site for those materials and/or equipment suitably stored off site under consideration for payment.

1. Any Contractor making an application for payment pursuant to Section 00200 – General Conditions, paragraph 9.3.2, shall provide the following written documentation to the Architect through the General Contractor as delineated below and as otherwise maybe reasonably requested by the Owner:

a. Bill of Material, Purchase Order or Invoice Number.
b. Product Description Listing.
c. Serial Numbers (If Applicable)
d. Materials and/or Equipment (wares) shall be segregated from all other stock or equipment and clearly labeled and/or marked as City of Worcester Property.
e. Wares shall be available for inspection at all times and in any event within twenty-four (24) hours after receiving prior notice from the Owner/Architect.
f. Provide written directions from the project site to the location of the stored wares.
g. Name of contact person at the storage site and applicable telephone numbers.
h. Method and mode of transportation from off site storage location to the job site.

H. Retainage: In accordance with the Supplemental General Conditions, the Awarding Authority (Owner) shall deduct a retainage not exceeding five (5) percent of the approved amount of the periodic payment. The aforesaid five (5) percent retainage deduction by the Owner is the only retainage authorized hereunder. The contractor shall not deduct any amounts from payments received on behalf of subcontractors, except those deductions specifically authorized by M.G.L. Chapter 30, Section 39(1)(a).

1. Upon the initial and any subsequent Application for Payment; requesting or reflecting a "Release of Retainage" provide a Summary cover sheet indicating the derivation arithmetically, by each line item, of the total released to date and the of the current total retainage sum.

I. Transmittal: Upon receipt of the required periodic submittals enumerated above and upon approval of the "Draft Application", submit six (6) fully executed and notarized original copies with Cover Sheet of the current Application for Payment to the Architect by means ensuring receipt within twenty-four (24) hours. One (1) copy shall be complete, including waivers of lien and similar attachments.

1. Transmit each copy with a transmittal form listing attachments, and recording appropriate information related to the application in a manner acceptable to the Architect.
2. With each requisition, after the first requisition, submit one (1) copy of up-dated as-built drawings for all underground and concealed work, showing locations, depths, or elevations.

J. Waivers of Mechanics Lien: With each Application for Payment, submit waivers of mechanics lien from every entity who may lawfully be entitled to file a mechanics lien arising out of the Contract, and related to the Work covered by the payment.

1. Submit partial waivers on each item for the amount requested, prior to deduction for retainage, on each item.
2. When an application shows completion of an item, submit final or full waivers.
3. The Owner reserves the right to designate which entities involved in the Work must submit waivers.
4. Waiver Delays: Submit each Application for Payment with the Contractor's waiver of mechanics lien for the period of construction covered by the previously paid application.

    a. Submit final Application for Payment with, or preceded by, final waivers from every entity involved with performance of Work covered by the application that could lawfully be entitled to a lien.

5. Waiver Forms: Submit waivers of lien on forms, and executed in a manner, acceptable to Owner.

K. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of the first Application for Payment include the following:

1. List of subcontractors; at all tiers.
2. List of principal suppliers and fabricators.
3. Approved Schedule of Values.
4. Approved Contractor’s Progress Schedule see Section 01300, Paragraph 1.4.
5. Contractor's Construction Schedule (preliminary if not final).
6. Schedule of principal products.
7. Submittal Schedule (preliminary, if not final).
8. List of Contractor's staff assignments.
9. List of Contractor's principal consultants.
10. Copies of building permits.
11. Copies of authorizations, permits and licenses from governing authorities for performance of the Work.
12. Initial progress report.
13. Report of pre-construction meeting.
14. Schedule of Pre-installation meetings.
15. Certificates of insurance and insurance policies.
16. Performance and payment bonds.
17. Data needed to acquire Owner's insurance.
18. Initial settlement survey and damage report, if required.
19. List of Contractor's personnel names and titles assigned on the project and emergency telephone numbers.

L. Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment.

1. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
2. Administrative actions and Submittals that shall precede or coincide with this application include:

a. Occupancy permits and similar approvals.
b. Warranties (guarantees) and maintenance agreements.
c. Test/adjust/balance records.
d. Maintenance instructions.
e. Meter readings.
f. Start-up performance reports.
g. Changeover information related to Owner's occupancy, use, operation and maintenance.
h. Final cleaning.
i. Application for reduction of retainage, and consent of surety
j. Advice on shifting insurance coverage.
k. Final progress photographs.
l. List of incomplete work, recognized as exceptions to Architect's Certificate of Substantial Completion.

M. Final Payment Application: Administrative actions and submittals that must precede or coincide with submittal of the final payment Application for Payment include the following:

1. Completion of Project closeout requirements.
2. Completion of items specified for completion after Substantial Completion
3. Assurance that unsettled claims will be settled.
4. Assurance that incomplete Work and Work not accepted will be completed without undue delay.
5. Transmittal of required Project construction records to the Owner.
6. Certified property survey.
7. Proof that taxes, fees and similar obligations have been paid.
8. Removal of temporary facilities and services.
9. Removal of surplus materials, rubbish and similar elements.
10. Change of door locks to Owner's access.
11. Order of Conditions Certificate of Compliance, if applicable.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

CONTRACTOR LETTER HEAD

APPLICATION AND CERTIFICATION FOR PAYMENT COVER SHEET

PROJECT:_____ APPLICATION NO: _____

For
Period
Ending: _____ AMOUNT CERTIFIED: $_____

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief, the Work covered by this Application for Payment has been completed in accordance with the Contract Documents; and the current Payment shown herein is now due.

The Contractor further certifies that the entire amount of all previous Payments received for labor performed and materials furnished have been promptly paid to all Subcontractors whose work was certified for payment on previous applications, less, where applicable, only an amount specified in any court proceeding barring such payment and/or an amount claimed due from the Subcontractor by the Contractor as expressly authorized by M.G. L. Chapter 30, Section 39F (1) (a). No other amounts have been deducted or retained from such payments by the contractor.

Contractor: _____ **STATE OF:** _____

Signed by: _____ **COUNTY OF:** _____

Date: _____ Subscribed and sworn to before me on this
_____ Day of _____ 20__.

Notary public: _____
My Commission Expires: _____

APPROVED FOR PAYMENT:

Signed:_____ Signed:_____
By: James Bedard, Facilities Director By: Robert Sherman., Architect

Date:_____ Date:_____

Signed:_____ Signed:_____
By: By:

Date:_____ Date:_____

Worcester Public Schools
Worcester, MA

January 17, 2024

CONTRACTOR LETTER HEAD

DRAFT APPLICATION FOR PAYMENT
PERIODIC SUBMITTAL CERTIFICATION STATEMENT

Project Name: Draft Application Date: _____

Draft Application No._____ (Requisition No.)

For Period:
Starting _____
Through Period
Ending _____

_____(Name of Contractor) _____ ,
certifies that the "Draft Application for Payment" as herein submitted with all of the following Periodic Submittals fully and completely executed and current for the appropriate time period(s) as required.
FURNISH THE FOLLOWING PERIODIC SUBMITTALS AND PROVIDE ALL REQUIRED INFORMATION FOR THE APPROPRIATE TIME PERIOD(S) AS REQUESTED. PLEASE SUBMIT ON **SEPARATE** SHEETS:

I. **Original Waivers of Mechanic Lien:** List every entity who may be lawfully entitled to file a lien resulting out of this Contract, including but not limited to; contractors/subcontractors, at all tiers, vendors, and suppliers. Submit current originals of all Waivers covering all WORK completed through the period ending thirty (30) days prior to this periods "Application" date and as further required in I above.

II. **Certified Payrolls:** All payroll reports have been submitted as required by the Contract Compliance Office.

III. **Contract Compliance Reports:** All contract compliance reports have been submitted as required by the Contract Compliance Office.

IV. **Insurance & Title Transfer Certificates** for material stored off site, if applicable.

V. **Updated As-Built Drawings:** Record drawings have been submitted reflecting the work completed up to the time of Application.

This Draft Application for Payment Certification Statement and corresponding Periodic Submittals (attached) shall be reviewed by the Awarding Authority for completeness. Any deficiency, discrepancies or missing items shall cause this Draft Application for Payment to be returned to the Contractor with no action taken.
I, _____ hereby certify, that the Periodic
(Name of contractor)

Submittals indicated herein have been reviewed by the undersigned and are complete and current as required under provisions of this Contract.

_____
_____
(Name of Authorized Person) (Date)

_____
(Title)

END OF SECTION

Worcester Public Schools
Worcester, MA

January 17, 2024

SECTION 013100 – PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, are hereby made a part of this Section.

1.2 SUMMARY

A. This Section specifies administrative and supervisory requirements necessary for project coordination including, but not limited to the following:

1. Coordination and cutting, drilling and patching.
2. General installation provisions.
3. Administrative and supervisory personnel.
4. Cleaning and protection.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Project meetings, coordination meetings, and pre-installation conferences are included in Section “Project Meetings.”
2. Requirements for preparing and submitting the Contractor's Construction Schedule are included in Section “Submittals.”

1.3 COORDINATION

A. Coordinate construction operations included in various Sections of these Specifications to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections of the specifications that depend on each other for proper installation, connection, and operation.

1. Where installation of one part of the Work depends on installation of other components, either before or after its own installation, schedule construction operations in the sequence required to obtain the best results.
2. Where availability of space is limited coordinate installation of different components to assure maximum accessibility for required maintenance, service, and repair.
3. Make provisions to accommodate items scheduled for later installation.
4. The General Contractor shall as part of his work provide for all cutting, patching and drilling, not specified to be the work of others.

B. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.

1. Prepare similar memoranda for the Owner and separate contractors where coordination of their work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and assure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of schedules.
2. Installation and removal of temporary facilities.
3. Delivery and processing of submittals.
4. Progress meetings.
5. Project closeout activities.

D. Conservation: Coordinate construction operations to assure that operations are carried out with consideration given to conservation of energy, water, and materials.

1.4 SUBMITTALS

A. Coordination Drawings: Prepare coordination Drawings where careful coordination is needed for installation of products and materials fabricated by separate entities. Prepare coordination drawings where limited space availability necessitates maximum utilization of space for efficient installation of different components.

1. Show the relationship of components shown on separate Shop Drawings.
2. Indicate required installation sequences.
3. Comply with requirements contained in Section 01300 – Submittals.
4. Format to be as directed by the Architect.

B. Staff Names: Within fifteen (15) days of commencement of construction operations, submit a list of the Contractor's principal staff assignments, including the superintendent and other personnel in attendance at the Project Site. Identify individuals and their duties and responsibilities. List their addresses and telephone numbers. Provide twenty-four (24) hour Emergency telephone numbers listed separately.

1. Post copies of the list in the Project meeting room, the temporary field office, and each temporary telephone.
2. The Contractor shall provide a copy of the list, and updates as its changes, to the Worcester Police Department and other City Departments as directed by the Architect.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 GENERAL INSTALLATION PROVISIONS

A. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

B. Manufacturer’s Instructions: Comply with manufacturer’s written instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent the requirements contained in Contract Documents.

C. Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items.

D. Provide attachment and connection devices and methods necessary for securing Work. Secure Work true to line and level. Allow for expansion and building movement.

E. Visual Effects: Provide uniform joint widths in exposed Work. Arrange joints in exposed Work to obtain the best visual effect. Refer questionable choices to the Architect for final decision.

F. Re-check measurements and dimensions, before starting each installation.

G. Install each component during weather conditions that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.

H. Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.

I. Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decision to the Architect for final decision.

3.2 CLEANING AND PROTECTION

A. During handling and installation clean and protect construction in progress and adjoining materials in place. Apply protective covering where required and as necessary to assure protection from damage or deterioration.

B. Clean and maintain all completed construction as frequently as necessary through the remainder of the construction period.

C. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in-progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period. Where applicable, such exposures include, but are not limited to, the following:

1. Excessive vibration.
2. Excessive static or dynamic loading.
3. Excessive internal or external pressures.
4. Excessively high or low temperatures.
5. Thermal shock.
6. Excessively high or low humidity.
7. Air contamination or pollution.
8. Air borne debris/dust or construction particulates.
9. Water or ice.
10. Solvents.
11. Chemicals.
12. Light.
13. Puncture.
14. Abrasion.
15. Heavy traffic.
16. Soiling, staining, and corrosion.

17. Bacteria.
18. Rodent and insect infestation.
19. Combustion.
20. Electrical current.
21. High-speed operation.
22. Improper lubrication.
23. Unusual wear or other misuse.
24. Contact between incompatible materials.
25. Destructive testing.
26. Misalignment.
27. Excessive weathering.
28. Unprotected storage.
29. Improper shipping or handling.
30. Theft.
31. Vandalism.

END OF SECTION 013100

Worcester Public Schools
Worcester, MA

January 17, 2024

SECTION 013300 – SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, are hereby made part of this Section.

1. The submittals enumerated below shall require review and/or approval by the Architect.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for submittals required for performance of the Work, including:

1. Contractor's Progress Schedule.
2. Major delivery schedule.
3. Existing utility tie-in's schedule.
4. Submittal schedule.
5. Pre-Installation Conference Schedule (By Specification Section).
6. Daily construction reports.
7. Shop drawings.
8. Product data.
9. Samples.
10. Coordination Drawings.
11. Quality assurance submittals.
12. Submittal of three (3) sets of plans and specifications, complete with all addendums posted, to the City of Worcester Building Department to obtain building permit.

B. Administrative Submittals: Refer to other Division 1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to, the following:

1. Product Substitution.
2. Periodic Submittals.
3. Permits.
4. Applications for Payment.
5. Performance and payment bonds.
6. Insurance Certificates.
7. List of Project Contractors, Subcontractors, Vendors, etc.
8. List of Personnel and Emergency Telephone Numbers.
9. City Ordinance Program Forms.

C. The Schedule of Values submittal is included in Section 01 2900 "Payment Procedures".

D. "Closeout Procedures", Section 01 7700, specifies requirements for submittal of Project Record Documents and warranties at project closeout.

1.3 SUBMITTAL PROCEDURES/SHOP DRAWINGS

A. Submittal procedures shall be electronic for all submittals for approval and distribution unless otherwise noted. Provide to the owner one copy of all approved submittals in an organized manner with a submittal log. All color samples must be distributed as hard copies, and also electronically filed in order to track. Electronic files shall be clean, clear and readable. Plan files to be PDF and/or AutoCAD and be to scale as appropriate. Contractor to transmit and update each submittal and process electronically, maintain a log that is distributed and updated weekly. All e-mails to clearly identify the submittal number and shall include the log, Or the contactor to maintain a web-based system used for submittals, and the construction process.

B. Distribution: Distribution of submittals shall be distributed as follows unless otherwise noted:

1. Architect.
2. Clerk of Works.
3. Owner – electronic and paper copy.
4. A minimum of Three (3) copies for the Contractor as necessary for distribution to subcontractors, suppliers, installers, manufacturers, fabricators, and any other applicable parties.

C. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.

D. Processing: All Contractors are directed to the timeliness and critical importance of expediting the submittal process. Any lead times, which may impact sequencing, should be prioritized to meet the project schedule. Architect must be notified if any delays arise that will impact lead times.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that requires sequential activity.
2. The Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.
3. To avoid the need to delay installation as a result of the time required to process submittals and to allow sufficient time for submittal review, all contractors' submittals shall be submitted for processing and have received final Architect's approval within 45 days from the date of Contract.

    a. Allow ample time for initial review to achieve efficient construction sequencing. Allow additional time if the Architect must delay processing to permit coordination with subsequent submittals.
    b. If an intermediate submittal is necessary, process the same as the initial submittal.
    c. Allow ample time for reprocessing each submittal to achieve efficient construction sequencing.
    d. No extension of Contract Time will be authorized because of the contractor's failure to transmit submittals to the Architect for processing sufficiently in advance of the scheduled Work.

E. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.

1. Provide a space approximately 4 by 5 inches on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.
2. Include the following information on the label for processing and recording action taken.

a. Project name.
b. Date.
c. Name and address of the Architect.
d. Name and address of the Contractor.
e. Name and address of the subcontractor.
f. Name and address of the supplier.
g. Name of the manufacturer.
h. Number and title of appropriate Specification Section.
i. Drawing number and detail references, as appropriate.

F. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the Architect using a transmittal form. The Architect will not accept submittals received from sources other than the Contractor.

G. On the transmittal, record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including variations and limitations. Include Contractor's certification that information complies with Contract Document requirements.

1.4 CONTRACTOR'S PROGRESS SCHEDULE

A. Bar (Gantt) Chart Schedule: Meeting the requirements of Section 00200 Paragraphs 4.10, 4.10.1, 8.2.3 through 8.2.9. Prepare a fully developed, horizontal bar type of chart titled: “Progress Schedule”. A sample is attached at the end of this section, some requirements specified here are not shown in the sample.

B. Time, the horizontal (x) axis in this schedule shall show the start of on site work through the Date of Substantial Completion, show the time for completion of punch list items, and show the time for general warranty and completion of commissioning.

C. Provide a separate time bar for each line in the approved “Schedule of Values” with the incremental value of work in place for each month. Work Completed (in place) must be 99% of contract value to achieve Substantial Completion. Provide a continuous vertical line to identify the first working day of each month.

D. At the bottom of the progress schedule provide:
1. a first line showing the total value of the work planned to be completed (in place) for each month,
2. a second line showing the cumulative total value of the work planned to be completed (in place) to date,
3. a third line showing the actual total value of the work certified as completed (in place) on the Application and Certificate for Payment for the month, and

4. a fourth line showing the actual total cumulative value of the work certified as completed (in place) on the Application and Certificate for payment to date.
5. Refer to Division 1 Section 01027 "Applications for Payment" for cost reporting and payment procedures.

E. Distribution: Following approval of the initial submittal, print and distribute copies to the Architect, Owner, subcontractors, and other parties required to provide actual work in place and conform to schedule.

F. Revisions: Revisions to values and or time shown in the Progress Schedule may only be made to reflect a Change Order and in accordance with Section 00200 Paragraph 8.2.7. When revisions are made, distribute to the same parties and post at the job-site. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.

G. Progress Schedule Updating: Revise the schedule after each meeting, where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.

Progress Schedule (as required by Article 8, Paragraphs 8.2.3 & 8.2.4 of the General Conditions)

(Project Name)	(Architect)	(Date)	(Approved by Architect)
(City of Worcester Dept. or Facility)	(Construction Manager)	(Revision Date)	
(Project Address)	(Contractor)	(Revised Through)	

Section Number	Section or Filed Sub-bid Section	Mar-98	Apr-98	May-98	Jun-98	Jul-98	Oct-98	Nov-98	Dec-98	
		1	2	3	4	5	6	7	8	Totals
01000	General Requirements	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$32,000
02000	Sitework	$10,000	$10,000						$10,000	$30,000
03000	Concrete		$4,000	$12,000			$8,000			$24,000
04000	Masonry			$8,000	$10,000	$12,000				$30,000
05000	Metals			$20,000						$20,000
05500	Metal Fabrications							$7,000		$7,000
06000	Wood & Plastics								$4,000	$4,000
07100	Waterproofing & Caulking				$3,000					$3,000
07600	Roofing & Flashing					$12,000				$12,000
08000	Doors & Windows						$4,000			$4,000
08520	Alum. Windows							$8,000		$8,000
08800	Glass & Glazing								$1,000	$1,000
09250	Gypsum Drywall						$6,000	$5,000		$11,000
09310	Ceramic Tile							$2,000		$2,000
09511	Accoustical Ceilings							$1,000	$1,000	$2,000
09650	Resilient Flooring								$3,000	$3,000
09900	Painting								$2,000	$2,000
10000	Specialties								$14,000	$14,000
14204	Hydraulic Elevators						$8,000	$8,000	$8,000	$24,000
15400	Plumbing			$1,000	$2,000			$3,000	$5,000	$11,000
15600	HVAC					$4,000	$5,000		$4,000	$13,000
16000	Electrical			$1,000	$3,000			$4,000	$4,000	$12,000
	Total Planned to be Completed This Month	$14,000	$18,000	$46,000	$22,000	$32,000	$35,000	$42,000	$60,000	
	Total planned to be Completed To Date	$14,000	$32,000	$78,000	$100,000	$132,000	$167,000	$209,000	$269,000	$269,000
	Actual Total Completed This Month	$11,000	$22,000	$38,000						
	Actual Total Completed To Date	$11,000	$33,000	$71,000	$71,000	$71,000	$71,000	$71,000	$71,000	$470,000

1.5 SUBMITTAL SCHEDULE

A. After development and acceptance of the Contractor's Progress Schedule, prepare a complete Submittal Schedule and promptly submit the schedule to the Architect.

B. Distribution: Following response to the initial submittal, print and distribute copies to the Architect, Owner, subcontractors, and other parties required to comply with submittal dates.

C. Submittal Schedule Updating: Revise the Submittal Schedule after each meeting or activity where revisions have been recognized or made. Issue the updated project schedule concurrently with each Application for Payment.

1.6 DAILY CONSTRUCTION REPORTS

A. Prepare a daily construction report recording the following information concerning events at the site, and submit copies to the Architect and Clerk of Works at weekly intervals:

1. List of subcontractors at the site.
2. Count of personnel at the site.
3. Accidents and unusual events.
4. Meetings and significant decisions.
5. Stoppages, delays, shortages, and losses.
6. Emergency procedures.
7. Services connected, disconnected.
8. Equipment or system tests and startups.
9. General daily work tasks and progress.

1.7 SHOP DRAWINGS

A. The Contractor's submittal and the Architect's acceptance of Shop Drawings, Product Data, or Samples that relate to construction activities not complying with the Contract Documents do not constitute an acceptable or valid request for substitution, nor do they constitute approval.

B. Submit newly prepared information drawn accurately to scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not a Shop Drawing.

C. Shop Drawings include fabrication and installation Drawings, setting diagrams, schedules, patterns, templates and similar Drawings. Include the following information:

1. Dimensions.
2. Identification of products and materials included by sheet and detail number.
3. Compliance with specified standards.
4. Notation of coordination requirements.
5. Notation of dimensions established by field measurement.

1.8 PRODUCT DATA

A. The Contractor's submittal and the Architect's acceptance of Shop Drawings, Product Data, or Samples that relate to construction activities not complying with the Contract Documents do not constitute an acceptable or valid request for substitution, nor do they constitute approval.

B. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, and performance curves.

1. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as “Shop Drawings”.
2. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products that are not required, mark copies to indicate the applicable information. Include the following information:

    a. Manufacturer's printed recommendations.
    b. Compliance with trade association standards.
    c. Compliance with recognized testing agency standards.
    d. Application of testing agency labels and seals.
    e. Notation of dimensions verified by field measurement.
    f. Notation of coordination requirements.

C. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.

D. Unless non-compliance with Contract Document provisions is observed, the submittal may serve as the final submittal.

E. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.

1. Do not proceed with installation until a copy of Product Data is in the Installer's possession.
2. Do not permit use of unmarked copies of Product Data in connection with construction.

1.9 SAMPLES

A. The Contractor's submittal and the Architect's acceptance of Shop Drawings, Product Data, or Samples that relate to construction activities not complying with the Contract Documents do not constitute an acceptable or valid request for substitution, nor do they constitute approval.

B. Mount or display samples in the manner to facilitate review of qualities indicated. Prepare samples to match the Architect's sample. Include the following:

1. Specification Section number and reference.
2. Generic description of the sample.
3. Sample source.
4. Product name or name of the manufacturer.
5. Compliance with recognized standards.
6. Availability and delivery time.

C. Submit samples for review of size, kind, color, pattern, and texture. Submit samples for a final check of these characteristics with other elements and a comparison of these characteristics between the final submittal and the actual component as delivered and installed.

D. Preliminary Submittals: Submit a full set of choices where samples are submitted for selection of color, pattern, texture, or similar characteristics from a range of standard choices.

1. Preliminary submittals will be reviewed and returned with the Architect's mark, indicating selection and other action.

E. Submittals: Except for Samples illustrating assembly details, workmanship, fabrication techniques, connections, operation, and similar characteristics, submit three (3) sets. One (1) set will be returned marked with the action taken.

1. Maintain sets of samples, as returned, at the Project Site, for quality comparisons throughout the course of construction.

F. Unless non-compliance with Contract Document provisions is observed, the submittal may serve as the final submittal.

1. Sample sets may be used to obtain final acceptance of the construction associated with each set.

1.10 QUALITY ASSURANCE SUBMITTALS

A. Submit quality-control submittals, including design data, certifications, manufacturer's instructions, manufacturer's field reports, and other quality-control submittals as required under other Sections of the Specifications.

B. Certifications: Where other Sections of the Specifications require certification that a product, material, or installation complies with specified requirements; submit a notarized certification from the manufacturer certifying compliance with specified requirements.

1. Signature: Certification shall be signed by an officer of the manufacturer or other individual authorized to sign documents on behalf of the company.

1.11 ARCHITECT'S ACTION

A. Except for submittals of record or information, where action and return is required or requested, the Architect will review each submittal, mark to indicate action taken, and return as noted in Paragraph 1.3A.

B. Compliance with specified characteristics is the Contractor's responsibility.

C. Action Stamp: The Architect will stamp each submittal with a uniform, self-explanatory action stamp. The Architect will mark the stamp appropriately to indicate the action taken:

D. Final Unrestricted Release: When submittals are marked "Approved", the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend on that compliance.

1. Final-But-Restricted Release: When submittals are marked "Approved as Noted", that Work covered by the submittal may proceed provided it complies with markings or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.

2. Returned for Resubmittal: When submittal is marked “Approved as Noted - Revise and Resubmit” or “Not Approved, Revise and Resubmit", do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal according to the markings and resubmit without delay. Repeat if necessary to obtain different action mark.

E. The Contractor shall not use, or permit to be used submittals marked “Approved as Noted - Revise and Resubmit” or "Not Approved, Revise and Resubmit" at the Project Site or elsewhere where Work is in progress.

F. Other Action: Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned marked "Action Not Required".

1.12 DRAWINGS TO BUILDING DEPARTMENT

A. Contractor shall submit three (3) sets of fully addenderized plans and specification to the City of Worcester Building Department upon application for the building permit.

1. Submit drawings to architect prior to permit application for "wet stamping" of architect and engineers professional seal to the drawings. Allow up to three (3) days for this process.

2. Any reduction in addenda plan must be legible.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013000

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, are hereby made a part of this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for Quality-Control Services.

B. Quality-Control Services include inspections, tests, and related actions, including reports performed by Contractor, by independent agencies, and by governing authorities. They do not include contract enforcement activities performed by Architect.

C. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with Contract Document requirements.

D. Requirements of this Section relate to customized fabrication and installation procedures, not production of standard products.

1. Specific quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
2. Specified inspections, tests, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with Contract Document requirements.
3. Requirements for Contractor to provide quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.3 RESPONSIBILITIES

A. Contractor Responsibilities: The Contractor shall provide inspections, tests, and other similar Quality-Control Services specified in individual Specification Sections and as required by governing authorities. Costs for these services are included in the Contract Sum.

1. The Contractor shall employ and pay a qualified independent testing agency to perform specified Quality-Control Services.
2. Where the Owner has engaged an independent testing agency for testing and inspecting part of the Work, and the Contractor is also required to engage a testing entity for the same or related part or element of the Work, the Contractor shall not employ the entity engaged by the Owner, unless agreed to in writing by the Owner.
3. Re-testing: The Contractor is responsible for retesting where results of inspections, tests, or other quality-control services prove unsatisfactory and indicate noncompliance with Contract Document requirements, regardless of whether the original test was Contractor's responsibility.

a. The cost of re-testing construction, revised or replaced by the Contractor, is the Contractor's responsibility where required tests performed on original construction.

4. Associated Services: The Contractor shall cooperate with agencies performing required inspections, tests, and similar services, and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include, but are not limited to, the following:

a. Provide access to the Work and furnish incidental labor, facilities and equipment necessary to facilitate inspections and tests.
b. Take adequate quantities of representative samples of materials that require testing or assist the agency in taking samples.
c. Provide facilities for storage and curing of test samples.
d. Provide security and protection of samples and test equipment at the Project Site.

B. Owner Responsibilities: The Owner will engage and pay for the services of an independent testing agency to perform inspections, tests or other Quality-Control Services specified to be performed by independent testing agencies and not specified as the responsibility of the Contractor and/or are provided for by another identified entity. Costs for these services are not included in the Contract Sum.

1. The Owner shall employ and pay for the services of a qualified independent testing agency, testing laboratory or other qualified entity to perform Quality-Control Services, which are the Owner’s responsibility.

C. Duties of the Testing Agency: The independent agency engaged to perform inspections, sampling, and testing of materials and construction specified in individual Sections shall cooperate with the Architect and the Contractor in performance of the agency's duties. The testing agency shall provide qualified personnel to perform required inspections and tests.

1. The agency shall notify the Architect and the Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. The agency is not authorized to release, revoke, alter, or enlarge requirements of the Contract Documents or approve or accept any portion of the Work.
3. The agency shall not perform any duties of the Contractor.

D. Coordination: Coordinate the sequence of activities to accommodate required services with a minimum of delay. Coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests.

1. The Contractor is responsible for scheduling times for inspections, tests, taking samples, and similar activities.

1.4 SUBMITTALS

A. Unless the Contractor is responsible for this service, the independent testing agency shall submit a certified written report, in duplicate, of each inspection, test, or similar service to the Architect. If the Contractor is responsible for the service, submit a certified written report, in duplicate, of each inspection, test, or similar service through the Contractor.

1. Submit additional copies of each written report directly to the governing authority, when the authority so directs.
2. Report Data: Written reports of each inspection, test, or similar service include, but are not limited to, the following:

    a. Date of issue.
    b. Project title and number.
    c. Name, address, and telephone number of testing agency.
    d. Dates and locations of samples and tests or inspections.
    e. Names of individuals making the inspection or test.
    f. Designation of the Work and test method.
    g. Identification of product and Specification Section.
    h. Complete inspection or test data.
    i. Test results and an interpretation of test results.
    j. Ambient conditions at the time of sample taking and testing.
    k. Comments or professional opinion on whether inspected or tested Work complies with Contract Document requirements.
    l. Name and signature of laboratory inspector.
    m. Recommendations on retesting.

1.5 QUALITY ASSURANCE

A. Qualifications for Service Agencies: Engage inspection and testing service agencies, including independent testing laboratories, that are prequalified as complying with the American Council of Independent Laboratories' "Recommended Requirements for Independent Laboratory Qualification" and that specialize in the types of inspections and tests to be performed.

    1. Each independent inspection and testing agency engaged on the Project shall be authorized by authorities having jurisdiction to operate in the State of Massachusetts.

1.6 WORK CONDITIONS / SEQUENCE

A. If sub-contractors find that conditions are not appropriate for them to begin the work of their trade or if they are directed to perform their work out of sequence by the General Contractor or if the General Contractor directs sub-contractors to start and continue regardless of job conditions, the sub-contractor shall so notify the Architect in writing by certified mail immediately.

PART 2 – PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

A. General: Upon completion of inspection, testing, sample taking and similar services, repair damaged construction and restore substrates and finishes.

B. Protect construction exposed by or for quality-control service activities, and protect repaired construction.

C. Repair and protection is Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing, or similar services.

END OF SECTION

SECTION 014200 - REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, are hereby made part of this Section.

1.2 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. Indicated: The term indicated refers to graphic representations, notes, or schedules on the Drawings, or other Paragraphs or Schedules in the Specifications, and similar requirements in the Contract Documents. Terms such as shown, noted, scheduled, and specified are used to help the reader locate the reference. There is no limitation on location.

C. Directed: Terms such as directed, requested, authorized, selected, approved, required, and permitted mean directed by the Architect, requested by the Architect, and similar phrases.

D. Approved: The term approved, when used in conjunction with the Architect's action on the Contractor's submittals, applications, and requests, is limited to the Architect's duties and responsibilities as stated in the Conditions of the Contract.

E. Regulations: The term regulations includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

F. Furnish: The term furnish means supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation, and similar operations to the location within the project where the product will finally be installed.

G. Install: The term install describes operations at the Project site including the actual unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

H. Provide: The term provide means to furnish and install, complete and ready for the intended use.

I. Installer: An Installer is the Contractor or another entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, and similar operations. Installers are required to be experienced in the operations they are engaged to perform.

1. The term experienced, when used with the term Installer, means having a minimum of five (5) previous projects similar in size and scope to this Project, being familiar with the special requirements indicated, and having complied with requirements of the authority having jurisdiction.
2. Trades: Using terms such as carpentry is not intended to imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding

generic name, such as carpenter. It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.

3. Assigning Specialists: Certain Sections of the Specifications require that specific construction activities shall be performed by specialists who are recognized experts in those operations. The specialists must be engaged for those activities, and their assignments are requirements over which the Contractor has no choice or option. However, the ultimate responsibility for fulfilling Contract requirements remains with the Contractor.

    a. This requirement shall not be interpreted to conflict with enforcing building codes and similar regulations governing the Work. It is also not intended to interfere with local trade union jurisdictional settlements and similar conventions.

J. Project site is the space available to the Contractor for performing construction activities either exclusively or in conjunction with others performing other work as part of the Project. The extent of the Project site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is located.

K. Testing Agencies: A testing agency is an independent entity engaged to perform specific inspections or tests, either at the Project site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

1.3 SPECIFICATION FORMAT AND CONTENT EXPLANATION

A. Specification Format: These Specifications are organized into Divisions and Sections based on the Construction Specifications Institute's 16 Division format and MASTERFORMAT numbering system.

B. Specification Content: This Specification uses certain conventions regarding the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:

1. Abbreviated Language: Language used in Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words that are implied, but not stated, shall be interpolated, as the sense requires. Singular words will be interpreted as plural and plural words interpreted as singular where applicable as the context of the Contract Documents indicates.
2. Imperative and streamlined language is used generally in the Specifications. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the Text, subjective language is used for clarity to describe responsibilities that must be fulfilled indirectly by the Contractor, or by others when so noted.

    a. The words "shall be" are implied wherever a colon (:) is used within a sentence or phrase.

1.4 INDUSTRY STANDARDS

A. Applicability of Standards: Except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if

bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with the standards in effect as of the date of the Contract Documents.

C. Conflicting Requirements: Where compliance with two (2) or more standards is specified and where the standards may establish different or conflicting requirements for minimum quantities or quality levels, refer requirements that are different but apparently equal and other uncertainties to the Architect for a decision before proceeding.

1. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of the requirements. Refer uncertainties to the Architect for a decision before proceeding.

D. Copies of Standards: Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, the Contractor shall obtain copies directly from the publication source.

E. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards generating organization, authority having jurisdiction, or other entity applicable to the context of the Text provision. Refer to the "Encyclopedia of Associations", published by Gale Research Co., available in most libraries.

F. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. The following acronyms or abbreviations, as referenced in Contract Documents, are defined to mean the associated names. Names and addresses are subject to change and are believed, but not ensured, to be accurate and up to date as of the date of Contract Documents.

AA	**Aluminum Association** **900 19th St., NW, Suite 300** **Washington, DC 20006**	**(202) 862-5100**
AABC	**Associated Air Balance Council** **1518 K St., NW** **Washington, DC 20005**	**(202) 737-0202**
AAMA	**American Architectural Manufacturers Association** **1540 E. Dundee Road, Suite 310** **Palatine, IL 60067**	**(708) 202-1350**

AASHTO	**American Association of State Highway and Transportation Officials 444 North Capitol St., Suite 225 Washington, DC 20001**	**(202) 624-5800**
AATCC	**American Association of Textile Chemists and Colorists P.O. Box 12215 Research Triangle Park, NC**	**(919) 549-8141**
ACI	**American Concrete Institute P.O. Box 19150 Detroit, MI 48219**	**(313) 532-2600**
ACIL	**American Council of Independent Laboratories 1629 K St., NW Washington, DC 20006**	**(202) 887-5872**
ACPA	**American Concrete Pipe Association 8300 Boone Blvd., Suite 400 Vienna, VA 22182**	**(703) 821-1990**
ADC	**Air Diffusion Council One Illinois Center, Suite 200 111 East Wacker Drive Chicago, IL 60601-4298**	**(312) 616-0800**
AFBMA	**Anti-Friction Bearing Manufacturers Association 1101 Connecticut Ave., NW, Suite 700 Washington, DC 20036**	**(202) 429-5155**
AGA	**American Gas Association 1515 Wilson Blvd. Arlington, VA 22209**	**(703) 841-8400**
AHA	**American Hardboard Association 520 North Hicks Road Palatine, IL 60067**	**(708) 934-8800**
AHAM	**Association of Home Appliance Manufacturers 20 North Wacker Drive Chicago, IL 60606**	**(312) 984-5800**
AI	**Asphalt Institute Research Park Drive P.O. Box 14052 Lexington, KY 40512-4052**	**(606) 288-4960**
AIA	**American Institute of Architects 1735 New York Ave., NW Washington, DC 20006**	**(202) 626-7300**

A.I.A.	**American Insurance Association** **1130 Connecticut Ave., NW, Suite 1000** **Washington, DC 20036**	**(202) 828-7100**
AIHA	**American Industrial Hygiene Association** **P.O. Box 8390** **345 White Pond Drive** **Akron, OH 44320**	**(216) 873-2442**
AISC	**American Institute of Steel Construction** **One East Wacker Drive, Suite 3100** **Chicago, IL 60601-2001**	**(312) 670-2400**
AITC	**American Institute of Timber Construction** **11818 SE Mill Plain Blvd., Suite 415** **Vancouver, WA 98684**	**(206) 254-9132**
ALI	**Associated Laboratories, Inc.** **500 South Vermont Street** **Palatine, IL 60067**	**(708) 358-7400**
ALSC	**American Lumber Standards Committee** **P.O. Box 210** **Germantown, MD 20875**	**(301) 972-1700**
AMCA	**Air Movement and Control Association** **30 W. University Drive** **Arlington Heights, IL 60004-1893**	**(708) 394-0150**
ANSI	**American National Standards Institute** **11 West 42nd Street, 13th Floor** **New York, NY 10036**	**(212) 642-4900**
AOAC	**Association of Official Analytical Chemists** **2200 Wilson Blvd., Suite 400** **Arlington, VA 22201-3301**	**(703) 522-3032**
AOSA	**Association of Official Seed Analysts** **c/o Larry J. Prentice** **268 Plant Science 1ANR-UNL, Box 19281** **Lincoln, NE 68583-0911**	**(402) 472-8649**
APA	**American Plywood Association** **P.O. Box 11700** **Tacoma, WA 98411**	**(206) 565-6600**
API	**American Petroleum Institute** **1220 L St., NW** **Washington, DC 20005**	**(202) 682-8000**

ARI	**Air Conditioning and Refrigeration Institute** **1501 Wilson Blvd., 6th Floor** **Arlington, VA 22209**	**(703) 524-8800**
ARMA	**Asphalt Roofing Manufacturers Association** **6288 Montrose Rd.** **Rockville, MD 20852**	**(301) 231-9050**
ASA	**Acoustical Society of America** **500 Sunnyside Blvd.** **Woodbury, NY 11797**	**(516) 349-7800**
ASC	**Adhesive and Sealant Council** **1627 K Street, NW, Suite 1000** **Washington, DC 20006-1707**	**(202) 452-1500**
ASHRAE	**American Society of Heating, Refrigerating and Air-Conditioning Engineers** **1791 Tullie Circle, NE** **Atlanta, GA 30329**	**(404) 636-8400**
ASME	**American Society of Mechanical Engineers** **345 East 47th St.** **New York, NY 10017**	**(212) 705-7722**
ASPE	**American Society of Plumbing Engineers** **3617 Thousand Oaks Blvd., Suite 210** **Westlake, CA 91362**	**(805) 495-7120**
ASSE	**American Society of Sanitary Engineering** **P.O. Box 40362** **Bay Village, OH 44140**	**(216) 835-3040**
ASTM	**American Society for Testing and Materials** **1916 Race St.** **Philadelphia, PA 19103-1187**	**(215) 977-9679**
ATIS	**Alliance for Telecommunications Industry Solutions** **1200 G Street, NW, Suite 500** **Washington, DC 20005**	**(202) 628-6380**
AWCMA	**American Window Covering Manufacturers Association** **355 Lexington Avenue** **New York, NY 10017**	**(212) 661-4261**
AWI	**Architectural Woodwork Institute** **P.O. Box 1550** **13924 Braddock Rd., Suite 100** **Centreville, VA 22020**	**(703) 222-1100**

AWPA	**American Wood Preservers' Association** **4128-1/2 California Ave. SW, No. 171** **Seattle, WA 98116**	**(206) 937-5338**
AWPB	**American Wood Preservers Bureau** **4 E. Washington Street** **Newnan, GA 30263**	**(404) 254-9877**
AWS	**American Welding Society** **550 LeJeune Road, NW** **P.O. Box 351040** **Miami, FL 33135**	**(305) 443-9353**
AWWA	**American Water Works Association** **6666 West Quincy Avenue** **Denver, CO 80235**	**(303) 794-7711**
BHMA	**Builders' Hardware Manufacturers Association** **355 Lexington Ave., 17th Floor** **New York, NY 10017**	**(212) 661-4261**
BIA	**Brick Institute of America** **11490 Commerce Park Drive** **Reston, VA 22091**	**(703) 620-0010**
BIFMA	**Business and Institutional Furniture Manufacturers Assoc.** **2335 Burton Street, SE** **Grand Rapids, MI 49506**	**(616) 243-1681**
CAGI	**Compressed Air and Gas Institute** **c/o John H. Addington** **Thomas Associates, Inc.** **1300 Sumner Avenue** **Cleveland, OH 44115-2851**	**(216) 241-7333**
CAUS	**Color Association of the United States** **409 West 44th Street** **New York, NY 10036**	**(212) 582-6884**
CBM	**Certified Ballast Manufacturers Association** **Hanna Building, No. 772** **1422 Euclid Avenue** **Cleveland, OH 44115-2851**	**(216) 241-0711**
CCC	**Carpet Cushion Council** **P.O. Box 546** **Riverside, CT 06878**	**(203) 637-1312**
CDA	**Copper Development Association** **2 Greenwich Office Park, Box 1840** **Greenwich, CT 06836**	**(203) 625-8210**

CFFA	**Chemical Fabrics & Film Association, Inc.** **c/o Thomas Associates, Inc.** **1300 Sumner Avenue** **Cleveland, OH 44115-2851**	**(216) 241-7333**
CGA	**Compressed Gas Association** **1725 Jefferson Davis Highway, Suite 1004** **Arlington, VA 22202-4100**	**(703) 979-0900**
CISCA	**Ceiling and Interior Systems Construction Association** **5700 Old Orchard Road, 1st Floor** **Skokie, IL 60077**	**(708) 965-2776**
CISPI	**Cast Iron Soil Pipe Institute** **5959 Shallowford Road, Suite 419** **Chattanooga, TN 37421**	**(615) 892-0137**
CRI	**Carpet and Rug Institute** **P.O. Box 2048** **Dalton, GA 30722**	**(404) 278-3176**
CRSI	**Concrete Reinforcing Steel Institute** **933 Plum Grove Road** **Schaumburg, IL 60173**	**(708) 517-1200**
DHI	**Door and Hardware Institute** **14170 New Brook Drive** **Chantilly, VA 22022**	**(703) 222-2010**
DIPRA	**Ductile Iron Pipe Research Association** **245 Riverchase Parkway East, Suite O** **Birmingham, AL 35244**	**(205) 988-9870**
DLPA	**Decorative Laminate Products Association** **600 South Federal Street, Suite 400** **Chicago, IL 60605**	**(312) 922-6222**
ECSA	**Exchange Carriers Standards Association** **5430 Grosvenor Lane, Suite 200** **Bethesda, MD 20814**	**(301) 564-4505**
EIA	**Electronic Industries Association** **2001 Pennsylvania Avenue, NW** **Washington, DC 20006-1813**	**(202) 457-4900**
EIMA	**Exterior Insulation Manufacturers Association** **2759 State Road 580, Suite 112** **Clearwater, FL 34621**	**(813) 726-6477**
EJMA	**Expansion Joint Manufacturers Association**	

	25 North Broadway **Tarrytown, NY 10591**	**(914) 332-0040**
ETL	**ETL Testing Laboratories, Inc.** **P.O. Box 2040** **Route 11, Industrial Park** **Cortland, NY 13045**	**(607) 753-6711**
FCI	**Fluid Controls Institute** **P.O. Box 9036** **Morristown, NJ 07960**	**(201) 829-0990**
FCIB	**Floor Covering Installation Board** **310 Holiday Avenue** **Dalton, GA 30720**	**(706) 226-5488**
FGMA	**Flat Glass Marketing Association** **White Lakes Professional Building** **3310 Southwest Harrison** **Topeka, KS 66611-2279**	**(913) 266-7013**
FM	**Factory Mutual Research Organization** **1151 Boston-Providence Turnpike** **P.O. Box 9102** **Norwood, MA 02062**	**(617) 762-4300**
GA	**Gypsum Association** **810 First Street, NE, Suite 510** **Washington, DC 20002**	**(202) 289-5440**
HEI	**Heat Exchange Institute** **c/o John H. Addington** **Thomas Associates, Inc.** **1300 Sumner Avenue** **Cleveland, OH 44115-2851**	**(216) 241-7333**
HI	**Hydronics Institute** **P.O. Box 218** **35 Russo Place** **Berkeley Heights, NJ 07922**	**(908) 464-8200**
H.I.	**Hydraulic Institute** **30200 Detroit Road** **Cleveland, OH 44145-1967**	**(216) 899-0010**
HMA	**Hardwood Manufacturers Assoc.** **400 Penn Center Blvd.** **Pittsburgh, PA 15235**	**(412) 829-0770**

HPMA	**Hardwood Plywood Manufacturers Assoc.** **1825 Michael Farraday Drive** **P.O. Box 2789** **Reston, VA 22090-2789**	**(703) 435-2900**
IBD	**Institute of Business Designers** **341 Merchandise Mart** **Chicago, IL 60654**	**(312) 647-1950**
ICEA	**Insulated Cable Engineers Association, Inc.** **P.O. Box 440** **South Yarmouth, MA 02664**	**(508) 394-4424**
IEC	**International Electrotechnical Commission** **(Available from ANSI)** **1430 Broadway** **New York, NY 10018**	**(212) 354-3300**
IEEE	**Institute of Electrical and Electronic Engineers** **345 East 47th Street** **New York, NY 10017**	**(212) 705-7900**
IESNA	**Illuminating Engineering Society of North America** **345 East 47th Street** **New York, NY 10017**	**(212) 705-7926**
IGCC	**Insulating Glass Certification Council** **c/o ETL Testing Laboratories, Inc.** **P.O. Box 2040** **Route 11, Industrial Park** **Cortland, NY 13045**	**(607) 753-6711**
IMSA	**International Municipal Signal Association** **165 East Union Street** **P.O. Box 539** **Newark, NY 14513**	**(315) 331-2182**
IRI	**Industrial Risk Insurers** **85 Woodland Street** **Hartford, CT 06102**	**(203) 520-7300**
ISA	**Instrument Society of America** **P.O. Box 12277** **67 Alexander Drive** **Research Triangle Park, NC 27709**	**(919) 549-8411**
KCMA	**Kitchen Cabinet Manufacturers Association** **1899 Preston White Drive** **Reston, VA 22091-4326**	**(703) 264-1690**

LIA	**Lead Industries Association, Inc.** **295 Madison Avenue** **New York, NY 10017**	**(212) 578-4750**
LPI	**Lightning Protection Institute** **3365 North Arlington Heights Road, Suite J** **Arlington Heights, IL 60004**	**(708) 255-3003**
MCAA	**Mechanical Contractors Association of America** **1385 Piccard Drive** **Rockville, MD 20850-4329**	**(301) 869-5800**
ML/SFA	**Metal Lath/Steel Framing Association** **(A Division of the National Association of Architectural Metal Manufacturers)** **600 South Federal Street, Suite 400** **Chicago, IL 60605**	**(312) 922-6222**
MSS	**Manufacturers Standardization Society of the Valve and Fittings Industry** **127 Park Street, NE** **Vienna, VA 22180**	**(703) 281-6613**
NAAMM	**National Association of Architectural Metal Manufacturers** **600 South Federal Street, Suite 400** **Chicago, IL 60605**	**(312) 922-6222**
NAIMA	**North American Insulation Manufacturers Association** **44 Canal Center Plaza, Suite 310** **Alexandria, VA 22314**	**(703) 684-0084**
NBHA	**National Builders Hardware Association** **(Now DHI)**	
NCMA	**National Concrete Masonry Association** **P.O. Box 781** **Herndon, VA 22070-0781**	**(703) 435-4900**
NCRPM	**National Council on Radiation Protection and Measurements** **7910 Woodmont Avenue, Suite 800** **Bethesda, MD 20814**	**(301) 657-2652**
NCSPA	**National Corrugated Steel Pipe Association** **2011 Eye Street, NW** **Washington, DC 20006**	**(202) 223-2217**
NEC	**National Electrical Code (from NFPA)**	

NECA	**National Electrical Contractors Association** **7315 Wisconsin Avenue** **Bethesda, MD 20814**	**(301) 657-3110**
NEMA	**National Electrical Manufacturers Association** **2101 L Street, NW, Suite 300** **Washington, DC 20037**	**(202) 457-8400**
NETA	**International Electrical Testing Association** **P.O. Box 687** **Morrison, CO 80465**	**(303) 467-0526**
NFPA	**National Fire Protection Association** **One Batterymarch Park** **P.O. Box 9101** **Quincy, MA 02269-9101**	**(617) 770-3000** **(800) 344-3555**
N.F.P.A.	**National Forest Products Association** **1250 Connecticut Avenue, NW, Suite 200** **Washington, DC 20036**	**(202) 463-2700**
NHLA	**National Hardwood Lumber Association** **P.O. Box 34518** **Memphis, TN 38184-0518**	**(901) 377-1818**
NKCA	**National Kitchen Cabinet Association** **(Now KCMA)**	
NLGA	**National Lumber Grades Authority** **1055 West Hastings Street, Suite 260** **Vancouver, British Columbia** **Canada V6E 2E9**	**(604) 687-2171**
NOFMA	**National Oak Flooring Manufacturers Association** **P.O. Box 3009** **Memphis, TN 38173-0009**	**(901) 526-5016**
NPA	**National Particleboard Association** **18928 Premiere Court** **Gaithersburg, MD 20879**	**(301) 670-0604**
NPCA	**National Paint and Coatings Association** **1500 Rhode Island Avenue, NW** **Washington, DC 20005**	**(202) 462-6272**
NRCA	**National Roofing Contractors Association** **10255 West Higgins Road, Suite 600** **Rosemont, IL 60018-5607**	**(708) 299-9070**

NSF	**National Sanitation Foundation** **3475 Plymouth Road** **P.O. Box 1468** **Ann Arbor, MI 48106**	**(313) 769-8010**
NWMA	**National Woodwork Manufacturers Association** **(Now NWWDA)**	
NWWDA	**National Wood Window and Door Association** **1400 East Touhy Avenue, #G54** **Des Plaines, IL 60018**	**(708) 299-5200**
PCA	**Portland Cement Association** **5420 Old Orchard Road** **Skokie, IL 60077**	**(708) 966-6200**
PCI	**Precast/Prestressed Concrete Institute** **175 West Jackson Blvd.** **Chicago, IL 60604**	**(312) 786-0300**
PDI	**Plumbing and Drainage Institute** **c/o Sol Baker** **1106 West 77th Street, South Drive** **Indianapolis, IN 46260**	**(317) 251-6970**
PEI	**Porcelain Enamel Institute** **1101 Connecticut Avenue, NW, Suite 700** **Washington, DC 20036**	**(202) 857-1134**
RFCI	**Resilient Floor Covering Institute** **966 Hungerford Drive, Suite 12-B** **Rockville, MD 20805**	**(301) 340-8580**
RIS	**Redwood Inspection Service** **405 Enfrente Drive, Suite 200** **Novato, CA 94949**	**(415) 382-0662**
RMA	**Rubber Manufacturers Association** **1400 K Street, NW** **Washington DC 20005**	**(202) 682-4800**
SDI	**Steel Deck Institute** **P.O. Box 9506** **Canton, OH 44711**	**(216) 493-7886**
S.D.I.	**Steel Door Institute** **30200 Detroit Road** **Cleveland, OH 44145**	**(216) 889-0010**

SGCC	**Safety Glazing Certification Council** **c/o ETL Testing Laboratories** **Route 11, Industrial Park** **Cortland, NY 13045**	**(607) 753-6711**
SHLMA	**Southern Hardwood Lumber Manufacturers Association** **(Now HMA)**	
SIGMA	**Sealed Insulating Glass Manufacturers Association** **401 North Michigan Avenue** **Chicago, IL 60611**	**(312) 644-6610**
SMA	**Screen Manufacturers Association** **3950 Lake Shore Drive, Suite 502-A** **Chicago, IL 60613-3431**	**(312) 525-2644**
SMACNA	**Sheet Metal and Air Conditioning** **Contractors National Association** **4201 Lafayette Center Drive** **Chantilly, VA 22021**	**(703) 803-2980**
SPIB	**Southern Pine Inspection Bureau** **4709 Scenic Highway** **Pensacola, FL 32504**	**(904) 434-2611**
SPRI	**Single Ply Roofing Institute** **20 Walnut Street** **Wellesley Hills, MA 02189**	**(617) 237-7879**
SSPC	**Steel Structures Painting Council** **4400 Fifth Avenue** **Pittsburgh, PA 15213-2683**	**(412) 268-3327**
SSPMA	**Sump and Sewage Pump Manufacturers Association** **P.O. Box 298** **Winnetka, IL 60093**	**(708) 835-8911**
SWI	**Steel Window Institute** **c/o Thomas Associates, Inc.** **1300 Sumner Ave,** **Cleveland, OH 44115-2851**	**(216) 241-7333**
SWPA	**Submersible Wastewater Pump Association** **600 South Federal Street, Suite 400** **Chicago, IL 60605**	**(312) 922-6222**
TIMA	**Thermal Insulation Manufacturers Association** **29 Bank Street** **Stamford, CT 06901** **(Standards now issued by NAIMA)**	**(203) 324-7533**

TPI	**Truss Plate Institute** **583 D'Onofrio Drive, Suite 200** **Madison, WI 53719**	**(608) 833-5900**
UFAC	**Upholstered Furniture Action Council** **Box 2436** **High Point, NC 27261**	**(919) 885-5065**
UL	**Underwriters Laboratories, Inc.** **333 Pfingsten Road** **Northbrook, IL 60062**	**(708) 272-8800**
USP	**U.S. Pharmacopoeial Convention** **12601 Twinbrook Parkway** **Rockville, MD 20852**	**(301) 881-0666**
WCLIB	**West Coast Lumber Inspection Bureau** **P.O. Box 23145** **Portland, OR 97223**	**(503) 639-0651**
WCMA	**Wallcovering Manufacturers Association** **355 Lexington Avenue, 17th Floor** **New York, NY 10017** **(WCMA has moved from this location, perhaps to the Chicago area. Address and telephone number not confirmed.)**	**(212) 661-4261**
WIC	**Woodwork Institute of California** **P.O. Box 11428** **Fresno, CA 93773-1428**	**(209) 233-9035**
WRI	**Wire Reinforcement Institute** **1101 Connecticut Avenue NW, Suite 700** **Washington, DC 20036-4303**	**(202) 429-5125**
WSC	**Water Systems Council** **600 South Federal Street, Suite 400** **Chicago, IL 60605**	**(312) 922-6222**
WSFI	**Wood and Synthetic Flooring Institute** **4415 West Harrison Street, Suite 242-C** **Hillside, IL 60162**	**(708) 449-2933**
WLPDIA	**Western Lath, Plaster, Drywall Industries Association** **(Formerly California Lath & Plaster Association)** **8635 Navajo Road** **San Diego, CA 92119**	**(619) 466-9070**

WWPA **Western Wood Products Association**
Yeon Building
522 SW 5th Avenue
Portland, OR 97204-2122 **(503) 224-3930**

W.W.P.A. **Woven Wire Products Association**
2515 North Nordica Avenue
Chicago, IL 60635 **(312) 637-1359**

G. Federal Government Agencies: Names and titles of federal government standard or Specification-producing agencies are often abbreviated. The following acronyms or abbreviations referenced in the Contract Documents indicate names of standard or Specification-producing agencies of the federal government. Names and addresses are subject to change but are believed to be, but are not assured to be, accurate and up to date as of the date of the Contract Documents.

CE **Corps of Engineers**
(U.S. Department of the Army)
Chief of Engineers – Referral
Washington, DC 20314 **(202) 272-0660**

CFR **Code of Federal Regulations**
(Available from the Government Printing Office)
North Capitol Street between G and H Streets, NW
Washington, DC 20402
(Material is usually first published in the "Federal Register")
(202) 783-3238

CPSC **Consumer Product Safety Commission**
5401 Westbard Avenue
Bethesda, MD 20207 **(301) 492-6580**
(800) 638-2772

CS **Commercial Standard**
(U.S. Department of Commerce)
Washington, DC 20230 **(202) 482-2000**

DOC **U.S. Department of Commerce**
14th Street and Constitution Avenue, NW
Washington, DC 20230 **(202) 482-2000**

DOT **Department of Transportation**
400 Seventh Street, SW
Washington, DC 20590 **(202) 366-4000**

EPA **Environmental Protection Agency**
401 M Street, SW
Washington, DC 20460 **(202) 382-2090**

FAA	**Federal Aviation Administration** **(U.S. Department of Transportation)** **800 Independence Avenue, SW** **Washington, DC 20590**	**(202) 366-4000**
FCC	**Federal Communications Commission** **1919 M Street, NW** **Washington, DC 20554**	**(202) 632-7000**
FHA	**Federal Housing Administration** **(U.S. Department of Housing and Urban Development)** **Director, Manufactured Housing and Construction Standards Division** **451 Seventh Street, SW, Room 9158** **Washington, DC 20201**	**(202) 755-5210**
FS	**Federal Specification (from GSA)** **Specifications Unit (WFSIS)** **7th and D Streets, SW** **Washington, DC 20407**	**(202) 708-9205**
GSA	**General Services Administration** **F and 18th Streets, NW** **Washington, DC 20405**	**(202) 708-5082**
MIL	**Military Standardization Documents** **(U.S. Department of Defense)** **Naval Publications and Forms Center** **5801 Tabor Avenue** **Philadelphia, PA 19120**	
NIST	**National Institute of Standards and Technology** **(U.S. Department of Commerce)** **Gaithersburg, MD 20899**	**(301) 975-2000**
OSHA	**Occupational Safety and Health Administration** **(U.S. Department of Labor)** **N3647** **200 Constitution Avenue, NW** **Washington, DC 20210**	**(202) 219-8148**
PS	**Product Standard of NBS** **(U.S. Department of Commerce)** **Washington, DC 20230**	**(202) 482-2000**
REA	**Rural Electrification Administration** **(U.S. Department of Agriculture)** **14th Street and Independence Avenue, SW** **Washington, DC 20250**	**(202) 447-2791**

USDA	**U.S. Department of Agriculture** **14th Street and Independence Avenue, SW** **Washington, DC 20250**	**(202) 447-2791**
USPS	**U.S. Postal Service** **475 L'Enfant Plaza, SW** **Washington, DC 20260-0010**	**(202) 268-2000**

1.5 GOVERNING REGULATIONS AND AUTHORITIES

A. Copies of Regulations: Obtain copies of governing regulations and retain at the Project site to be available for reference by parties who have a reasonable need, if requested by the Architect.

1.6 SUBMITTALS

A. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence, and records established in conjunction with compliance with standards and regulations bearing upon performance of the Work.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, are hereby made a part of this Section.

1.2 SUMMARY

A. This Section specifies requirements for temporary services and facilities, including utilities, construction and support facilities, security and protection.

B. Temporary utilities required include, but are not limited to:

1. Temporary heat & winter conditions.

C. Temporary construction and support facilities required include, but are not limited to:

1. Waste disposal services.
2. Temporary yard and storage on and off-site.
3. Construction aids and miscellaneous services and facilities.
4. Sweeping compound.
5. Emergency portable generators of size required, if permanent power is temporarily unavailable.
6. Water service and distribution, if water supply to adjacent occupied spaces is temporarily unavailable.
7. Parking.

D. Security and protection facilities required include, but are not limited to:

1. Temporary weather protection, enclosures, and covers.
2. Temporary fire protection and fire watch if required by Worcester Fire Department.
3. Barricades, warning signs, lights.
4. Temporary partitions between occupied areas and construction areas, STC 48 or better.

E. Where a distinction is made in this specification section between temporary services to be provided by a General Contractor and those to be provided by a Subcontractor, the purpose is only to clarify which costs are to be included by the applicable parties for inclusion in the applicable bids and contracts that would follow. These distinctions have no bearing upon the Contract between the Owner and General Contractor and do not limit in any way the General Contractor's responsibility to provide all such temporary services without additional cost to the Owner. For the sake of clarity in this specification section, the term General Contractor has been used for the person called the Contractor in other specification sections, when the intent is that that person shall provide a service directly at his own expense rather than at the expense of one of the Subcontractors from whom the Owner has taken filed sub-bids.

F. The temporary services describes in this specification section may not be adequate to provide for all of the needs of the General Contractor or all Subcontractors, but are intended only to

provide a basis for obtaining filed sub-bids. The General Contractor or any Subcontractor requiring additional temporary services for the proper execution of his work or because of climatic conditions shall arrange for and obtain such services at his own expense without further compensation by the Owner.

G. The Contractor shall be responsible for restoring all landscaped areas affected by the work of this project to their original "like-new" state that existed prior to work commencing. This restoration work shall include, but not be limited to, planting beds with mulch, trees, shrubs, and lawn areas. Great care should be taken during the course of the work to not damage nor destroy any landscaping impacted by this work. Any landscaping disturbed, damaged, or destroyed shall be restored, repaired, or replaced in-kind at no cost to the Owner.

1.3 SUBMITTALS

A. Schedule: Submit a schedule indicating implementation and termination of each temporary utility within fifteen (15) days of date established for Commencement of the Work.

1.4 QUALITY ASSURANCE

A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction, including but not limited to:

1. Commonwealth of Massachusetts State Building Code requirements; 9th Edition.
2. Federal, State and City Health and safety regulations.
3. Utility company regulations.
4. Police, Fire Department and Rescue Squad rules.
5. Environmental protection regulations.

B. Standards: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction, including but not limited to:

1. NFPA Code 241.
2. NFPA 70.
3. ANSI A10.
4. NECA NJG-6.

C. Electric Service: Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70.

D. Inspections: Arrange for authorities having jurisdiction to inspect and test temporary utilities prior to use. Obtain required certifications and permits.

1.5 PROJECT CONDITIONS

A. Temporary Utilities: At earliest feasible time, when acceptable to Owner, change from use of temporary service to use of permanent service.

B. Conditions of Use: Maintain temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload temporary facilities, or permit them to interfere with progress. Do not allow hazardous, dangerous, unsanitary conditions, or public nuisances to develop or persist on the site.

C. Maintain the continuity of all utility services at all times across all Phases of the Construction Project, unless otherwise directed by the Architect or Owner.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Provide new materials suitable for the use intended, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.

2.2 TEMPORARY WATER

A. Definitions:
   1. Water Access Point: A point, within the Project area, at which water is available during construction.

B. Charges: The General Contractor shall pay for all facilities to provide water during construction, while the Owner will supply and pay for water during the construction. The General Contractors shall pay for backflow preventer if utilizing Owners Hydrant for water.

   1. The furnishing of water by the Owner shall be conditional upon all contractors being conservative and prudent in its use. In the event of any contractor is repeatedly wasteful in the use of water thus provided, the Owner reserves the right to charge the General Contractor for wasteful usage at an equitable rate for the additional portion of water used.

C. Temporary Water: The General Contractor shall be responsible for all facilities to provide water during construction as defined above and further specified as follows:

   1. Except under unusual circumstances, when otherwise specified or approved by the Architect, all water shall be of potable quality.
   2. The General Contractor shall provide all necessary piping, valving, hose bibbs, hosing, etc. to provide temporary water during construction from a water access point determined by the Owner's Representative. Any facilities running within the building are required not to leak. Any damage incurred due to leaks shall be repaired at the expense of the General Contractor.
   3. The General Contractor shall pay for and be responsible for the protection of Temporary Water, which he installs, from freezing and other damage.

2.3 TEMPORARY HEAT

A. Definitions:

1. Temporary Heating & Ventilating: The General Contractor shall provide temporary heat and ventilation, as needed, to work areas outside the building to maintain minimum temperatures described below. The General Contractor shall also provide temporary heat and ventilation, as needed, to work areas inside the building to maintain an indoor temperature of 68 degrees Fahrenheit during the winter months and 75 degrees Fahrenheit during the summer months.

B. Charges: The General Contractor shall pay for all temporary heat and ventilation as defined above. The General Contractor shall pay for all fuel required for Temporary Heat and Ventilation. The Owner shall pay for all electrical energy use charges.

1. The furnishing of electrical energy by the Owner shall be conditional upon being conservative and prudent in its use. In the event that any contractor is repeatedly wasteful in the use of electrical energy thus provided, the Owner reserves the right to charge the General Contractor at an equitable rate for the additional portion of electrical energy used.

C. Temporary Heating: Portable heating units shall be of sufficient capacity and number and shall be located so that damage to any part of the project from low temperature will be prevented and that concrete, masonry, and other components requiring curing shall be properly cured.

1. Heaters for temporary heat shall be temporary steam generators, forced air heaters, or other type heaters located outside the building or vented to the outside of the building. Type(s) shall be such as to not damage or stain construction or any part of the existing building. Heaters must be UL approved.
2. At no time will oil-burning “salamander” type heaters be used, nor will non-vented, open flame heaters be used inside the building.
3. Propane-type heaters shall not be used at anytime within the area of the building or near stockpiles of combustible materials.
4. Temporary heating shall apply to winter conditions.

D. Temporary Ventilation: Portable ventilation units shall be of sufficient capacity and number and shall be located so that damage to any part of the project from excess humidity will be prevented and that concrete, masonry, and other components requiring curing shall be properly cured.

2.4 TEMPORARY POWER AND LIGHTING

A. Definitions:

1. Temporary Electric: The furnishing, installing, maintenance, and removal of all wiring, fusing, switches, outlets, lamps, and accessory electrical devices required to provide lighting and power needed by all construction trades for the duration of construction.

B. Charges: The General Contractor shall pay for all facilities for Temporary Electric. The Owner shall pay for all use charges for electrical energy.

1. The furnishing of electrical energy by the Owner shall be conditional upon all contractors being conservative and prudent in its use. In the event that any contractor is repeatedly wasteful in the use of electrical energy thus provided, the Owner reserves the right to charge the General Contractor at an equitable rate for the additional portion of energy consumed.

C. Temporary Electricity: The General Contractor shall pay for and be responsible for Temporary Electric as defined above and further specified as follows:

1. The General Contractor shall provide temporary electricity during construction from an electrical service access point determined by the Owner's Representative.
2. The Temporary Electricity is expected to be used during normal working hours, as defined in Section 01010 – Summary of Work. No additional charge shall be made by the General Contractor for switching the system on and off to meet this time requirement.
3. Responsibility of compliance with local, state, and national codes for installation of the Temporary Electric service shall be borne by the General Contractor.
4. The General Contractor shall be responsible to service and maintain all temporary lighting during the construction.
5. The General Contractor shall be responsible to pay for the following Temporary Electricity. This schedule will not necessarily provide for all requirements of all contractors. The General Contractor or any Subcontractor having requirements for power, lighting, or service other than those provided herein, shall make the necessary arrangements to obtain such power, lighting, or service at his own expense.
   a. The General Contractor shall obtain all necessary permits, shall furnish and install the temporary electrical power and lighting systems, and shall pay for all labor, materials, and equipment required for this work. All such temporary electrical work shall meet the requirements of the Massachusetts Electrical Code and OSHA.
   b. The Electrical Subcontractor shall furnish and install a feeder, or feeders, of sufficient capacity to provide additional lighting to the work areas, as required, to properly carryout the work. Temporary lighting shall be based on the following requirements:
      1) Rooms or spaces under 250 square feet: Two (2) 100-watt lamps.
      2) Rooms or spaces over 250 square feet and under 500 square feet: Four (4) 100-watt lamps.
      3) Rooms or spaces over 500 square feet and under 1,000 square feet: Two (2) 200-watt lamps.
      4) Rooms or spaces over 1,000 square feet: Two (2) 200-watt lamps for every 1,000 square feet or fraction thereof.
      5) Sufficient additional wiring outlets and lamps shall be installed to insure proper lighting in stairwells, corridors, and passage areas.
      6) Temporary power, in addition to the lighting requirements, shall be provided throughout the building for electrically operated tools, based on a minimum of 0.50 watts per square foot.
      7) Outlets shall be located at convenient points so that extension cords of not over 50 feet in length will reach all work requiring light or power.
      8) All Electrical Outlets shall be properly configured NEMA polarized outlets to prevent insertion of 110-120 volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light, for connection of power tools and equipment.

9) All Electrical Power Cords shall be grounded extension cords that are "hard-service" type where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas where construction activities are in progress.

c. All necessary cables, load centers, switches, and accessories required for the temporary light and power installation shall be provided and installed by the General Contractor.
d. The General Contractor shall furnish and install all lamps, both initial and replacement until the Date of Substantial Completion.
e. Temporary light and power requirements herein required are for the use of all trades working at the site.
f. All Contractors and Subcontractors shall, individually, furnish all extension cords and lamps, sockets, motors, and accessories required for their work.
   1) All Electrical Power Cords shall be grounded extension cords that are "hard-service" type where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas where construction activities are in progress.
g. Any of the Contractors or Subcontractors shall reimburse the General Contractor for any of the following:
   1) Any temporary wiring of a special nature, other than that specified above, required for their work.
   2) Any temporary wiring of construction offices and buildings used by them.
   3) Any temporary wiring for protective night lighting.
h. The General Contractor shall be responsible for removing all temporary wiring, service equipment, and accessories when and as directed to by the General Contractor.
i. The provisions of the Massachusetts Electrical Code shall be strictly complied to, with special respect to Article 305 of said code, and the following precautions shall be taken:
   1) Open conductors shall be fastened at the ceiling height at minimum of 10 feet intervals. Conductors may not be laid on the floor, and receptacles or fixed equipment circuits shall contain a separate equipment-grounding conductor if run as open wiring. Receptacles shall be of the grounding type. Branch circuits shall also be of the grounding type, unless installed in a complete metallic conductor and receptacles electrically connected to the grounding conductor. Neither bare conductors nor earth returns shall be used for wiring of any temporary circuits. Grounding circuits shall never be interrupted.
   2) All 15 and 20 amp receptacle outlets on single phase circuits which are used for construction purposes shall be equipped with ground-fault circuit interrupters, reset button, and pilot lights; as required by Article 210 of the Massachusetts Electrical Code.
   3) All outlets shall be properly configured NEMA polarized outlets to prevent insertion of 110-120 volt plugs into higher voltage outlets.

2.5 TEMPORARY SANITARY FACILTIES

1. The General Contractor shall provide ample toilet facilities with proper enclosures for the use of workmen employed on the work to be as located within the construction areas on site where permitted by the Architect.

a. Provide the Architect with a schedule of maintenance and cleaning. Provide toilet facilities with hand washing sanitizer dispenser, paper towels, and cleaners.

b. Toilet facilities shall be installed and maintained in conformity with the governing laws and building code. They shall be properly lit, ventilated, and kept clean at all times.

c. At no time shall any Contractor Personnel use toilet facilities outside the work areas or in any Owner occupied parts of the building.

2.6 TEMPORARY WEATHER PROTECTION

A. Definitions:
1. Weather Protection: The furnishing, installing, maintenance, and removal of temporary closures, covers, shields, and any other weather protection devices as required to protect work in place and permit construction to proceed during cold or inclement weather.

B. Weather Protection Standard: The following weather protection standards pursuant to Chapter 597 of the Acts of 1980, modifying Sections 44F and G of Chapter 149 of the General Laws, are hereby incorporated into this specification, and shall be considered supplementary to the temporary heating and temporary enclosure requirements. Under the provisions of Chapter 149, Section 44F(I) and Section 44G, Paragraph D, of the General Laws, General Contractors are required to provide weather protection to allow building construction to be carried on during the months of November through March. These standards do not require enclosures for heat for operations that are not economically feasible to protect in the judgment of the Awarding Authority; including for example, site work, excavation, pile driving, steel erection, erection of certain exterior panels, roofing, and the like.
1. The General Contractor shall provide and install weather protection.
2. Weather protection shall be provided during the months of November through March.
3. Temperature at the working surface shall be at least forty degrees Fahrenheit (40° F). This provision does not supercede any specific greater requirements for the methods of construction or curing of materials.
4. Weather protection materials, equipment, and the installation thereof, shall comply with all safety rules and regulations including the provisions for adequate ventilation and fire protection devices.
5. At completion of work, the General Contractor shall remove temporary weather protection and restore all surfaces to first class condition.
6. The General Contractor may choose, if the Awarding Authority approves, to use the permanent heating system for temporary heat after the building is enclosed and the system has been tested and is ready to operate.
   a. The General Contractor shall thoroughly clean and restore to first class condition, acceptable to the Awarding Authority, all portions of the permanent heating system that are used for heating during construction.
   b. Use of the permanent heating system for weather protection shall not affect any heating system guarantee that may be due to the Awarding Authority; such guarantee shall begin to run only when the Awarding Authority accepts the building.
7. Reporting Requirements:
   a. Within thirty (30) calendar days after Contract Award the General Contractor shall submit, in writing to the Awarding Authority for approval, its proposed plan for

weather protection. Refer to Section 01300 – Submittals for additional information regarding the appropriate procedure in preparing this submittal.

b. The General Contractor shall furnish and install accurate Fahrenheit thermometers at places designated by the Awarding Authority to determine whether the required temperature is being maintained.

C. Temporary Covers and Enclosures:

1. Except as otherwise specified herein below, all costs of closing openings in new construction and the exterior of the existing buildings where opened to the weather, including temporary covers and enclosures, shall be borne by the General Contractor. Enclosures must be built around various portions of the new construction and new exterior openings in the existing building as the work progresses if, and as necessary to totally insure against the intrusion of rain, snow, and other moisture which might damage the new or existing materials or finishes and as necessary to maintain the minimum temperatures specified.
   a. Where roofs, exterior walls, windows, or other elements of new or existing buildings or structures providing weather protection are to be temporarily opened to the weather, they shall be fully enclosed or covered with securely attached and well draining enclosures whenever inclement weather is occurring or is threatening, to assure absolute weather protection. Any and all damage to the new or existing buildings or structures, including all materials and finishes thereon, caused by inadequate protection shall be made good by the General Contractor without further cost to the Owner.
2. All such weather tight enclosures shall provide a reasonable open area to permit drying of new wet materials while at the same time making it possible to maintain the required interior temperatures. The General Contractor shall provide sufficient continuous ventilation until the time that the "wet" work of the project has dried sufficiently to receive finished woodwork and other materials subject to moisture damage, at which time the ventilation shall be maintained at approximately the anticipated conditions of final use of the project.
3. The permanent doors and frames shall not be used as temporary enclosures prior to the time of delivery of finished woodwork or acoustical materials. Temporary wood or plywood doors with wood frames and proper hardware to make the doors self-closing shall be provided, instead, at the door openings.
4. As parts of the temporary enclosures, the permanent doors, windows, and fixed glass may be used, provided sufficient ventilation area is available and that extreme care is taken to prevent damage to the same. Where available ventilation area is limited, intake and discharge fans may be used to increase air movement through the construction areas. Before delivery of finished woodwork or other materials subject to moisture damage, the permanent windows, roof accessories, fixed glass, doors, and entrances must be in place. Spark-proof fans shall also be provided to remove toxic or obnoxious fumes from enclosed areas as may be required.
5. Once temporary enclosures are in place, a temperature of at least 55 degrees Fahrenheit shall be maintained within all interior workspaces. From time of delivery of first shipment of finished woodwork or other finished materials subject to moisture damage, a temperature of at least 60 degrees Fahrenheit shall be maintained within all interior spaces. Temperatures shall be maintained at this level until time of substantial completion of the project or occupancy by the Owner, whichever is sooner, and shall not be discontinued until definite arrangements for same have been made by the Owner.

D. Weather Protection by Subcontractors: The General Contractor shall provide at his own expense all Weather Protection as defined above except as follows:

1. Each Subcontractor shall pay for and be responsible for the weather protection of his tools, devices, equipment, appliances, and appurtenances to used in the accomplishment of his work and for weather protection of materials furnished by him until such materials are incorporated as a physical part of the Project.
2. Protection and heating of aggregates and water for concrete and mortars shall be the responsibility and at the expense of the respective Subcontractors furnishing concrete and mortars.
3. Construction Water Facilities, furnished and installed by the General Contractor, shall be protected against freezing by the Contractor at his own expense.
4. Hoses, piping, and accessory devices installed and connected by others to the water facilities furnished by the Contractor shall be protected against freezing by the installer at his own expense.

2.7 TEMPORARY FIRE PROTECTION

A. The General Contractor shall take all necessary precautions for the prevention of fire during construction. He shall be responsible that the area within the contract limits is kept orderly and clean and that combustible rubbish is promptly removed from the site. Combustible materials shall be stored on site in a manner and at locations approved by the Architect. The General Contractor shall comply with all suggestions regarding fire protection made by the Insurance Company with which the Owner maintains his fire insurance.

B. The General Contractor shall provide and maintain in good working order, under all conditions, readily available to all portions of the site and work, suitable and adequate fire protection equipment and services. Such facilities shall include, but are not limited to, the furnishing and maintaining in good working order a minimum of two (2) standard, Underwriters' Laboratories labeled, 2-1/2 gallon capacity fire extinguishers per floor.

C. Smoking shall be prohibited on the premises and signs to this effect shall be posted conspicuously.

D. Fires shall not be built on the premises.

2.8 TEMPORARY CRANES, LIFTS, DERRICKS, AND HOISTING SERVICES

A. The General Contractor shall furnish, install, operate, and maintain in safe condition all crane services outside of the building for his own use and for the use of all Subcontractors on the project to properly carry out and complete the work, except as may otherwise be specifically provided for in any of the trade sections of the Specifications.

B. All crane services shall be provided at no cost to the Subcontractors for their work.

C. Each Subcontractor shall, however, provide their own lifts, derricks, hoisting services, etc. (excluding crane services outside the building) for their own work outside and inside the building to properly complete their work.

D. All cranes, lifts, derricks, and hoisting equipment, machinery, and operation shall comply in all respects to the governing laws and codes.

2.9 TEMPORARY STAGING AND SCAFFOLDING

A. The General Contractor shall furnish, erect, and maintain in safe condition all exterior and interior staging and scaffolding required for his own use.

B. Each of the Subcontractors shall furnish, erect, and maintain in safe condition all exterior and interior staging and scaffolding for their own use.

C. All staging and scaffolding shall be enclosed at the ground by a temporary construction fence as defined elsewhere in this Section.

D. Staging and scaffolding shall comply in all respects to the governing laws and codes.

2.10 TEMPORARY BRACING, SHORING, SHEETING, AND TIE-DOWNS

A. The General Contractor shall take all precautions to protect the Work against collapse or other damage by earth or construction loads, high winds, snow and rain loads, damage by adverse weather conditions or geological disturbances, or other cause, by temporary bracing shoring, sheeting, guying, lacing, covering, weighting, and other reasonable and prudent means.

2.11 TEMPORARY STAIRS, LADDERS, RAMPS, PLATFORMS, ETC.

A. The General Contractor shall provide and maintain all necessary temporary stairs, ladders, ramps, platforms, and other temporary construction required for the proper execution of the work, all of which shall comply with requirements of the governing laws and codes and/or as required by local building officials.

B. As soon as the permanent ladders and hatches are installed, the General Contractor shall provide temporary protective measures acceptable to the Architect to maintain their new condition until substantial completion, so to assure that such items will not be damaged as the remaining work progresses.

2.12 TEMPORARY FENCING, BARRIERS, AND PARTITIONS

A. Protection: The General Contractor shall be fully responsible for security of the work areas of the site and for patrolling and protecting the work under construction and his and the Owner's materials stored or otherwise located on the site.

B. Temporary Barricading: In addition, the General Contractor shall provide other temporary fencing, barricading, and overhead protection of substantial nature to protect workmen, other personnel, and the public against various hazards and attendant nuisances that come about as the work progresses such as, but not necessarily limited to, falling materials, dangerous excavations, dangerous projections or obstructions, stored or stock piled materials, etc. Comply fully with recommendations of the Association of General Contractors and provisions of the governing laws and codes.

Note: As part of requirement for overhead protection, include substantial, well constructed, walkways covers sufficient to assure pedestrian safety, in accordance with recommendations of the Association of General Contractors and provisions of the governing laws and codes.

C. In addition, the General Contractor shall provide all necessary protective barriers within the existing building as required to assure the safety of persons and property wherever work of this Contract is being carried out. Include substantial, well constructed, protective barriers at all construction work-limit-lines separating Contract work areas from areas occupied by the Owner. Also include flameproof dust-curtaining and block or filter mechanical return air systems in a safe manner, in cooperation with Mechanical trade, between areas where dust effusive work is being carried out and other interior areas of the new addition and existing building to prevent passage of dirt and dust. Barriers, curtaining, etc., must be self-supporting, and must not depend on building construction for primary structure or anchorage. Locations and quantities of barriers and dust curtaining shall at all times be subject to Owner's and Architect's approval, but such approval, or lack of inspection or approval, by the Owner or the Architect, shall not be construed as relieving the Contractor of any of his responsibilities under the Contract.

2.13 TEMPORARY STORAGE FACILITIES

A. Space for storage of materials shall be confined to the construction areas outside the building and as designated and/or approved by the Architect.

B. Locations where construction equipment may be stored during non-working hours shall be as acceptable to the Owner. Construction equipment shall not present a hazard when stored.

2.14 NOISE, DUST, AND POLLUTION CONTROL

A. All work performed under the Contract shall conform to the requirements of Chapter III, Section 31C and Section 142D of the General Laws, Commonwealth of Massachusetts and Rules and Regulations adopted thereto by the Commonwealth of Massachusetts, Department of Public Health, and the requirements of local noise, dust, and pollution control laws, ordinances, and regulative agencies applicable to the work.

B. The General Contractor shall provide temporary partitions to prevent noise, dust, pollution or order from entering occupied spaces. Temporary partitions shall have STC of 50. Submit location plan and type of construction for temporary partitions for approval.

C. Control of air borne dust or pollution from the site with spray or as otherwise may be necessary to prevent the migration of any dust or pollutants.

D. Dust Control: Use water mist, temporary enclosures, and other suitable methods to limit spread of dust and dirt. Comply with governing environmental protection regulations.

1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, or pollution.
2. Vacuum equipment shall be equipped with HEPA filters.
3. Vacuum carpeted areas.
4. Wet mop floors to eliminate trackable dirt.
5. Sweeping shall be allowed only with the use of a non-oil based sweeping compound followed by vacuuming any remaining residue.
6. Wipe down walls and doors of demolition enclosure.

E. Disposal: Remove and transport debris, in a manner that will prevent spillage on adjacent surfaces and areas, to the construction dumpster(s).

F. Cleaning: Clean areas adjacent to the work area of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

2.15 WATER CONTROL

A. The General Contractor shall be responsible for site drainage and snow removal within the limit-of-work lines and shall maintain such drainage and removal during the life of the Contract in a manner approved by the Owner and Architect, and so as not to adversely affect the adjacent areas.

B. Water from the Work of this Project shall be disposed of in such a manner as not to be a threat to public health nor cause damage to public or private property. It shall not be disposed of over surfaces of roads, walks, and streets, nor be permitted to cause any interference with the normal use of the same.

C. Removal of snow and ice from within the limit-of-work lines at the site as required to maintain the continual progress of the work, including that required to keep work areas, access roads, and storage areas clear, free, and in use, and as required to prevent damage to existing construction and new work in places.

2.16 CONSTRUCTION CLEANING AND CONSTRUCTION DUMPSTERS

A. The General Contractor shall provide and pay for temporary dumpster type trash containers outside the building for use by all Subcontractors, and shall have the containers replaced, hauled away, and the contents legally disposed of at sufficient intervals to maintain them at all times in sufficiently empty condition that they are ready to receive trash and debris.

B. All construction dumpsters shall be located in the parking lot within the construction staging area and where permitted by the Owner.

C. Each Contractor on the project shall be responsible for removing their own trash and debris from the building to the construction dumpster(s).

D. Waste materials and rubbish, which might otherwise raise dust, shall be sprinkled during handling and loading to minimize this effect. Debris shall be carried out of the structure in containers or dropped in fully enclosed chutes and shall not be passed through, or thrown from, windows or other wall openings, and in no case shall the debris or trash be permitted to drop freely from the openings.

E. The Work Areas shall be inspected daily and all debris, waste, rubbish, etc. shall be removed and placed in a dumpster.

F. All waste materials and rubbish shall be disposed of legally, off the site.

2.17 TEMPORARY RODENT AND PEST CONTROL

A. Rodent and Pest Control: Provide rodent control as necessary to prevent infestation of construction and storage areas. Employ methods and use materials, which will not adversely affect conditions at the site or on adjoining properties. Should rodenticides be considered

necessary submit copies of proposed program to Owner and Architect. Use of rodenticide shall comply with manufacturer's published instructions and recommendations. Clearly indicate:

1. Area or areas to be treated.
2. Rodenticides to be used.
3. Manufacturer's printed instructions.
4. Pollution preventive measures to be employed.

2.18 WATCHMEN, FLAGMEN, AND POLICE DETAILS

A. The General Contractor shall provide the services of flagmen, traffic directors, and police details as necessary and as required by authorities having jurisdiction. Please refer to Section 01010 – Summary of Work for additional information regarding the police details and the appropriate pay rates.

2.19 PARKING

A. Parking will be permitted on site or as directed by the owner.

PART 3 - EXECUTION

3.1 OPERATION, TERMINATION AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.

B. Maintenance: Maintain facilities in good operating condition, until removal. Protect from damage. If damage occurs, repair immediately upon discovery. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour per day basis.

C. Termination and Removal: Unless the Architect requests that it be maintained longer, remove each temporary facility when the need has ended. Clean and renovate permanent facilities that have been used during construction period, including:

1. Replace air filters and clean inside of ductwork and housings.
2. Replace worn parts.
3. Replace lamps.

END OF SECTION

Worcester Public Schools
Worcester, MA

January 17, 2024

SECTION 016000 – PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, are hereby made part of this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements governing the Contractor's selection of products for use in the Project.

B. Reference Standards and Definitions: Refer to Section 01 4200 “References” for the applicability of industry standards to products specified.

C. The Contractor’s Construction Schedule and the Submittal Schedule are specified under Section 01 3300 “Submittal Procedures”.

D. Administration procedures for handling requests for substitutions made after award of the Contract are specified under Section 01 2500 “Substitution Procedures”.

1.3 DEFINITIONS

A. Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties", "systems", "structure", "finishes", "accessories", and similar terms. Such terms are self-explanatory and have well-recognized meanings in the construction industry.

1. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material", "equipment", "system", and terms of similar intent.

    a. "Named Products" are items identified by the manufacturer's product name, including make or model number or other designation, shown or listed in the manufacturer's published product literature that is current as of the date of the Contract Documents.

2. "Materials" are products substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.

3. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections, such as wiring or piping.

1.4 SUBMITTALS

A. Product List: Prepare a schedule in tabular form showing each product listed. Include the manufacturer's name and proprietary product names for each item listed.

1. Coordinate product list with the Contractor's Construction Schedule and the Schedule of Submittals.
2. Form: Prepare product list with information on each item tabulated under the following column headings:

a. Related Specification Section number.
b. Generic name used in Contract Documents.
c. Proprietary name, model number, and similar designations.
d. Manufacturer's name and address.
e. Supplier's name and address.
f. Installer's name and address.
g. Projected delivery date or time span of delivery period.
h. Specific Product “Material Safety Data Sheet” reference.

3. Submittal: Within twenty (20) days after date of commencement of the Work, submit four (4) copies of an initial product list. Provide a written explanation for omissions of data and for known variations from Contract requirements.

a. At the Contractor's option, the initial submittal may be limited to product selections and designations that must be established early in the Contract period.

4. Architect's Action: The Architect will respond in writing to Contractor. No response constitutes no objection to listed manufacturers or products but does not constitute a waiver of the requirement that products comply with Contract Documents. The Architect's response will include the following:

a. A list of unacceptable product selections, containing a brief explanation of reasons for this action.

1.5 MATERIAL SAFETY DATA SHEETS MANUAL

A. Within ten (10) days after submission of Product List Schedule and before materials may be delivered to jobsite, submit one (1) or more 8 ½ x 11 paper size three (3) ring binder with the Product List Schedule and Material Safety Data Sheet for each product. Using the Product List Schedule as table of contents arrange Materials Safety Data Sheets in table of contents order.

B. Submit one (1) copy of materials Safety Data Sheet Manual to Clerk of the Works and Architect.

1. Provide one (1) copy of Material Safety Data Sheets for insertion in Manual for products listed on additional Product List Schedules.

C. This requirement is in addition to any obligation the Contractor has to maintain Material Safety Data Sheets at job site or elsewhere.

1.6 QUALITY ASSURANCE

A. Source Limitations: To the fullest extent possible, provide products of the same kind from a single source.

1. When specified products are available only from sources that do not, or cannot, produce a quantity adequate to complete project requirements in a timely manner, consult with the Architect to determine the most important product qualities before proceeding. Qualities may include attributes, such as visual appearance, strength, durability, or compatibility. When a determination has been made, select products from sources producing products that possess these qualities, to the fullest extent possible.

B. Compatibility of Options: When the Contractor is given the option of selecting between two (2) or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.

1.7 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products according to the manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.

1. Schedule delivery to minimize long-term storage at the site.
2. Coordinate delivery with installation time.
3. Deliver products to the site in an undamaged condition in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
5. Store products at the site in a manner that will facilitate inspection.

6. Store and maintain products within acceptable environmental ranges and conditions required by manufacturer’s instructions.

1.8 WORK CONDITIONS / SEQUENCE

A. If sub-contractors find that conditions are not appropriate for them to begin the work of their trade or if they are directed to perform their work out of sequence by the General Contractor or if the General Contractor directs sub-contractors to start and continue regardless of job conditions, the sub-contractor shall so notify the Architect in writing by certified mail immediately.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, new at the time of installation.

1. Provide products complete with accessories, trim, finish, safety guards, and other devices and details needed for a complete installation and the intended use and effect.

B. Product Selection Procedures: Product Selection is governed by the Contract Documents and governing regulations; not by previous project experience. Procedures governing product selection include the following:

1. Where products or manufacturers are specified by name, accompanied by the term "or equal" or "or approved equal", comply with the Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.
2. Non-proprietary Specifications: When Specifications list products or manufacturers that are available and may be incorporated in the Work, they do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with Contract requirements. Comply with Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.
3. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.
4. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements and are recommended by the manufacturer for the application indicated. General overall performance of a Product is implied where the product is specified for a specific application.
    a. Manufacturer's recommendations may be contained in published product literature or by the manufacturer's certification of performance.

5. Compliance with Standards, Codes, and Regulations: Where the Specifications only require compliance with an imposed code, standard, or regulation, select a product that complies with the standards, codes, or regulations specified.
6. Visual Matching: Where Specifications require matching an established Sample, the Architect's decision will be final on whether a proposed product matches satisfactorily.

    a. Where no product available within the specified category matches satisfactorily and complies with other specified requirements, comply with provisions of the Contract Documents concerning "substitutions" for selection of a matching product in another product category, or for non-compliance with specified requirements.

7. Visual Selection: Where specified product requirements include the phrase "... as selected from manufacturer's standard colors, patterns, textures..." or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Architect will select the color, pattern, and texture from the product line selected.

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS

A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.

1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION

SECTION 017400 - WARRANTIES AND BONDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, are hereby made part of this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for warranties required by the Contract Documents, including manufacturer's standard warranties on products and special warranties.

1. Refer to the General Conditions for terms of the Contractor's special warranty on workmanship and materials.

B. General Closeout requirements and procedures are included in Section 01 7700 "Closeout Procedures".

1. Specific requirements for warranties on products and installations specified to be warranted are included in the individual Sections of Divisions 2 through 26.
2. Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.

C. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

D. Separate Prime Contracts: Each prime contractor is responsible for warranties related to its own contract.

1.3 DEFINITIONS

A. Standard Product Warranties are pre-printed written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.

B. Special Warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.

1.4 WARRANTY REQUIREMENTS

A. Related Damages and Losses: When correcting warranted Work that has failed, remove and replace construction that has been damaged as a result of such failure or must be removed and replaced to provide access for correction of warranted construction.

B. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation, as determined by the Architect.

C. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of the Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.

D. Owner's Recourse: Written warranties made to the Owner are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.

1. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

E. The Owner reserves the right to refuse to accept the Work for the Project where a special warranty, certification or similar commitment on the Work or part of the Work is required, until the Contractor presents evidence that entities required to countersign such commitments are willing to do so.

1.5 SUBMITTALS

A. Submit written warranties to the Architect bound in the Project Closeout Manual as described in Section 017700 – Closeout Procedures. If the Architect's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the Architect.

1. When a designated portion of the Work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Architect within ten (10) days of completion of that designated portion of the Work.

B. When a special warranty is required to be executed by the Contractor, or the Contractor and a subcontractor, supplier or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties, submit a draft to the Architect, for approval prior to final execution.

C. Prepare a written document utilizing the appropriate form, ready for execution by the Contractor, or by the Contractor and subcontractor, supplier, or manufacturer. Submit a draft to the Architect for approval prior to final execution.

1. Refer to individual Sections of Divisions 2 through 16 for specific content requirements and particular requirements for submitting special warranties.

PART 2 – PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 WARRANTIES

A. Schedule: Provide warranties on products and installations as specified in the appropriate Sections of the Specification.

1. When products, equipment, or materials fail and/or continue to be a repetitive source of problems, with no satisfactory resolution during the warranty period, the Owner reserves the right to extend the period of time of the initial warranty period. If no satisfactory resolution can be reached during this resolution period, then the Owner reserves the right to demand for the full replacement of the particular item in question, including all associated work required to execute this replacement at no cost to the Owner.

END OF SECTION

SECTION 017700 – CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections are hereby made a part of this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout including, but not limited to, the following:

1. Inspection procedures.
2. Contractor's monetized punchlist.
3. Project Record Document Submittal.
4. Project Closeout Manual Submittal.
5. Final cleaning.

B. Closeout requirements for specific construction activities are included in the appropriate Sections in Divisions 2 through 9.

1.3 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request for which the architect shall review and/or approve.

1. The contractor shall prepare and submit a monetized punchlist. No exceptions will be considered.
2. In the Application for Payment that coincides with, or first allows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete.

    a. If 100 percent completion cannot be shown, the contractor shall provide his monetized punchlist including, but not limited to, the following:

        1) A list of incomplete items.
        2) The value of each incomplete item.
        3) A Reason each item is not complete.

3. Advise the Owner of pending insurance changeover requirements.
4. Submit application for reduction of retainage.
5. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents, as further described below.
6. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.

7. Submit record drawings, maintenance manuals, damage or settlement surveys, and similar final record information, as further described below.
8. Deliver tools, spare parts, extra stock, and similar items.
9. Make final changeover of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of changeover in security provisions.
10. Complete startup testing of systems and instruction of the Owner's operation and maintenance personnel. Discontinue and remove temporary facilities from the site, along with mockups, construction tools, and similar elements.
11. Complete final cleanup requirements, including touch-up painting.
12. Touch-up and otherwise repair and restore, marred, exposed finishes.

B. Inspection Procedures: On receipt of a request for inspection, the Architect will either proceed with inspection or advise the Contractor of unfilled requirements. The Architect will prepare the Certificate of Substantial Completion following inspection or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.

1. The Architect will repeat inspection when requested and assured that the Work has been substantially completed.
2. Results of the completed inspection will form the basis of requirements for final acceptance.

1.4 FINAL ACCEPTANCE

A. Preliminary procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.

1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted.
2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
3. Submit a certified copy of the Architect's final inspection list of items to be completed or corrected, endorsed and dated by the Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance and shall be endorsed and dated by the Architect.
4. Submit consent to surety of final payment.
5. Submit a final liquidated damages settlement statement.
6. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

B. Re-inspection Procedure: The Architect will re-inspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except for items whose completion is delayed under circumstances acceptable to the Architect.

1. Upon completion of re-inspection, the Architect will prepare a certificate of final acceptance. If the Work is incomplete, the Architect will advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled, but are required for final acceptance.
2. If necessary, re-inspection will be repeated.

1.5 RECORD DOCUMENTS

A. General: Maintain a complete set of Record Documents at the site. Do not use Record Documents for construction purposes. Provide access to Record Documents for Architect and Owner's reference. Generally, without limitation, Record Documents shall include the following:

1. Record Drawings: Maintain a clean set of Contract Drawings and shop drawings, updated weekly to show actual installation. Give particular attention to concealed items.
2. Record Project Manual: Maintain a clean Project Manual, including Addenda, Change Orders, Architect Field Orders, and other modifications, updated weekly to show changes in actual work performed. Give particular attention to substitutions, selection of options, and similar information.
3. Record Product Data: Maintain one copy of each approved Product Data submittal, updated weekly to show changes from products delivered, work performed, and from manufacturer's recommended installation instructions.
4. Record Samples: Maintain one copy of each approved Sample submitted.
5. Record Field Test Reports: Maintain one copy of each Field Test Report.
6. Daily Progress Reports: Maintain one copy of each Daily Progress Report.

B. Maintenance of Documents and Samples: Store documents and samples in Contractor's field office apart from documents used for construction. Provide files and racks for document storage. Provide locked cabinet or secure storage space for storage of samples. File documents and samples in accordance with CSI format. Maintain documents in clean, dry, legible condition and in good order. Do not use Record Documents for construction purposes. Make documents and samples available at all times for inspection by Architect.

C. Recording: Label each document "PROJECT RECORD" in neat large printed letters. Record all information concurrently with the progress of construction. Do not conceal any work until required information is recorded.

D. Drawings: Legibly update all Drawings to record actual construction, including the following:

1. Field changes of dimension and detail.
2. Changes made by Field Order or Change Order.
3. Details not in original Contract Documents.

E. Specifications and Addenda: Legibly mark each Section to record:

1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.
2. Changes made by Field Order or by Change Order.

F. Submittal: At Contract Closeout, deliver Record Documents to Architect. Accompany submittal with transmittal letter in duplicate, indicating the date, Project title and number, Contractor's name and address, title and number of Record Document, and signature of Contractor or his authorized representative.

1.6 PROJECT CLOSEOUT MANUAL

A. General: Prepare and submit Project Closeout Manual as specified in this Section and as approved by the Architect for format. Organize data into suitable sets, bound and indexed using the specification's Table of Contents as a guide. Mark appropriate identification on front and spine of each binder. Include the following types of information:

1. Contact Persons' Names
2. Telephone Numbers
3. Pager or Beeper Numbers
4. Cellular Phone Numbers
5. Description of each warranty items covered.
6. Instructions Describing Protocol for Requesting Warranty Service.
7. Emergency Numbers – 911, Fire, Rescue, Police.
8. Utility Company Contacts.

B. Instruct Owner's personnel in use and layout of manual.

C. Format of Data: Prepare data in form of user's guide-type manual for use by Owner's personnel. Format shall be 8-1/2 in. x 11 in., 20-pound minimum, white, typed pages. Text shall be printed or neatly typewritten. Drawings shall be bound with text, with reinforced punched binder tabs. Fold larger drawings to size of text pages. Provide flyleaf for each separate section. Provide typed descriptions of each product and piece of major equipment. Provide indexed tabs to divide sections. Provide reference in each section to other binders for actual Operating and Maintenance Data. Coordinate Project Closeout Manual with Operating and Maintenance Data.

1. Binders: Provide commercial quality three-ring binders with durable and cleanable plastic covers, with maximum ring size of three (3) inches. Only use one (1) binder for this manual.
2. Binder Cover: Identify each volume with typed or printed title "PROJECT CLOSEOUT MANUAL". List title of Project, identity of separate structure as applicable, and identity of general subject matter covered in the manual.

D. Submittal of Project Closeout Manual: Submit two copies of preliminary draft of proposed formats and outlines of contents prior to start of Work.

1. Architect will review draft and return one copy with comments.
2. Submit one copy of complete data in final form 15 days prior to final inspection or acceptance. Copy will be returned after final inspection or acceptance, with comments.
3. Submit three copies of approved data in final form ten days after final inspection or acceptance.

1.7 OPERATING AND MAINTENANCE DATA

A. General: Prepare and submit Operating and Maintenance Data as specified in this Section and referenced in other pertinent Sections of Specifications. Organize Operating and Maintenance Data into suitable sets, bound and indexed. Mark appropriate

identification on front and spine of each binder. Include the following types of information:

1. Emergency instructions.
2. Spare parts list.
3. Copies of warranties.
4. Wiring diagrams.
5. Inspection procedures.

B. Instruct Owner's personnel in maintenance of products and in operation of equipment and systems.

C. Preparation of data shall be done by personnel trained and experienced in maintenance and operation of described products.

D. Format of Data: Prepare data in form of instructional manual for use by Owner's personnel. Format shall be 8-1/2 in. x 11 in., 20-pound minimum, white, typed pages. Text shall be manufacturer's printed data, or neatly typewritten. Drawings shall be bound with text, with reinforced punched binder tabs. Fold larger drawings to size of text pages. Provide flyleaf for each separate product or each piece of operating equipment. Provide typed description of product and major component parts of equipment. Provide indexed tabs.

1. Binders: Provide commercial quality three-ring binders with durable and cleanable plastic covers, with maximum ring size of two (2) inches. When multiple binders are used, correlate the data into related consistent groupings.
2. Binder Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS". List title of Project, identity of separate structure as applicable, and identity of general subject matter covered in the manual.

E. Content of Manual: Neatly typewritten table of contents for each volume, arranged in systematic order, indicating Contractor name and address, and a list of each product, indexed to content of the volume. Provide a separate list with each product, name, address, and telephone number of subcontractor or installer, and local source of supply for parts and replacement.

1. Provide in each volume a copy of each warranty, bond, and service contract issued.

F. Submittal of Maintenance and Operating Manual: Submit two copies of preliminary draft of proposed formats and outlines of contents prior to start of Work.

1. Architect will review draft and return one copy with comments.
2. Submit one copy of complete data in final form 15 days prior to final inspection or acceptance. Copy will be returned after final inspection or acceptance, with comments.
3. Submit three copies of approved data in final form ten days after final inspection or acceptance.

1.8 INSTRUCTION OF OWNER'S PERSONNEL

A. Prior to final inspection or acceptance, fully instruct Owner's designated operating and maintenance personnel in the operation, adjustment and maintenance of products, equipment and systems.

B. Operating and maintenance manual shall constitute the basis of instruction.

1. Review contents of manual with personnel in full detail to explain all aspects of operation and maintenance.

1.9 WARRANTIES AND BONDS

A. General: Assemble warranties, bonds, and service and maintenance contracts, executed by each of the respective manufacturers, suppliers, and subcontractors into the Project Closeout Manual.

B. Refer to Section 017400 – Warranties and Bonds for additional requirements.

1.10 FINAL CLEANING

A. General: General cleaning during construction operations is specified as Work of Section 015000 – Temporary Facilities & Controls.

B. Employ experienced workers or professional cleaners for Final Cleaning. Clean each surface to the condition expected in a normal building cleaning and maintenance program. Comply with manufacturer's instructions and recommendations.

PART 2 - PRODUCTS

2.1 CLEANING MATERIALS

A. General: Provide cleaning materials that will not create hazards to health nor property, and will not damage surfaces or finishes.
B. Use cleaning materials and methods recommended by manufacturer of surface to be cleaned.
C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. Employ skilled workers for final cleaning.

B. Clean and restore general work areas and adjoining surfaces and other work soiled or damaged during installation; replace work damaged beyond successful restoration. Where performance of subsequent work could result in damage to complete unit or element, provide protective covering and other provisions to minimize potential for damage.

C. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from sight-exposed interior and exterior surfaces.

D. Special Cleaning for Windows: New glass installed as part of this project shall be thoroughly cleaned inside and out by professional window cleaners at the conclusion of all other work and prior substantial completion. All damaged, broken, or scratched items shall be replaced without costs to Owner, as described under the appropriate Trade Section(s).

E. Complete the following cleaning operations prior to requesting inspection for Certification of Substantial Completion:

1. Concrete and masonry shall be cleaned free of all foreign matter. If, in opinion of the Architect, further cleaning of specific areas is required they shall be scrubbed with water or other cleaning agents. Acid cleaners shall not be used, except as may otherwise specifically be permitted in the trade sections.
2. Metal surfaces, hardware, fixtures, appliances, equipment, and similar items shall be cleaned free of all foreign matter and, if necessary, shall be lightly scrubbed at specific stains with clean water, mild soap, and soft rags, thoroughly rinsed and wiped with clean, soft white rags. Abrasive cleaners shall not be used.
3. Architectural woodwork shall be thoroughly dusted and cleaned of all stains, spots, etc., using methods and cleaning agents, which will not damage the various finishes.
4. Ceramic tile, porcelain, and other surfaces with integral finishes, shall be washed with clean water, mild soap and soft rags, thoroughly rinsed, and then wiped with clean, soft white rags. Abrasive cleaners shall not be used.
5. Resilient flooring shall be given final cleaning and buffing.
6. Carpeting shall be vacuum cleaned and shall have all spots and stains removed.
7. Painted surfaces shall be cleaned free of all foreign matter, and if necessary, shall be lightly scrubbed at specific stains with clean water, mild soap, and soft rags, thoroughly rinsed, and wiped with clean, soft white rags.
8. All advertising matter and temporary instructional material shall be removed from exposed surfaces throughout.
9. Remove labels that are not permanent.
10. Clean interior and exterior finishes to a clean, dust-free condition. Remove stains, films, and similar foreign substances.
11. Vacuum and mop hard floor surfaces.
12. Clean plumbing fixtures to a sanitary condition.
13. Clean site areas of rubbish, litter, and other foreign substances.
14. Sweep paved areas broom clean; rake ground surfaces clean.

F. Before final completion and Owner-occupancy, inspect sight-exposed interior and exterior surfaces and work areas to verify that Work is clean.

END OF SECTION

SECTION 02 0800

MERCURY FLOOR 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.

1.02 DEFINITIONS

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

"Site": Refers to McGrath Elementary School located Worcester, Massachusetts as described by the Contract Documents and Drawings.

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

"Architect": Refers to Habeeb & Associates Architects, 100 Grove Street, Suite 303, 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 flooring replacement as outlined by the Contract Documents.

"Abatement Contractor": Refers to the Contractor who is performing removal and disposal of the mercury flooring as outlined by this Section.

1.03 GENERAL REQUIREMENTS/QUALIFICATIONS

A. All abatement work referenced herein shall be performed in accordance with a Health and Safety Plan (HASP) developed by the Abatement Contractor in accordance with Occupational Safety and Health Administration (OSHA) regulations, including HAZWOPER or other approved equal standard, and any other applicable federal, state, or local regulations. All workers handling mercury-containing materials on-Site will be 40-hour HAZWOPER trained or other approved training.

B. The 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. Each project shall have been completed in good standing and the work performed by the 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 Abatement Contractor.

1. The Owner, Architect or Consultant shall also reserve the right to research and utilized other information received from any other projects completed by the 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 Abatement Contractor based upon this review, for any reason, if found to be in the best interest of the Owner.

NOTE: The 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. This section details all areas where the mercury-containing resilient flooring will be removed and disposed and lists areas requiring special protection during the abatement work. The Abatement Contractor shall furnish all labor, materials, services, training, insurance, and equipment as needed to complete removal of the mercury-containing resilient flooring and associated materials as specified herein. The Abatement Contractor shall follow all Federal, State and local ordinances, regulations and rules pertaining to removal, storage, transportation and disposal of the mercury-containing resilient flooring and associated materials.

B. The Abatement Contractor shall be responsible for verifying all quantity estimates in preparation of their bids, including the location and conditions of all flooring materials to be abated under the contract. No additional compensation and/or contract time shall be granted to the 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 abatement of the mercury-containing resilient flooring at the site. If a specific note for an abatement procedure or requirement is not mentioned herein, the Abatement Contractor shall perform the removal of such material in accordance with local, state and federal regulations. The Abatement Contractor shall also coordinate all work with the General Contractor.

1. The 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.

2. The Abatement Contractor shall be responsible for all demolition work required in order to access all flooring materials for abatement. All demolition debris shall be disposed of mercury containing waste, unless otherwise determined by the Consultant.

3. Coordination shall exist between the abatement under this Section and the disconnection of existing electrical, plumbing, HVAC or fire suppression equipment within the site by the General Contractor.

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

5. The following requirements shall be applicable for abatement of the mercury-containing resilient flooring at the site:

- Removal shall include all resilient flooring, adhesives, grout, levelastic, etc. down to the exposed concrete as per the Drawings.
- Removal shall also include the rubber wall base, flooring transition strips and aluminum thresholds.

- Additionally, the existing concrete floor substrate shall be scarified to a depth of 1 inch across the entire floor surface areas.
- All removed materials shall be properly packaged and transported for disposal as hazardous waste in accordance with local, state and federal regulations.

6. The Abatement Contractor shall be required to provide a Work Plan that details the means and methods for removal of the mercury-containing flooring and associated materials identified herein in accordance with this Section and local, state and federal regulations. The Work Plan shall include at a minimum:

   - Detailed description of work activities.
   - Description of engineering controls and procedures used to minimize exposure to mercury vapor and to mitigate migration of dusts, wash water and contaminants generated by work outlined in this Section.
   - Proposed methods of waste storage, disposal, and transportation.
   - Name(s), address(es), and contact(s) of waste transporter(s) that transport hazardous waste from the Site to a licensed disposal facility, including EPA identification number and proof of permit, license, or authorization to transport all such waste in all affected states.
   - Name(s), address(es), and contact(s) of proposed disposal facility(ies), and a letter of acceptance indicating that the facility will accept removed materials associated with the work outlined in this Section.
   - Health and Safety Plan (HASP): Developed in accordance with Occupational Safety and Health Administration (OSHA) regulations, including HAZWOPER, and any other applicable federal, state, or local regulations.
   - Waste Profile – Mercury Hazardous Waste: All waste profiles, applications and questionnaires shall be provided to the Architect prior to the start of the work. **The Waste Profiles must be approved and signed off by the Owner prior to generating any waste materials on-site.** Once approved, the Abatement Contractor shall provide a copy of the Waste Manifest and/or Waste Shipment Record to be used for shipment of the waste from the site to the disposal facility.

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

1.05 SUBMITTALS

A. Refer to Part 1.04, C, 7 for a list of items to be submitted for review and approval by the Architect on/or before the Pre-Construction Meeting:

B. The following submittals are required for final payment:

1. Copies of hazardous waste manifests showing proper disposal of the mercury-containing materials, signed by the landfill.

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 Abatement Contractor shall at his own cost and expense comply with all laws, ordinances, rules and regulations of Federal, State, Regional and Local Authorities. 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 Abatement Contractor's responsibility to know, understand, and abide by all such regulations and common practices.

1.07 FEES, PERMITS & LICENSES

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

B. Abatement Contractor shall be responsible for costs for all licensing requirements, where applicable and notification requirements and all other fees related to the 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, 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 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 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 General Contractor, 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 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 abatement activities in the phases of the final schedule agreed upon by the General Contractor, Owner and Architect.

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 Abatement Contractor. It is the intent of these documents to allow the 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. 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, 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 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 Abatement Contractor from full responsibility for the work.

1.11 SITE SECURITY

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

B. The 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 removal as required by OSHA. Solid barriers (i.e. plywood) will be required to be installed to segregate public access points from the containment areas.

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 back ground air sampling 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 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.

1.13 TEMPORARY 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 Abatement Contractor shall comply with local, state and federal regulations pertaining to the selection and use of materials and equipment on this project. The 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. 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 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.

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.

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. Walls will be masked and sealed with two layers of six mil polyethylene sheeting with the bottom edge sealed to the floor. Ceilings shall be sealed with two (2) layers of four mil polyethylene sheeting.

b. The two separate layers of six-mil polyethylene sheeting on walls and two separate layers of six-mil polyethylene sheeting on the ceiling 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: The Abatement Contractor is responsible for personal air sampling as outlined in the OSHA Regulations.

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 Abatement Contractor shall construct a decontamination consisting of a 3 chambers (i.e. clean room, shower, dirty room) in the same manner as an asbestos abatement project.

F. Negative Air Filtration: The Abatement Contractor shall establish negative pressure air filtration within the work areas. The Abatement 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. **NAFU’s shall have HEPA filters in series as well as charcoal filters to remove dust and mercury vapors**.

G. Removals: Removal of the rubber gym flooring and associated materials 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. Rubber flooring, concrete and associated materials 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.

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. A certificate of visual inspection will be signed by the Project Monitor and the Site Supervisor after final inspection clearance.

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.

3.02 DISPOSAL

A. All costs associated with removal and proper disposal of the mercury-containing resilient flooring and associated materials shall be the responsibility of the Abatement Contractor under the Contract.

B. All testing required by the waste transporter and/or disposal facility to profile the materials for acceptance shall be the responsibility of the Abatement Contractor. All costs associated with sample collection, analysis and interpretation of the results shall be borne by the Abatement Contractor under the Contract. All analytical results shall be provided to the Consultant for review and approval.

C. **NO WASTE SHALL LEAVE THE SITE UNLESS AUTHORIZED BY THE OWNER**.

D. There is one (1) waste stream to be generated on this project.

(1) **Mercury - Hazardous Waste** – Includes resilient flooring, concrete, flooring transition strips, rubber wall base, aluminum threshold, PPE, polyethylene sheeting, rags, waste water, vacuum dust, HEPA filters, disposable tools, etc. used in the abatement project.

Note: Analytical results for the resilient flooring indicated mercury to be present up to 2,300 parts per million (ppm).

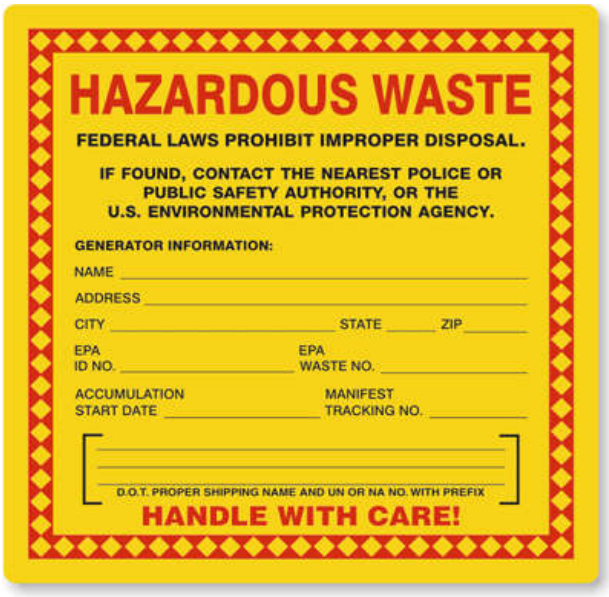
E. The following outlines the requirements for transportation and disposal of the waste stream on this project:

1. General requirements:

a. All waste packaged material shall be affixed with Hazardous Waste Labels in accordance with EPA Resource Conservation and Recovery Act (RCRA) and MADEP 310 CMR 30.000 Regulations.
b. All waste items shall be disposed of in accordance with state and federal regulations at a licensed waste facility.

Note: The proposed waste disposal site and Waste Profile to be used on this project shall be provided to the Owner for review and approval. The Owner reserves the right to approve or reject any proposed facility if it is found to be in the best interest of the Owner. If a site is rejected by the Owner, the Abatement Contractor shall not be compensated for any costs for changing waste disposal sites.

2. All waste containers shall be placed in a designated storage area on site that is secured and within a chained link fence that is locked. Any drums, Gaylord boxes, etc. shall be placed inside an enclosed trailer or other storage container that is locked and within the chained link fence area. The waste containers, drums or boxes will be placarded as containing mercury hazardous waste in accordance with EPA and MADEP Regulations. This shall include the yellow hazardous waste label on all 4 sides of the containers, drum or box.



Note: As part of the Contract, all waste that is containerized shall be shipped from the site within 30 days from the start date of filling that specific dumpster, drum or trailer. If the 30 day time period is exceeded, the Owner may take possession of the waste and ship it off-site for disposal. However, the Abatement Contractor shall still be responsible for all costs associated with removal of the waste from the site for final disposal at a licensed waste landfill. All such costs associated with removal and disposal of the waste shall then be deducted from the General Contractor's Contract.

3. Additionally, all waste containers shall be closed-top to prevent any water from infiltrating the container and be lined with two (2) layers of 6 mil polyethylene sheeting.

4. Manifests: A Waste Manifest is required for the removal from the premises, and disposal of all items included in this Section. The Abatement Contractor shall be required to complete a WASTE PROFILE for each type of material to be disposed of and provide a copy to the Owner for review and approval prior to the start of the project. NO WASTE SHALL LEAVE THE SITE UNLESS THE WASTE PROFILE HAS BEEN APPROVED BY THE OWNER.

   - Each manifest shall note the truck registration number, state of registration, name of driver, type of waste, quantity of waste and date of removal of material from the site.

- The Abatement Contractor shall comply with the RCRA Hazardous Waste Manifest policies (as required by MADEP hazardous waste regulations 310 CMR 30.000) and is responsible for utilizing the Owner's provided EPA Identification Number for the site.
- The Owner will be designated as generator and will sign all manifests and waste profile applications or questionnaires.

  Note: A copy of the completed draft Waste Manifests to be used (excluding the quantity of waste and signatures) shall be provided to the Owner for review and approval 48 hours prior to the waste being picked up at the site.

3.04 QUALITY CONTROL AND TESTING

A. The Consultant will perform background air sampling for mercury vapors during the abatement work utilizing a JEROME J405 Mercury Vapor Analyzer. Target level shall mercury airborne concentration less than 300 nanograms per cubic meter of air (mg/m3).

B. The Abatement Contractor shall be responsible for achieving acceptable visual and final air clearance testing for the abatement area as follows:

- Clearance inspection: The Consultant's 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: The Consultant shall perform a final air test within the containment area prior to allowing the containment to be torn down. Samples shall be collected utilizing low flow air sampling pumps and transported to the laboratory under chain-of-custody protocol for mercury analysis in accordance with NIOSH Method 6009. Clearance standard shall be maximum contaminant level of less than 0.8 micrograms per cubic meter (ug/m3).

Notes:

1. **Should background air sample results indicate concentrations greater than 300 nanograms per cubic meter of air (mg.m3), all work shall stop and the work practices and engineering controls reviewed by ATLAS and Site Supervisor prior to continuing further work.**

2. **If the post abatement results exceed 0.8 micrograms per cubic meter or the visual inspection fails, the Abatement Contractor shall reclean the entire work at no additional cost to Owner, utilizing the methods specified in this section. The cost of additional testing and inspection shall be paid by the 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

SUMMARY OF MERCURY FLOORING TO BE ABATED

TABLE 1.0
SUMMARY OF MERCURY FLOORING TO BE ABATED

NO	LOCATION	MATERIAL	QUANTITY	NOTES
1	Gymnasium	Resilient Flooring	Refer to Drawings	• Includes removal of all resilient flooring and associated materials as specified herein and the Drawings. • Includes scarifying the concrete 1" in depth.
2	Cafeteria	Resilient Flooring	Refer to Drawings	• Includes removal of all resilient flooring and associated materials as specified herein and the Drawings. Includes scarifying the concrete 1" in depth.
3	Storage 25A	Resilient Flooring	Refer to Drawings	• Includes removal of all resilient flooring and associated materials as specified herein and the Drawings. Includes scarifying the concrete 1" in depth.

Worcester Public Schools
Worcester, MA

January 17, 2024

SECTION 02 4100

DEMOLITION

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Attention is directed to the Contract and General Conditions and all Sections within Division 01 – General Requirements, which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

A. Work Included:

1. Demolition and removal of selected portions of buildings and structures and as required for new work. Refer to the Drawings for additional requirements.

2. Salvage of existing items to be reused or turned over to the facility.

3. Removal and legal disposal of demolished materials off site. Except those items specifically designated to be relocated, reused, or turned over to the facility, all existing removed materials, items, trash and debris shall become property of the Contractor and shall be completely removed from the site and legally disposed of at her/his expense. Salvage value belongs to the Contractor. On-site sale of materials is not permitted.

4. Demolition and removal work shall properly prepare for alteration work and new construction to be provided under the Contract.

5. Scheduling and sequencing operations without interrupting utilities serving occupied areas. If interruption is required, obtain written permission from the utility company and the Owner. Schedule interruption when the least amount of inconvenience will result.

B. Alternates: Not Applicable.

C. Items To Be Installed Only: Not Applicable.

D. Items To Be Furnished Only: Not Applicable.

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

1. Section 01 5000 – Temporary Facilities And Controls:
   a. Maintenance of access, cleaning during construction, dust and noise control.

2. Section 02 0800 – Mercury Floor Abatement

1.3 DEFINITIONS

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

B. Remove and Salvage: Detach items from existing construction and deliver them to the Owner ready for reuse, at a location designated by the Owner. Protect from weather until accepted by Owner.

C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated. Protect from weather until reinstallation.

D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

A. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques, antiques, and other items of interest or value to the Owner that may be encountered during selective demolition remain property of the Owner or Owner as applicable. Carefully remove each item or object in a manner to prevent damage and deliver promptly to a location acceptable to the Owner.

1.5 SUBMITTALS

A. Schedule of Selective Demolition Activities: Indicate the following:

1. Detailed sequence of selective demolition and removal work, with early and late starting and finishing dates for each activity. Ensure Owner's on-site operations are uninterrupted if applicable.

2. Interruption of utility services. Indicate how long utility services will be interrupted.

3. Coordination for shutoff, capping, and continuation of utility services.

4. Use of elevator and stairs.

5. Locations of proposed dust- and noise-control temporary partitions and means of egress, including for other occupants affected by selective demolition operations.

6. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

7. Means of protection for items to remain and items in path of waste removal from building.

B. Inventory: After selective demolition is complete, submit a list of items that have been removed and salvaged, and turned over to the Owner.

C. Predemolition Videotapes: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by selective demolition operations. Comply with Division 01. Submit before Work begins.

D. Landfill Records: Provide trip tickets (receipts) indicating receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.6 QUALITY ASSURANCE

A. Examination of Existing Conditions: The Contractor shall examine the Contract Drawings for demolition and removal requirements and provisions for new work. Verify all existing conditions and dimensions before commencing work. The Contractor shall visit the site and examine the existing conditions as he finds them and shall inform herself/himself of the character, extent and type of demolition and removal work to be performed. Submit any questions regarding the extent and character of the demolition and removal work in the manner and within the time period established for receipt of such questions during the bidding period.

B. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

C. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

D. Standards: Comply with ANSI A10.6 and NFPA 241.

E. Predemolition Conference: Conduct conference at Project site to comply with requirements in Section 01 3100 - Project Management and Coordination. Review methods and procedures related to selective demolition including, but not limited to, the following:

1. Inspect and discuss condition of construction to be selectively demolished.

2. Review structural load limitations of existing structure.

3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.

4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.

5. Review areas where existing construction is to remain and requires protection.

1.7 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.

E. Survey of Existing Conditions: Record existing conditions by use of preconstruction videotapes.

1. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

F. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 PREPARATION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Comply with requirements for access and protection specified in Section 01 5000 – Temporary Facilities and Controls.

2. Maintain adequate passage to and from all exits at all times. Before any work is done which significantly alters access or egress patterns, consult with the Architect and obtain approval of code required egress. Under no condition block or interfere with the free flow of people at legally required exits, or in any way alter the required condition of such exits.

B. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around demolition area(s).

1. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction. Provide temporary barricades as required to limit access to demolition areas.

2. Protect existing site improvements, appurtenances, and landscaping to remain.

3.3 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.

2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.

3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.

4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during and after flame-cutting operations.

5. Maintain adequate ventilation when using cutting torches.

6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.

7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.

8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

9. Dispose of demolished items and materials promptly.

B. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.

2. Pack or crate items after cleaning and repairing. Identify contents of containers.

3. Protect items from damage during transport and storage.

4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

D. Items for Re-use and Preservation of Existing Surfaces to Remain:

1. The Contractor shall inspect closely each item specifically designated to be relocated, re-used, or turned over to the Owner prior to its removal, and immediately report damages and defects to the Architect and the Owner. The Contractor shall be responsible for any subsequent damage to the same other than latent defects not readily apparent from close inspection, and shall bear responsibility for its repair or same replacement as directed by the Architect, to the satisfaction of the Owner.

2. Unless special surface preparation is specified under other Specification Sections, leave existing surfaces that are to remain in a condition suitable to receive new materials and/or finishes.

3.4 PROTECTION OF PUBLIC AND PROPERTY

A. Provide all measures required by federal, state and municipal laws, regulations, and ordinances for the protection of surrounding property, the public, workmen, and the Owner’s employees during all demolition and removal operations. Measures are to be taken, but not limited to installation of sidewalks, sheds, barricades, fences, warning lights and signs, trash chutes and temporary lighting.

B. Protect all walks, roads, streets, curbs, pavements, trees and plantings, on and off premises, and bear all costs for correcting such damage as directed by the Architect, and to the satisfaction of the Owner.

C. Demolition shall be performed in such a manner that will insure the safety of adjacent property. Protect adjacent property from damage and protect persons occupying adjacent property from injuries which might occur from falling debris or other cause and so as not to cause interference with the use of other portions of the building, of adjacent buildings or the free access and safe passage to and from the same.

D. Every precaution shall be taken to protect against movement or settlement of the building, of adjacent buildings, structures, sidewalks, roads, streets, curbs and pavements. Provide and place at the Contractor’s own expense, all necessary bracing and shoring in connection with demolition and removal work.

E. Remove portions of structures with care by using tools and methods that will not transfer heavy shocks to existing and adjacent building structures, both internal and external of the particular work area.

F. Provide and maintain in proper condition, suitable fire resistive dust barriers around areas where interior demolition and removal work is in progress. Dust barriers shall prevent the dust migration to adjacent areas. Remove dust barriers upon completion of major demolition and removal in the particular work area.

G. Protect unaltered portions of existing construction, including finishes, furnishings and equipment

H. Provide secure weather protection where demolition has removed a portion of the exterior envelope.

3.5 DISCOVERY OF HAZARDOUS MATERIALS

A. If hazardous materials, such as chemicals, asbestos-containing materials, or other hazardous materials are discovered during the course of the work, cease work in affected area only and immediately notify the Architect and the Owner of such discovery. Do not proceed with work in such areas until instructions are issued by the Architect. Continue work in other areas.

B. If unmarked containers are discovered during the course of the work, cease work in the affected area only and immediately notify the Architect and the Owner of such discovery. Do not proceed with work in such areas until instructions are issued by the Architect. Take immediate precautions to prohibit endangering the containers integrity. Continue work in other areas.

3.6 CUTTING

A. Perform all cutting of existing surfaces in a manner which will ensure a minimal difference between the cut area and new materials when patched. Use extreme care when cutting existing surfaces containing concealed utility lines which are indicated to remain and bear full responsibility for repairing or replacement of all such utilities that are accidentally damaged.

B. Provide a flush saw cut edge where pavement, curb and concrete removals abut new construction work or existing surfaces to remain undisturbed.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Comply with the following.

1. Do not allow demolished materials to accumulate on-site.

2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

B. Burning: Do not burn demolished materials.

3.8 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Premises shall be left in a clean condition and ready to accept alteration work and new construction.

END OF SECTION

SECTION 03 5300

CONCRETE FLOOR TOPPING

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Attention is directed to the Contract and General Conditions and all Sections within Division 01 – General Requirements which are hereby made a part of this Section of the Specifications.

1.2 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. Self-leveling concrete floor topping.

B. Alternates: Not Applicable.

C. Items To Be Installed Only: Not Applicable.

D. Items To Be Furnished Only: Not Applicable.

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

1. Section 09 6566 – Resilient Athletic Flooring for sheet flooring moisture requirements.

1.3 SUBMITTALS

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

B. Field quality-control test reports.

C. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for concrete floor toppings.

D. Minutes of preinstallation conference.

1.4 QUALITY ASSURANCE

A. Testing Agency Qualifications: An independent agency qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.

B. Mockups: Place concrete floor topping mockups to demonstrate typical joints, surface finish, bonding, texture, tolerances, and standard of workmanship.

1. Build mockups approximately 100 sq. ft. in the location indicated or, if not indicated, as directed by Designer.

2. If Designer determines that mockups do not meet requirements, demolish and remove them from the site and cast others until mockups are approved.

3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

C. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original packages and containers, with seals unbroken, bearing manufacturer's labels indicating brand name and directions for storage, mixing with other components, and application.

B. Store materials to comply with manufacturer's written instructions to prevent deterioration from moisture or other detrimental effects.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Comply with manufacturer's written instructions for substrate temperature and moisture content, ambient temperature and humidity, ventilation, and other conditions affecting concrete floor topping performance.

1. Place concrete floor topping only when ambient temperature and temperature of base slabs are between 50 and 86 degrees F.

B. Close areas to traffic during topping application and, after application, for time period recommended in writing by manufacturer.

PART 2 - PRODUCTS

2.1 HYDRAULIC-CEMENT-BASED TOPPING

A. Topping: Hydraulic-cement-based, polymer-modified, self-leveling product complying with ASTM C 387. that can be applied in minimum uniform thicknesses of 1/8 inch and that can be feathered at edges to match adjacent floor elevations.

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
   a. Ardex; SD-T Self-Leveling Concrete Topping.
   b. BASF Building Systems; Thoro Underlayment, Self-Leveling.
   c. USG; Levelrock SLC 200 Floor Underlayment.
   d. Or equal.

2. Cement Binder: ASTM C 150, portland cement, or hydraulic or blended hydraulic cement as defined by ASTM C 219.

3. Compressive Strength: Not less than 5500 psi at 28 days when tested according to ASTM C 109/C 109M.

4. Underlayment Additive: Resilient-emulsion product of underlayment manufacturer formulated for use with underlayment when applied to substrate and conditions indicated.

B. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch; or coarse sand as recommended by underlayment manufacturer.

1. Provide aggregate when recommended in writing by underlayment manufacturer for underlayment thickness required.

C. Water: Potable and at a temperature of not more than 70 degrees F.

D. Reinforcement: For underlayment applied to wood substrates, provide galvanized metal lath or other corrosion-resistant reinforcement recommended in writing by underlayment manufacturer.

E. Primer: Product of underlayment manufacturer recommended in writing for substrate, conditions, and application indicated.

F. Corrosion-Resistant Coating: Recommended in writing by underlayment manufacturer for metal substrates.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for conditions affecting performance of concrete floor topping.

B. Verify that base concrete slabs comply with scratch finish requirements specified in Section 03 3000 – Cast-In-Place Concrete.

C. Verify that base slabs are visibly dry and free of moisture. Test for capillary moisture by the plastic sheet method according to ASTM D 4263.

D. Proceed with application only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION - GENERAL

A. At the start of the installation and periodically as work progresses, provide the services of the manufacturer's technical representative at the job site as often as deemed necessary by the manufacturer to advise on all phases of this Work.

B. Install the system in accordance with manufacturer's published instructions, except where more stringent requirements are specified.

3.3 PREPARATION

A. Existing Concrete: Remove existing surface treatments and deteriorated and unsound concrete. Mechanically abrade base slabs to produce a heavily scarified surface profile with an amplitude of 1/4 inch.

1. Prepare and clean existing base slabs according to concrete floor topping manufacturer's written instructions. Fill voids, cracks, and cavities in base slabs.

2. Mechanically remove contaminants from existing concrete that might impair bond of floor topping.

3. Saw cut contraction and construction joints in existing concrete to a depth of 1/2 inch and fill with semirigid joint filler.

B. Fill non-moving cracks and joints as recommended by the concrete underlayment materials manufacturer.

C. Concrete Underlayment Over Concrete Slab: Prime porous surfaces of 11% (minimum) absorption with primer. Comply with underlayment concrete manufacturer's recommendations.

3.4 INSTALLATION

A. Mix materials by methods and in proportions recommended by manufacturer.

B. Maximum depth of concrete underlayment shall be 2 in. Minimum depth shall be 1/4 in. Add aggregates as recommended by manufacturer for underlayment depth over 1 in.

C. Install control joints following manufacturer's recommendations in locations indicated on the Drawings.

D. Allow underlayment to cure properly. Block off traffic and protect floor underlayment from physical damage during curing.

3.5 PROTECTING AND CURING

A. General: Protect freshly placed concrete floor topping from premature drying and excessive cold or hot temperatures.

B. Evaporation Retarder: Apply evaporation retarder to concrete floor topping surfaces in hot, dry, or windy conditions before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying floor topping, but before float finishing.

C. Begin curing immediately after finishing concrete floor topping. Cure by according to concrete floor topping manufacturer's written instructions:

3.6 JOINT FILLING

A. Prepare and clean contraction joints and install semirigid joint filler, according to manufacturer's written instructions, once topping has fully cured.

B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.

C. Install semirigid joint filler full depth of contraction joints. Overfill joint and trim semirigid joint filler flush with top of joint after hardening.

3.7 REPAIRS

A. Defective Topping: Repair and patch defective concrete floor topping areas, including areas that have not bonded to concrete substrate.

3.8 FIELD QUALITY CONTROL

A. Independent Testing Agency: Cooperate with the Independent Testing Agency engaged by the Owner for field quality control activities for the Work of this Section. Refer also to Section 01 4325 – Testing Agency Services.

B. Cooperate with field quality control personnel. Allow inspectors access to scaffolding and work areas, as needed to perform inspections.

C. Additional inspections and retesting of materials which fail to comply with specified material and installation requirements shall be performed at Contractor's expense.

D. Testing Services: Testing and inspecting of completed applications of concrete floor toppings shall take place in successive stages, in areas of extent and using methods as follows:

1. Sample Sets: At point of placement, a set of 3 molded-cube samples shall be taken from the topping mix for the first 1000 sq. ft., plus 1 set of samples for each subsequent 5000 sq. ft. of topping, or fraction thereof, but not less than 6 samples for each day's placement. Samples shall be tested according to ASTM C 109 for compliance with compressive-strength requirements.

2. Concrete floor topping shall be tested for delamination by dragging a steel chain over the surface.

3. Concrete floor topping shall be tested for compliance with surface flatness and levelness tolerances.

E. Remove and replace applications of concrete floor topping where test results indicate that it does not comply with specified requirements.

F. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

END OF SECTION

SECTION 07 9200

JOINT SEALANTS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Attention is directed to the Contract And General Conditions and all Sections within Division 01 – General Requirements which are hereby made a part of this Section of the Specifications.

1.2 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. Joint sealants and fillers.

B. Alternates: Not Applicable.

C. Items To Be Installed Only: Not Applicable.

D. Items To Be Furnished Only: Not Applicable.

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

1. Section 08 7100 – Door Hardware for sealing exterior thresholds.

1.3 PERFORMANCE REQUIREMENTS

A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.

B. Provide joint sealants for interior applications that establish and maintain airtight and water-resistant continuous joint seals without staining or deteriorating joint substrates.

C. Install sealant joints such that the sealant develops adhesion with the substrate on two sides. The sealant shall not have three-sided adhesion at any joint location.

1.4 SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Samples for Verification: For each type and color of joint sealant required, provide Samples with joint sealants in 1/2-inch- wide joints formed between two 6-inch- long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

C. Qualification Data: For Installer.

D. Preconstruction Field Test Reports: Indicate which sealants and joint preparation methods resulted in optimum adhesion to joint substrates based on preconstruction testing specified in "Quality Assurance" Article.

E. Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:

1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.

2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.

F. Field Test Report Log: For each elastomeric sealant application.

G. Product Test Reports: Based on comprehensive testing of product formulations performed by a qualified testing agency, indicating that sealants comply with requirements.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized Installer who is approved or licensed for installation of elastomeric sealants required for this Project.

B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.

C. Preconstruction Compatibility and Adhesion Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.

1. Use manufacturer's standard test method to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
   a. Adhesion Testing: Use ASTM C 794 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
   b. Compatibility Testing: Use ASTM C 1087 to determine sealant compatibility when in contact with joint sealant backing and glazing and gasket materials.

2. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.

3. For materials failing tests, obtain joint-sealant manufacturer's written instructions for corrective measures including use of specially formulated primers.

4. Testing will not be required if joint-sealant manufacturers submit joint preparation data that are based on recent previous testing of current sealant products for adhesion to, and compatibility with, joint substrates and other materials matching those submitted.

D. Preconstruction Field-Adhesion Testing: Before installing elastomeric sealants, field test their adhesion to Project joint substrates as follows:

1. Locate test joints where indicated on Project or, if not indicated, as directed by Designer.

2. Conduct field tests for each application indicated below:
   a. Each type of elastomeric sealant and joint substrate indicated.
   b. Each type of nonelastomeric sealant and joint substrate indicated.

3. Notify Designer seven days in advance of dates and times when test joints will be erected.
   a. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193.
      1) For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.

4. Report whether sealant in joint connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each type of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.

5. Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.

E. Provide joint tolerances in accordance with the manufacturer's written instructions.

F. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01.

1.6 PROJECT CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 degrees F

2. When joint substrates are wet.

3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.

4. Contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.7 WARRANTY

A. Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Two 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.

B. Special Manufacturer's Warranty: Manufacturer's standard form in which elastomeric sealant manufacturer agrees to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Five 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.

C. Special warranties specified in this Article exclude deterioration or failure of elastomeric joint sealants from the following:

1. Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression caused by structural settlement or errors attributable to design or construction.

2. Disintegration of joint substrates from natural causes exceeding design specifications.

3. Mechanical damage caused by individuals, tools, or other outside agents.

4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.

B. Colors of Exposed Joint Sealants: As indicated by manufacturer's designations.

2.2 JOINT SEALANTS

A. Elastomeric Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

B. Stain-Test-Response Characteristics: Elastomeric sealants shall be nonstaining to porous substrates. Provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

C. Single-Component Neutral-Curing Silicone Sealant:

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
   a. Dow Corning Corporation; 790.
   b. GE Silicones; SilPruf LM SCS2700.
   c. Bondaflex Technologies Sil 290
   d. Pecora Corporation; 864.
   e. Tremco Inc.; Spectrem 1.
   f. Or equal.

2. Extent of Use: Joints in exterior vertical, horizontal and soffit surfaces.

2.3 JOINT-SEALANT BACKING

A. Sealant Backing Material, General: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C 1330, Type B (bicellular material with a surface skin) or other type, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at the back or the base of the joint, where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.4 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.

2. Remove loose mill scale from steel surfaces by sandblasting, or scraping and wire brushing where sandblasting is impractical. Remove protective coatings from the steel surface and residue on the steel.

3. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include concrete, masonry and unglazed surfaces of ceramic tile.

4. Remove laitance and form-release agents from concrete.

5. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following metal, glass, porcelain enamel and glazed surfaces of ceramic tile.

B. Joint Priming: Prime joint substrates, where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of joint primer or sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.

2. Do not stretch, twist, puncture, or tear sealant backings.

3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

D. Install bond-breaker tape to surfaces not intended to bond with the sealant in accordance with the manufacturer’s recommendation.

E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.

2. Completely fill recesses in each joint configuration.

3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

4. Provide sealant joints with minimum depth and width of 1/4 inch, and an appropriate depth to width ratio for the given application.

F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.

2. Use tooling agents that are approved in writing by sealant manufacturer and that do not damage or discolor sealants or adjacent surfaces.

3. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.

3.4 FIELD QUALITY CONTROL

A. Independent Testing Agency: Cooperate with the Independent Testing Agency engaged by the Owner for field quality control activities for the Work of this Section. Refer also to Section 01 4325 - TESTING AGENCY SERVICES.

B. Cooperate with field quality control personnel. Allow inspectors access to scaffolding and work areas, as needed to perform inspections.

C. Additional inspections and retesting of materials which fail to comply with specified material and installation requirements shall be performed at Contractor's expense.

3.5 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

B. If sealant is accidentally applied to masonry or other porous surfaces in the vicinity of the work, remove with solvent in accordance with the manufacturer's written instructions. For excess sealant installed on masonry and other porous surfaces at the joint, allow sealant to cure for 24 hours and remove by wire brushing or sanding. Remove any debris resulting from this process. For excess sealant installed on metal and other non-porous surfaces, remove the excess sealant with a solvent moistened cloth and remove solvent residue in accordance with the manufacturer's recommendations.

3.6 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration, damage or discoloration at time of Substantial Completion. If, despite such protection, damage, discoloration or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION

SECTION 08 7100

DOOR HARDWARE

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Attention is directed to the Contract and General Conditions and all Sections within Division 01 – General Requirements which are hereby made a part of this Section of the Specifications.

1.2 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. Commercial door hardware.

B. Items To Be Installed Only: Not Applicable.

C. Items To Be Furnished Only: Not Applicable.

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

1. Section 09 6566 – Resilient Athletic Flooring

2. Section 07 9200 – Joint Sealants

1.3 SUBMITTALS

A. Product Data: Include installation details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."

2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening.
   a. Organize door hardware sets in same order as in the Door Hardware Schedule at the end of Part 3.

3. Content: Include the following information:
   a. Type, style, function, size, label, hand, and finish of each door hardware item.
   b. Manufacturer of each item.
   c. Fastenings and other pertinent information.
   d. Location of each door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
   e. Explanation of abbreviations, symbols, and codes contained in schedule.
   f. Mounting locations for door hardware.
   g. Door and frame sizes and materials.

4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of

other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

C. Qualification Data: For firms and persons specified in "Quality Assurance" Article.

1. Include lists of completed projects with project names and addresses of architects and owners, and other information specified.

D. Maintenance Data: For each type of door hardware to include in maintenance manuals specified in Division 01.

E. Warranties: Special warranties specified in this Section.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

B. Supplier Qualifications: Door hardware supplier with warehousing facilities in Project's vicinity and who is or employs a qualified Architectural Hardware Consultant, available during the course of the Work to consult with Contractor, Designer, and the Owner about door hardware and keying.

C. Architectural Hardware Consultant Qualifications: A person who is currently certified by the Door and Hardware Institute as an Architectural Hardware Consultant and who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project.

D. Source Limitations: Obtain each type and variety of door hardware from a single manufacturer, unless otherwise indicated.

E. Regulatory Requirements: Comply with provisions of the following:

1. Where indicated to comply with accessibility requirements, comply with Massachusetts Architectural Access Board and the Americans with Disabilities Act (ADA), "Accessibility Guidelines for Buildings and Facilities (ADAAG)," as follows:
   a. Thresholds: Not more than 1/2 inch high. Bevel raised thresholds with a slope of not more than 1:2.

2. Requirements of 521 CMR 20.8.1 and NFPA 101: Comply with the following for means of egress doors:
   a. Thresholds: Not more than 1/2 inch high.

F. Fire-Rated Door Assemblies: Provide door hardware for assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing at positive pressure according to NFPA 252.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.

B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

1.6 COORDINATION

A. Coordinate layout and installation of recessed pivots and closers with floor construction. Cast anchoring inserts into concrete.

B. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing door hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

C. Existing Openings: Where hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide proper door operation.

1.7 WARRANTY

A. General Warranty: Special warranties specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Special Warranty: Written warranty, executed by manufacturer agreeing to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period. Failures include, but are not limited to, the following:

1. Structural failures including excessive deflection, cracking, or breakage.

2. Faulty operation of operators and door hardware.

3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

C. Warranty Period: Three 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.

1.8 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for the facility’s continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

A. Scheduled and acceptable manufacturers must provide all the functions and features of the specified product or it will not be approved.

Item	Scheduled Manufacturer	Acceptable Manufacturers
Thresholds & Weatherstrip	National Guard (NGP)	Pemko, Reese

B. Where the hardware specified is not adaptable to the finished shape or size of the members requiring hardware, furnish suitable types having the same operation and quality as the type specified, subject to the Designer's approval.

2.2 MATERIALS

A. Fasteners:

1. Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation.

2. Furnish screws for installation with each hardware item. Finish exposed (exposed under any condition) screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work as closely as possible including "prepared for paint" surfaces to receive painted finish.

3. Provide concealed fasteners for hardware units that are exposed when door is closed except to the extent that no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work unless their use is the only means of reinforcing the work adequately to fasten the hardware securely.

B. Thresholds and Weatherstrip: Furnish as scheduled and per architectural details. Match finish of other items as closely as possible. Provide only those units where resilient or flexible seal strip is easily replaceable and readily available. Provide thermal-break at thresholds at exterior walls.

2.3 FINISHES

A. With the exception of all items listed below, the finish of all hardware shall be US26D - satin chrome or US32D - satin stainless steel. Exceptions are as follows:

1. Thresholds: Mill finish aluminum.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Steel Doors and Frames: Comply with DHI A115 series.

1. Surface-Applied Door Hardware: Drill and tap doors and frames according to SDI 107.

B. Wood Doors: Comply with DHI A115-W series.

C. Where on-site modification of doors and frames is required, prepare hardware locations in accordance with the following:

1. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.

2. Wood Doors: Comply with DHI WDHS.5 "Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors."

3. Where doors are in rated assemblies, comply with NFPA 80 for restrictions on on-site door hardware preparation.

3.3 INSTALLATION

A. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work. Do not install surface-mounted items until finishes have been completed on substrates involved.

1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.

2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

B. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Section 07 9200 – Joint Sealants.

3.4 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

B. Six-Month Adjustment: Approximately six months after date of Substantial Completion, Installer shall perform the following:

1. Examine and readjust each item of door hardware as necessary to ensure function of doors, door hardware, and electrified door hardware.

2. Consult with and instruct the Owner's personnel on recommended maintenance procedures.

3. Replace door hardware items that have deteriorated or failed due to faulty design, materials, or installation of door hardware units.

3.5 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

END OF SECTION

Worcester Public Schools
Worcester, MA

January 17, 2024

SECTION 09 6110

VAPOR MITIGATION AT SLABS

PART 1 - GENERAL

1.1 GENERAL REQUIRMENTS

A. Attention is directed to the Contract And General Conditions and all Sections within Division 01 – General Requirements which are hereby made a part of this Section of the Specifications.

1.2 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 concrete slabs under the following finishes:
   a. Resilient athletic flooring.

2. Cementitious underlayment over floors receiving vapor mitigation.

B. Alternates: Not Applicable.

C. Items To Be Installed Only: Not Applicable.

D. Items To Be Furnished Only: Not Applicable.

E. Related Work: The following items are not included in this Section and are specified under the designated Sections:

1. Section 09 6566 – Resilient Athletic Flooring for resilient athletic flooring moisture requirements.

1.3 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.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of vapor mitigation coatings required for this Project.

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.

1.5 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.

1.6 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.

1.7 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace systems that deteriorate during the specified warranty period.

1. Warranty Period: Ten 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.

PART 2 - PRODUCTS

2.1 MANUFACTURER

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

1. Ardex Engineered Cements; Ardex MC Moisture Control System.

2. Key Resin Company; Epo-Con SL.

3. Koester American Corporation; Koester VAP 1 2000 System.

4. Laticrete International Inc.; Drytek MVB.

5. Or equal.

2.2 MATERIALS

A. General: Use materials of one manufacturer throughout the project as hereinafter specified.

B. Description:

1. Solvent-free, alkali resistant, low viscosity, two- or three-coat epoxy resin system, including primer and sealer coats.

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

C. Performance: Water-based primer/curing agent, 100% solids coating, containing specifically formulated chemicals and resins to provide the following characteristics:

1. ASTM E 96, Water Vapor Transmission (wet methods) Performance shall be documented by an independent testing laboratory at a minimum 90% for water vapor transmission reduction compared to untreated concrete.

2. ASTM D 1308; Insensitivity to alkaline environment up to pH 14.

3. Certify acceptance and exposure to continuous topical water exposure after final cure.

D. Sand (as required): Fins sand less than 1/50 in. in grain size or 98.5% passing sive size #30 or #35.

E. Underlayment (as required): Hydraulic-cement-based, polymer-modified, self-leveling product complying with ASTM C 387, that can be applied in minimum uniform thicknesses of 1/4 inch and that can be feathered at edges to match adjacent floor elevations.

1. Cement Binder: ASTM C 150, portland cement, or hydraulic or blended hydraulic cement as defined by ASTM C 219.

2. Compressive Strength: Not less than 5500 psi at 28 days when tested according to ASTM C 109/C 109M.

3. Underlayment Additive: Resilient-emulsion product of underlayment manufacturer formulated for use with underlayment when applied to substrate and conditions indicated.

F. Water: Potable and at a temperature of not more than 70 degrees F.

2.3 SYSTEM

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

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

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

2.4 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.

PART 3 - EXECUTION

3.1 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.

1. Prepare written report listing conditions detrimental to performance.

2. Verify compatibility with and suitability of substrates.

3. 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.

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

3.2 PREPARATION

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

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

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

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

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.

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

3.3 APPLICATION - VAPOR MITIGATION COATING

A. System Application: Apply as recommended by manufacturer at a rate recommended by manufacturer.

B. Primer: Apply a uniform coat at manufacturer's recommended rate of coverage with a paint roller working the primer into the surface.

C. Systems requiring sand broadcast at primer shall use fine sand spread uniformly over the entire area.

D. Top Coat: Apply a uniform coat at a 90 deg. angle to primer coat at manufacturer's recommended rate of coverage.

E. Systems requiring sand broadcast at top coat shall use fine sand spread uniformly over the entire area.

3.4 APPLICATION - UNDERLAYMENT

A. Preparation: After a minimum of 16 hours, broom sweep and vacuum the surface providing clean, prepared surface.

B. General: Mix and apply underlayment components according to manufacturer's written instructions.

1. Close areas to traffic during underlayment application and for time period after application recommended in writing by manufacturer.

2. Coordinate application of components to provide optimum underlayment-to-substrate and intercoat adhesion.

3. At substrate expansion, isolation, and other moving joints, allow joint of same width to continue through underlayment.

C. Apply underlayment to produce uniform, level surface.

1. Apply a final layer without aggregate to product surface.

2. Applied in minimum uniform thicknesses of 1/4 inch.

3. Feather edges to match adjacent floor elevations.

D. Cure underlayment according to manufacturer's written instructions. Prevent contamination during application and curing processes.

E. Do not install floor coverings over underlayment until after time period recommended in writing by underlayment manufacturer.

F. Remove and replace underlayment areas that evidence lack of bond with substrate, including areas that emit a "hollow" sound when tapped.

3.5 CLEANING

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

3.6 PROTECTION

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

END OF SECTION

SECTION 09 6566

RESILIENT ATHLETIC FLOORING

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Attention is directed to the Contract and General Conditions and all Sections within Division 01 – General Requirements which are hereby made a part of this Section of the Specifications.

1.2 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. Resilient flooring.

2. Resilient wall base and accessories.

3. Substrate preparation for resilient athletic flooring and accessories.

B. Alternates: Not Applicable.

C. Items To Be Installed Only: Not Applicable.

D. Items To Be Furnished Only: Not Applicable.

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

1. Section 03 5300 – Concrete Floor Topping for topping over vapor mitigation system.

2. Section 09 6110 – Vapor Mitigation At Slabs for vapor mitigation, where required prior to finish flooring installation.

1.3 SUBMITTALS

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

B. Samples for Verification:

1. Resilient athletic flooring system: 4”x8”, or Manufacturer’s standard-size sample of flooring system.

2. Resilient athletic flooring sample colors: Submit full line of manufacturer’s standard colors for selections.

3. Line Paint colors: Submit manufacturer’s standard color chart for selections.

4. Resilient Wall Base and Accessories: Manufacturer's standard-size Samples, but not less than 12 inches long, of each resilient product color and pattern required.

5. Resilient Wall Base sample colors: submit full line of manufacturer’s standard colors for selections.

C. Moisture Testing: Document location and type of moisture testing performed prior to installation, and test results.

D. Shop Drawings: Indicate patterns for installation, including locations.

E. Maintenance Data: For resilient athletics flooring products to include in maintenance manuals.

1.4 QUALITY ASSURANCE

A. Manufacturer: Manufacturer must be a recognized sports flooring manufacturer and have been in business for a minimum of ten (10) years.

B. Installer: The installation described in this scope shall be carried out by an experienced synthetic sports flooring installer. The work shall be performed in accordance with the most recent manufacturer instructions. Floor contracting company and field personnel shall be trained by supplier on proper installation and finishing process.

C. Mockups: Install mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. To set quality standards for installation, install mockup of each type of each material.

2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 degrees F or more than 90 degrees F. Store tiles on flat surfaces.

1.6 PROJECT CONDITIONS

A. Maintain temperatures within range recommended by manufacturer, but not less than 70 degrees F or more than 95 degrees F in spaces to receive flooring during the following time periods:

1. 48 hours before installation.

2. During installation.

3. 48 hours after installation.

B. After post installation period, maintain temperatures within range recommended by manufacturer, but not less than 55 degrees F or more than 95 degrees F.

C. Close spaces to traffic during floor covering installation.

D. Close spaces to traffic for 48 hours after floor covering installation.

E. Install resilient products after other finishing operations, including painting, have been completed.

1.7 EXTRA MATERIALS

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

PART 2 - PRODUCTS

2.1 RESILIENT ATHLETIC FLOORING

A. Polyurethane pad and pour 5-component seamless sports flooring system: ASTM F 1344.

1. Robbins.
2. Aacer Sport Flooring.
3. Tarkett Sports.
4. Action Floor Systems.
5. Or equal.

B. Characteristics:

1. Thickness: 6mm min.
2. Adhesive
   a. Two-component polyurethane adhesive.
3. Shock Pad
   a. Granulated rubber/ polyurethane mat 7.mm thick
4. Pad Sealer
   a. Two-component polyurethane sealer
5. Polyurethane Resin
   a. Pigmented two-component polyurethane resin.
6. Coating
   a. Pigmented, two-component water dispersed polyurethane surface coating.
   b. Color: To be selected from Manufacturer’s full line of standard colors.
7. Game line paint
   a. Pigmented two-component polyurethane paint.
   b. Color: To be selected from Manufacturer’s full line of standard colors.

2.2 RESILIENT WALL BASE

A. Wall Base: ASTM F 1861.

1. Armstrong World Industries, Inc.
2. Johnsonite, A Tarkett Company.
3. Sport and Contract Flooring, Mondo Group.
4. Nora Systems.
5. Roppe Corporation.
6. Or equal.

B. Characteristics:

1. Style and Colors: To be selected from Manufacturer’s full line of standard colors.

2. Type (Material Requirement): TS (rubber, vulcanized thermoset) or TP (rubber, thermoplastic).

3. Shape: Coved.

4. Minimum Thickness: 0.125 inch.

5. Height: 4 inches.

6. Lengths: Cut lengths 48 inches long or coils in manufacturer's standard length.

7. Outside Corners: Premolded.

8. Inside Corners: Premolded.

9. Surface: Smooth.

2.3 RESILIENT MOLDING ACCESSORY

A. Types Include the Following As Applicable: nosing for resilient floor covering, reducer and transition strip for resilient floor covering.

1. Burke Mercer Flooring Products

2. Johnsonite

3. Flexco Corporation.

4. Nora Systems.

5. Roppe Corporation.

6. Or equal.

B. Characteristics:

1. Material: Rubber.

2. Profile and Dimensions: As indicated.

2.4 INSTALLATION MATERIALS

A. 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.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances, moisture content, and other conditions affecting performance.

1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.

2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare substrates according to manufacturer's written recommendations to ensure adhesion of resilient products.

B. Concrete Substrates: Prepare according to ASTM F 710.

1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.

2. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.

C. Concrete Moisture Testing:

1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.

2. Alkalinity and Adhesion Testing: Perform tests recommended by flooring manufacturer. Proceed with installation only after substrate alkalinity falls within a range on pH scale not less than 5 or more than 9 pH, or as otherwise required in writing by manufacturer of flooring.

3. Moisture Vapor Emission Testing:
   a. Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb. of water/1000 sq. ft. in 24 hours, or as otherwise required in writing by manufacturer of flooring.

4. Relative Humidity Testing:
   a. Perform relative humidity test, ASTM F 2170. Proceed with installation only after substrates have a maximum relative humidity level of 75 percent, or as otherwise required in writing by manufacturer of flooring.

5. Perform tests indicated above and as recommended by flooring manufacturer. Proceed with installation only after substrates pass testing.

D. Slabs not in compliance with moisture requirements shall be vapor mitigated as work of Section 09 6110 – Vapor Mitigation At Slabs until suitable results are obtained.

E. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.

F. Access Flooring Panels: Remove protective film of oil or other coating using method recommended by access flooring manufacturer.

G. Use trowelable leveling and patching compound to fill cracks, holes, and depressions in substrates.

H. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.

1. Do not install resilient products until they are same temperature as space where they are to be installed.

I. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation. After cleaning, examine substrates for moisture, alkaline salts, carbonation, and dust. Proceed with installation only after unsatisfactory conditions have been corrected.

J. Proceed with installation only after unsatisfactory conditions have been corrected. Installation of resilient flooring indicates acceptance of surfaces and conditions.

3.3 RESILIENT ATHLETIC FLOORING INSTALLATION

A. Shock Pad

1. Mix two- component adhesive according to supplier's instructions and spread adhesive using a notched trowel.

2. Unroll polyurethane/ rubber granulated base mat into freshly applied adhesive. Seams shall be in virtual contact with absence of compression fit. Roll surface of base mat with a medium-size roller.

B. Sealer

1. Mix two-component sealer according to supplier's instructions and spread sealer over base mat using a straight trowel. Allow to cure minimum 12 hours before proceeding.

C. Structure Layer

1. Mix two-component pigmented polyurethane resin and spread over sealer according to supplier's instructions. Allow to cure minimum 12 hours before proceeding.
2. Mix two-component pigmented polyurethane resin and apply at proper thickness according to supplier's instructions. Allow to cure minimum 12 hours before proceeding.

D. TopCoat

1. Mix two-component coating and apply using ½" nap roller(s) according to supplier's instructions. Allow 48 hours curing time before proceeding.

E. Gamelines

1. Mix two-component linepaint according to supplier's instructions.
2. Line painting should be in accordance with supplier's directions.
3. Color of court markings shall be chosen from Manufacturer's standard colors.
4. Refer to architectural drawings from game line locations and chosen colors.

3.4 RESILIENT WALL BASE INSTALLATION

A. Apply wall base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.

B. Install wall base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces aligned.

C. Tightly adhere wall base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.

D. Do not stretch wall base during installation.

E. On masonry surfaces or other similar irregular substrates, fill voids along top edge of wall base with manufacturer's recommended adhesive filler material.

F. Premolded Corners: Install premolded corners before installing straight pieces.

3.5 RESILIENT ACCESSORY INSTALLATION

A. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of floor coverings that would otherwise be exposed.

3.6 CLEANING AND PROTECTION

A. Perform the following operations immediately after completing resilient product installation:

1. Remove adhesive and other blemishes from exposed surfaces.

2. Sweep and vacuum surfaces thoroughly.

3. Damp-mop surfaces to remove marks and soil.

4. Do not wash surfaces until after time period recommended by manufacturer.

B. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period. Use protection methods recommended in writing by manufacturer.

1. Cover products installed on horizontal surfaces with undyed, untreated building paper until Substantial Completion.

2. Do not move heavy and sharp objects directly over surfaces. Place hardboard or plywood panels over flooring and under objects while they are being moved. Slide or roll objects over panels without moving panels.

END OF SECTION