Gym Floor Replacement

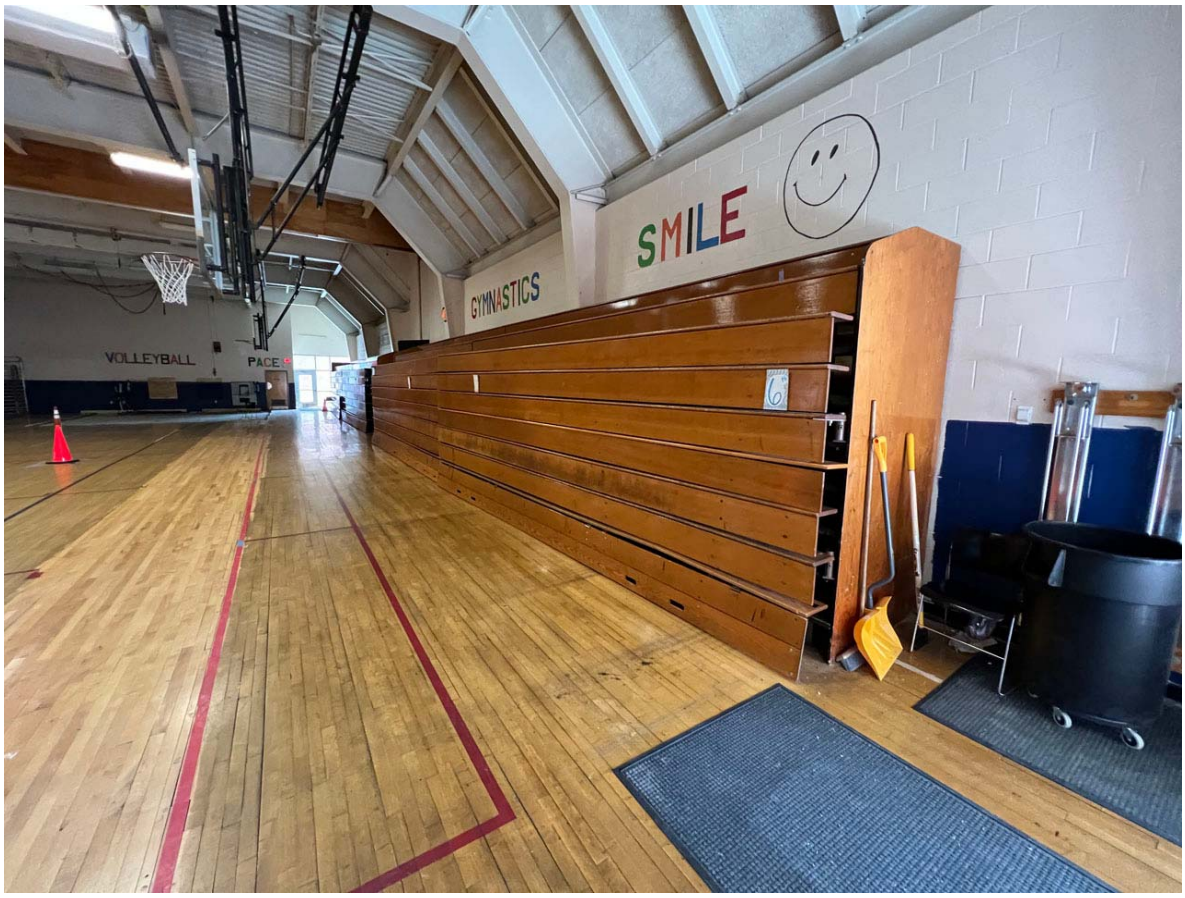
at the

Elm Park Community School

for

Worcester Public Schools

May 2, 2022



DOCUMENTS PREPARED BY

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SECTION 00.11.10

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SECTION 01.11.00

SUMMARY OF WORK

I PART 1 - GENERAL

1.01 GENERAL PROVISIONS

A. This section supplements the Conditions of the Contract, Prime Requirements, Drawings, and all other parts of the Contract Documents.

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

1.02 REQUIREMENTS INCLUDED

A. Work under this Contract.
B. Examination of Site and Documents.
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1.03 WORK UNDER THIS CONTRACT

A. The work to be done under this contract consists of executing and completing all work required for the removal of the existing gym floor system and the replacement of the flooring system and related items.

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

1. Remove existing folding bleachers.

2. Remove existing gym floor system, and accessories, to existing concrete slab.

3. Prepare existing slab, install moisture mitigation system and install new gym floor system, stripe, finish and install all accessories.

4. Install new bleachers (Alternates).

C. The following major elements will be performed by the Owner, under separate contracts, for which the Prime Contractor has a coordinating responsibility:
   1. Abatement of select ACT flooring directly adjacent to the work area. All areas will be abated and cleared prior to the start of the project work.

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

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

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

G. **Start of Work: Work may begin as soon as all contracts are issued and all materials are on site, ready for installation.**

1.04 EXAMINATION OF SITE AND DOCUMENTS

A. A pre-bid meeting will be held at the job site on the date and at the time indicated in the Invitation to Bid.

B. Bidders may also visit the site on a non-holiday weekday acceptable to the Owner, between the hours of 9:00 AM and 3:00 PM to visually inspect the location of the work and existing conditions that may affect new work provided that coordinate the visit with WPS and the main office.

C. The bidders are expected to examine and to be thoroughly familiar with all contract documents and with the conditions under which the work is to be carried out. The Owner and Designers will not be responsible for errors, omissions, and/or charges for extra work arising from the Contractor's or Subcontractor's failure to familiarize themselves with the contract documents. The Contractor and Subcontractors acknowledge that they are familiar with the conditions and requirements of the contract documents where they require, in any part of the work a given result to be produced, and that the contract documents are adequate and will produce the required results.

1.05 CONTRACT METHOD

A. Work under this contract shall be lump sum price, for the scopes of work as described in these specifications and shown on the Drawings.

1.06 WORK SEQUENCE

A. The Work will be conducted in the following sequence of demolition/construction:

   1. Actual sequence of the work will be left to the discretion of the Contractor, who will prepare a construction schedule showing the sequence and duration of work, for review and approval by the Owner.

1.07 SUPERVISION OF WORK

A. The Contractor shall be held directly responsible for the correct installation of all work performed under this Contract. The Contractor must make good repair, without expense to the Owner, of any part of the new work, or existing work to remain, which may become inoperative on account of leaving the work unprotected or unsupervised during construction of the system or which may break or give out in any manner by reason of poor workmanship, defective materials or any lack of space to allow for expansion and contraction of the work during the Contractor's warranty period, from the date of final acceptance of the work by the Owner.

B. The Contractor shall furnish a competent Massachusetts licensed superintendent satisfactory to the Owner and to the Designer. The licensed superintendent shall supervise all work under this contract and who shall remain on duty at the site throughout the Contract period while work is in progress.

1. Submit the name and resume of the superintendent for approval to the Architect. Include experience with projects of equal size and complexity.

1.08 CONTRACTOR'S USE OF PREMISES

A. Use of the Site: Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.

1. Owner Occupancy: Allow for Owner occupancy and use by the public (if applicable).

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

B. Schedule and perform work to afford minimum of interruption to normal and continuous operation of utility systems. Submit for approval, a proposed schedule for performing work; including construction of new utilities, re-routing of existing utilities and final connection of new work to existing work. Schedule shall indicate shutdown time required for each operation.

C. The Contractor shall schedule as per Section 01.50.00 - Temporary Facilities and Controls, the shutting down or interrupting any utilities, services or facilities which may affect the operation of the building outside the area of work or other buildings, services or facilities.

D. The Contractor can gain access to the premises during the hours specified below. In addition the Contractor and his personnel will limit themselves only within the working premises during working hours. If work needs to be scheduled during times other than those listed below, Contractor shall inform the Owner one week prior to work.

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

E. The Contractor shall verify that Subcontractors have visited the site and included all costs associated with the location of the project, and any restriction or limitations the location of the project may pose.

F. All contractors shall at all times conduct their operations in a courteous, professional manner while on the project or in the vicinity of the project. Harassment, offensive language or behavior will not be permitted on the site.

G. The Owner can neither accept nor assume responsibility for the security of the Contractor's material or equipment which is lost, stolen or vandalized. The Contractor is advised to exert caution in placement and storage of his equipment and material.

H. Parking: Work is anticipated to start while school is not in session, but be completed after the school is back in session, and Contractor's will have use of the school parking lot as approved by the school. Some continued use of the building by WPS staff or custodians is anticipated, and contractors shall cooperate with the Owner and the staff, and park where directed.

I. Radios, tape players, "boom boxes", or other audio entertainment equipment, including personal entertainment devices, shall not be allowed on the project site.

J. The Contractor shall not permit smoking within the building. Locate smoking areas away from entries, outdoor intakes, and operable windows, including adjacent buildings.

K. The Contractor shall not allow the use of intoxicating beverages or non-prescription controlled substance drugs upon or about the work site.

L. The Contractor shall provide and maintain in good serviceable condition at all times, warning signs and barriers, approved by the Owner, suitable for the purpose, and installed adjacent to each work area. Barriers shall be barrier tape and/or sawhorses as a means of such access protection.

1.09 COORDINATION

A. The Contractor shall be responsible for the proper fitting of all the work and for the coordination of the operations of all Subcontractors or material and persons engaged upon the work. The Contractor shall do, or cause his agents to do, all cutting, fitting, adjusting, and repair necessary in order to make the several parts of the work come together properly.

1. Examine Contract Documents in advance of start of construction and identify in writing questions, irregularities or interference to the designer in writing. Failure to identify and address such issues in advance becomes the sole responsibility of the Contractor. A conflict that would cause the reduction of the normal ceiling height of any occupied space is considered to be an interference.

B. Execute the work in an orderly and careful manner with due regard to the occupants of the facility, the public, the employees, and the normal function of the facility.

C. The work sequence shall follow planning and schedule established by the Contractor as approved by the Designer and the Owner. The work upon the site of the project shall commence promptly and be executed with full simultaneous progress. Work operations which require the interruption of utilities, service, and access shall be scheduled so as to involve minimum disruption and inconvenience, and to be expedited so as to insure minimum duration of any periods of disruption or inconvenience.

D. The Contractor shall review the tolerances established in the specifications for each type of work and as established by Subcontractor organizations. The Contractor shall coordinate the various Subcontractors and resolve any conflicts that may exist between Subcontractor tolerances without additional cost to the Owner. The Contractor shall provide any chipping, leveling, shoring or surveys to ensure that the various materials align as detailed by the Designer and as necessary for smooth transitions not noticeable in the finished work.

1.10 PROJECT MEETINGS

A. Project meetings shall be held on site at intervals appropriate to the progress of the Work and as required subject to the discretion of the Owner.

1. Attendees: In addition to the Project Manager and Designer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

B. In order to expedite construction progress on this project, the Contractor shall order all materials immediately after the approval of shop drawings and shall obtain a fixed date of delivery to the project site for all materials ordered which shall not impede or otherwise interfere with construction progress. The Contractor shall present a list and written proof of all materials and equipment ordered (through purchase orders). Such list shall be presented at the meetings and shall be continuously updated.

C. Scheduling shall be discussed with all concerned parties, and methods shall be presented by the Contractor, which shall reflect construction completion not being deferred or foreshortened. Identify critical long-lead items and other special scheduling requirements. The project schedule is to include time for submission of shop drawing submittals, time for review, and allowance for resubmittal and review.

1.11 PERMITS, INSPECTION, AND TESTING REQUIRED BY GOVERNING AUTHORITIES

A. If the Contract Documents, laws, ordinances, rules, regulations or orders of any public authority having any jurisdiction require any portion of the Work to be inspected, tested, or approved, the Contractor shall give the Designer, the Owner or his/her designated representative, and such Authority timely notice (5 business days minimum) of its readiness so the Designer may observe such inspecting, testing, or approval.

B. Prior to the start of construction, the Contractor shall complete application to the applicable Building Code enforcement authority for a Building Permit. Such Permit shall be displayed in a conspicuous location at the project site. The building permit fee shall be paid by the Contractor.

C. Unless otherwise specified under the Sections of the Specifications, the Contractor shall pay such proper and legal fees to public officers and others as may be necessary for the due and faithful performance of the work and which may arise incidental to the fulfilling of this Contract. As such, all fees, charges, and assessments in connection with the above shall be paid by the Contractor.

D. Contractor and specialized Subcontractors as applicable shall identify all permits (other than building permit) required from Authorities having jurisdiction over the Project for the construction and occupancy of the work. The Contractor shall prepare the necessary applications and submit required plans and documents to obtain such permits in a timely manner, and shall furnish the required information to the Building Official and obtain the required permits as early as practicable after award of the Contract.

E. Prior to the start of construction, the Contractor shall complete applicable applications, permits, and notifications to the MADEP, such as the Demolition/Construction form BWP AQ-06, and pay the required fees. These forms must be submitted at least 10 working days in advance of any regulated activity on the site. Demolition permits must be submitted for any work involving demolition, new construction and renovation.

1.12 CUTTING, CORING, AND PATCHING, UNLESS OTHERWISE INDICATED

A. The Contractor shall coordinate that the work of the Subcontractor is not endangered by any cutting, coring, excavating, or otherwise altering of the work and shall not allow the cutting or altering the work of any Subcontractor except with the written consent of the Designer.

B. Performance:

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

(a) In general, where mechanical cutting is required, cut work with sawing and grinding tools, not

with hammering and chopping tools.

2. Employ original installer or fabricator to perform cutting and patching for:
   (a) Weather-exposed or moisture-resistant elements.
   (b) Sight-exposed finished surfaces.

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

4. Restore work which has been cut or removed; install new products matching existing to provide completed Work in accordance with requirements of Contract Documents.

5. Fit work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

6. Patch with seams which are durable and as invisible as possible. Flash and seal all penetration of exterior work. Comply with specified tolerances for the work.

7. Restore exposed finishes of patched areas; and, where necessary extend finish restoration onto retained work adjoining, in a manner which will eliminate evidence of patching.
   (a) Where patch occurs in a smooth painted surface, extend final paint coat over the entire unbroken surface containing the patch.

8. Refinish entire surfaces as necessary to provide an even finish to match adjacent finishes:
   (a) For continuous surfaces, refinish to nearest intersection.
   (b) For an assembly, refinish entire unit.

C. Existing Utilities Services:

1. Interruptions to critical existing utility services will not be allowed except as scheduled per Section 01.50.00 - Temporary Facilities and Controls.

2. All exposed conduits, wires, and/or cables shall be provided with sufficient protection and support to prevent failure, fraying, or damage due to backfilling or other construction operations.

1.13 DEBRIS REMOVAL

A. The Contractor shall coordinate the removal of all demolition and construction waste including waste by all Subcontractors from the job site on a daily basis.

B. Debris shall be legally disposed of in a D.E.P. approved disposal site.

C. The Contractor shall bear responsibility for maintaining the building and site clean and free of debris, leaving all work in clean and proper condition satisfactory to the Owner and the Designer. The Contractor shall ensure that each of the Subcontractors clean up during and immediately upon completion of their work. Clean up includes the following tasks:

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

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

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

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

G. The Contractor shall be responsible for proper disposal of all construction debris leaving the site.

1.14 FIELD MEASUREMENTS

A. Although care has been taken to ensure their accuracy, the dimensions shown for existing items and structures are not guaranteed. It is the responsibility of the Contractor to verify these dimensions in the field before fabricating any construction component. No claims for extra payment due to incorrect dimensions will be considered by the Owner.

1.15 SAFETY REGULATIONS

A. This project is subject to compliance with Public Law 91 596 "Occupational Safety and Health Act" latest edition (OSHA 29 CFR 1926), with respect to all rules and regulations pertaining to construction, including Volume 36, numbers 75 and 105, of the Federal Register, as amended, and as published by the U.S. Department of Labor.

B. Hazardous Waste Generation: Any work generating Hazardous or so-called Universal Wastes will comply with all requirements of 310 CMR 30.000. The proper storage, use and disposal of any hazardous chemicals or substances brought on site by the Contractor are the responsibility of Contractor. The Owner will not be responsible for any hazardous materials left on site, the cost to remove these materials will be the Contractor's responsibility. All hazardous wastes generated as a result of demolition and remodeling shall be contained, collected, segregated, labeled per all applicable federal EPA, Massachusetts DEP, and Federal DOT regulations or other applicable local, state or federal hazardous waste regulations, pending the appropriate disposition.

1.16 OSHA SAFETY AND HEALTH COURSE DOCUMENTATION

A. OSHA Safety and Health Course Documentation Records: Chapter 306 of the Massachusetts Acts of 2004 requires that everyone employed at the jobsite must complete a minimum 10-hour long course in construction safety and health approved by the U.S. Occupational Safety and Health Administration (OSHA) prior to working at the jobsite. Compliance is required of Contractors' and Subcontractors' on-site employees at all levels whether stationed in the trailer or working in the field. Unless the Massachusetts Attorney General's office indicates otherwise, this requirement does not apply to home-office employees visiting the site or to suppliers' employees who are making deliveries.

B. OSHA 10 cards for anyone working on site are to be submitted prior to the first requisition.

C. Documentation records shall be initially compiled by the Contractor and Subcontractors, and the Contractor shall create and maintain a copy of the documentation on site at all times.

1.17 DAMAGE RESPONSIBILITY

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

1.18 OWNER FURNISHED PRODUCTS

A. None.

1.19 ASBESTOS AND HAZARDOUS MATERIALS DISCOVERY

A. Materials to be removed have been sampled by the Owner's Hygienist and have tested **negative** for the presence of asbestos. The testing report is included in the bid package under Appendix A.

B. Any items directly adjacent to the work that were tested and found to be ACM, will be selectively abated prior to the start of the project by WPS (outside of the project).

C. If unanticipated asbestos-containing materials or other Hazardous Materials not included in Contract are discovered at any time during the course of work, the Contractor shall cease work in the affected areas only and continue work in other areas, at the same time notify the Designer of such discovery. Do not proceed with work in such affected areas until written instructions are received. If removal is required, payment will be made in accordance with the contract unit prices bid for each respective material. In the absence of unit prices, costs shall be negotiated or otherwise established prior to commencement of removal, in accordance with provisions of the Contract.

D. The Owner or Designer will work with the Contractor to initiate removal or encapsulation of the asbestos. An extension of the completion date may be granted equal to the time lost. Proper notification must be made to the MADEP through the ANF-001 form, and the Owner.

1.20 LIST OF DRAWINGS

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

1. Cover
2. A1 - Demolition Plan and Details
3. A2 - New Gym Plan and Details
4. A3 - New Bleachers

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01.23.00

ALTERNATES

I. PART I - GENERAL

1.01 GENERAL PROVISIONS

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

1.02 REQUIREMENTS INCLUDED

A. Definition: "Alternates" are alternate products, materials, equipment, systems, methods, units of work or major elements of the construction, which may, at the Awarding Authority's option and under the terms established by the Contract or Agreement, be selected for the work in lieu of the corresponding requirements of the Contract Documents.

B. Alternate Requirements: A Schedule of Alternates is included at the end of this Section. Each alternate is defined using abbreviated language, recognizing that the Contract Documents define the requirements. Coordinate related work to ensure that work affected by each alternate is complete and properly interfaced with work of each selected alternate.

C. Provide written proposals for each alternate on the Form of Proposal for the Awarding Authority's consideration. Each proposal amount shall include the entire cost of the alternate portion of the work including overhead, profit, taxes, insurance, and other costs including cost of interfacing and coordinating the alternate with related and adjacent work.

D. Selection of Alternates: Selection of alternates to be included in the work will be by the Awarding Authority. Alternates must be taken in order. The first alternate before the second alternate, etc.

E. Notification: Prepare and distribute to each entity a notification of status of each alternate. Indicate which alternates have been accepted or rejected, or when such decision is anticipated.

1.03 DESCRIPTION OF ALTERNATES

A. **Alternate No. 1**: State the difference in cost to install **ONE** (41'-0") section of bleachers as shown on the drawings and as described in Section 12.66.23 - Telescoping Seating.

B. **Alternate No. 2**: State the difference in cost to install a **SECOND** (41'-0") section of bleachers as shown on the drawings and as described in Section 12.66.23 - Telescoping Seating.

End of Section
01.23.00

SECTION 01.31.00

PROJECT MANAGEMENT AND COORDINATION

I. PART I - GENERAL

1.01 GENERAL PROVISIONS

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

1.02 SUMMARY

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

B. Description:

1. Coordinate scheduling, submittals, and work of the various trades and elements of the Work to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items to be installed later.

2. Coordinate sequence of the Work to accommodate Partial (Beneficial) Occupancy.

C. Meetings:

1. In addition to progress meetings, hold coordination meetings and pre-installation conferences with personnel and Sub-Contractors to assure coordination of the Work. The coordination meetings are to be separate from the commissioning or commissioning meetings.

D. Coordination of Submittals:

1. Schedule and coordinate submittals.

2. Coordinate work of various trades having interdependent responsibilities for installing, connecting to, and placing in service such equipment.

3. Coordinate requests for substitutions to assure compatibility of space, of operating elements, and effect on work of other trades.

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

E. Commissioning:

1. Not applicable.

1.03 FIELD COORDINATION

A. Project scopes of limited complexity or limited utility installation will not require coordination drawings. The Contractor remains responsible for field coordinating the work of all trades, to see that it comes together without conflict or loss of functionality.

1. Where field coordination is performed, the Contractor shall advise the Designers of any conflict or field condition which results in the system being installed other than as designed.

2. In such instances, contractors are expected to propose alternative routes based on field conditions revealed through the performance of the demolition. Rerouting shall not be performed, however, until first approved by the Designers. No additional compensation will be due for field coordination efforts.

3. Where rerouting of utilities differently than designed creates a conflict with another trade, which was not forseen or properly coordinated between the contractors, the conflicting utility shall be revised at no expense to the Owner, to eliminate the conflict.

1.04 MEP COORDINATION DRAWINGS

A. Not applicable.

II. PRODUCTS (Not Used)

III. EXECUTION (Not Used)

END OF SECTION
01.31.00

SECTION 01.32.00

CONSTRUCTION PROGRESS DOCUMENTATION

I. PART I - GENERAL

1.01 GENERAL PROVISIONS

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

1.02 REQUIREMENTS INCLUDED

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

1.03 RELATED SECTIONS

A. Section 01.10.00 – SUMMARY

1. Project meetings.

B. Section 01.31.00 - PROJECT MANAGEMENT AND COORDINATION

1. Progress and coordination meetings.

C. Section 01.33.00 - SUBMITTAL REQUIREMENTS

1. Project reports.
2. Schedule of values.
3. Shop drawings, product data, and samples.

1.04 CONSTRUCTION SCHEDULE

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

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

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

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

3. A projection of any upcoming required service interruption notices

1.05 CRITICAL PATH METHOD SCHEDULING

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

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

considered a prerequisite for payment.

C. Additional Requirements

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

II. PRODUCTS (Not Used)

III. EXECUTION (Not Used)

END OF SECTION
01.32.00

SECTION 01.33.00

SUBMITTALS

I. PART 1 - GENERAL

1.01 GENERAL PROVISIONS

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

1.02 RELATED DOCUMENTS

A. This Section supplements the General Conditions.

B. Consult the individual sections of the specifications for the specific submittals required under those sections and for further details and descriptions of the requirements

1.03 GENERAL PROCEDURES FOR SUBMITTALS

A. Timeliness - The Contractor shall transmit each submittal to the Architect sufficiently in advance of performing related work or other applicable activities so that the installation is not delayed by processing times, including disapproval and resubmittal (if required), coordination with other submittals, testing, purchasing, fabrication, delivery, and similar sequenced activities. No extension of time will be authorized because of the Contractor's failure to transmit submittals to the Architect in advance of the Work. Allow (14) calendar days for Architect's review.

B. Sequence - The Contractor shall transmit each submittal in a sequence which will not result in the Architect's approval having to be later modified or rescinded by reason of subsequent submittals which should have been processed earlier or concurrently for coordination.

C. Contractor's Review and Approval - Only submittals received from and bearing the stamp of approval of the Contractor will be considered for review by the Architect. Submittals shall be accompanied by a transmittal notice stating name of Project, date of submittal, "To", "From" (Contractor, Subcontractor, Installer, Manufacturer, Supplier), Specification Section, or Drawing No. to which the submittal refers, purpose (first submittal, resubmittal), description, remarks, distribution record, and signature of transmitter.

D. Architect's Action - The Architect will review the Contractor's submittals and return them with one of the following actions recorded thereon by appropriate markings:

1. Final Unrestricted Release: Where marked "No Exceptions Taken" the Work covered by the submittal may proceed provided it complies with the requirements of the Contract Documents.

2. Final-But-Restricted Release: When marked "Note Markings" or "Comments Attached" the Work may proceed provided it complies with the Architect's notations or corrections on the submittal and complies with the requirements of the Contract Documents. Acceptance of the Work will depend on these compliances.

3. Returned for Resubmittal: +When marked "Resubmit" or "Rejected" the Work covered by the submittal (such as purchasing, fabrication, delivery, or other activity) should not proceed. The submittal should be revised or a new submittal resubmitted without delay, in accordance with the Architect's notations stating the reasons for returning the submittal.

E. Processing - All costs for printing, preparing, packaging, submitting, resubmitting, and mailing, or delivering submittals required by this contract shall be included in the Contract Sum.

1.04 OR EQUALS

A. Definition - Whenever a specification section names one or more brands for a given item, and the Contractor wishes to submit, for consideration, another brand, the submission shall be considered an "or-equal" or a "material substitution". For the purposes of this Contract, the terms "or-equal" and "material substitution" shall be considered synonymous.

B. In no case may an item be furnished on the Work other than the item named or described, unless the Architect, with the Owner's written concurrence, shall consider the item equal to the Item so named or described.

C. The equality of items offered as "equal" to items named or described shall be proved to the satisfaction of the Architect at the expense of the Contractor submitting the substitution.

1.05 SUBMISSION OF PRODUCT DATA

A. The Contractor shall submit an electronic copy of Product Data, in Adobe Acrobat (PDF) format to the Architect. All such data shall be specific and identification of material or equipment submitted shall be clearly marked or highlighted. Data of general nature will not be accepted.

B. Product Data shall be accompanied by a transmittal notice. The Contractor's stamp of approval shall appear on the printed information itself, in a location which will not impair legibility.

C. Product Data returned by the Architect as "Rejected" shall be resubmitted until the Architects approval is obtained.

D. When the Product Data are acceptable, the Architect will stamp them “No Exceptions Taken”, and return 1 copy to the Contractor. The Contractor shall provide and distribute additional copies as may be required to complete the Work.

E. The Contractor shall maintain one full set of approved, original, Product Data at the site.

1.06 SUBMISSION OF SHOP DRAWINGS

A. Shop Drawings shall be complete, giving all information necessary or requested in the individual section of the specifications. They shall also show adjoining Work and details of connection thereto.

B. Shop Drawings shall be for whole systems. Partial submissions will not be accepted.

C. The Architect reserves the right to review and approve shop drawings only after approval of related product data and samples.

D. Shop drawings shall be properly identified and contain the name of the project, name of the firm submitting the shop drawings, shop drawing number, date of shop drawings and revisions, Contractor's stamp of approval, and sufficient spaces near the title block for the Architect's stamp.

E. The Contractor shall submit to the Architect three (3) black line prints of each shop drawing or one electronic copy in Adobe Acrobat (pdf) format, at the Architect’s discretion. Prints may be mailed, delivered in roll form or emailed. Each submittal shall be accompanied by a transmittal notice bearing the Contractor's approval stamp.

F. When the Architect returns a marked submittal with the stamp "Resubmit" or "Confirm", the Contractor shall correct the original drawing or prepare a new drawing and resubmit three prints or an electronic version thereof to the Architect for approval. This procedure shall be repeated until the Architect's approval is obtained.

G. When the Architect returns submittal with the stamp "No Exceptions Taken", the Contractor shall provide and distribute the prints for all Contractor and Subcontractors use.

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

1.07 SUBMISSION OF SAMPLES

A. Unless otherwise specified in the individual section, the Contractor shall submit two specimens of each sample to the owner.

B. A transmittal notice with the Contractors stamp of approval shall be included with all sample submittals.

C. Samples shall be of adequate size to permit proper evaluation of materials. Where variations in color or in other characteristics are to be expected, samples shall show the maximum range of variation. Materials exceeding the variation of approved samples will not be approved on the Work.

D. Samples that can be conveniently mailed shall be sent directly to the Architect, accompanied by a transmittal notice. All transmittals shall be stamped with the Contractor's approval stamp of the material submitted.

E. All other samples shall be delivered at the field office of the Project Representative with sample identification tag attached and properly filled in.

F. If a sample is rejected by the Architect, a new sample shall be resubmitted in the specified manner. This procedure shall be repeated until the Architect approves the sample.

G. Samples will not be returned unless return is requested at the time of submission. The right is reserved to require submission of samples whether or not particular mention is made in the specifications, at no additional cost to the Owner.

END OF SECTION
01.33.00

SECTION 01.50.00

TEMPORARY FACILITIES AND CONTROLS

I. PART I - GENERAL

1.01 GENERAL PROVISIONS

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

1.02 REQUIREMENTS INCLUDED

A. Temporary Facilities and Controls including the following:

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

1.03 TEMPORARY WATER

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

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

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

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

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

1.04 WEATHER PROTECTION

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

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

1. Within 30 calendar days after his award of contract, the General Contractor shall submit in writing to the Designer for approval, three copies of his proposed methods for "Weather Protection."
2. Installation of weather protection and heating devices shall comply with all safety regulations including provisions for adequate ventilation and fire protection devices. Heating devices which may cause damage to finish surfaces shall not be used.
3. The General Contractor shall furnish and install one accurate Fahrenheit thermometer at each work area as designated by the Designer. However, one additional accurate Fahrenheit thermometer shall be provided for every 2,000 square feet of floor space where the work areas exceed 2,000 square feet.

1.05 HEATING DURING CONSTRUCTION

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

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

1.06 TEMPORARY POWER

A. Contractors may utilize electrical power where available in or around the Work Area, and the Owner shall pay the cost of electricity used.

1. The use of cordless tools is strongly encouraged.

2. Contractors shall provide their own electrical cords, and cords shall not be run through, across or draped within corridors or circulation spaces used by the public. If running electrical cords across circulation spaces is unavoidable, cords shall be secured to the floor with readily visible colored duct tape, and shall be removed as soon as power is no longer needed.

B. Modification of electrical panels is not permitted.

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

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

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

1.07 MAINTENANCE OF ACCESS

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

1.08 DUST CONTROL

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

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

1.09 NOISE CONTROL

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

B. Work must be scheduled and performed in such a manner as to not interfere with the operations of the Owner. Construction work that is deemed by the Owner to be excessively noisy may be required to be done during non-normal working hours and at no additional expense.

C. Comply with requirements of authorities having jurisdiction. Develop and maintain a noise-abatement program and enforce strict discipline over all personnel to keep noise to a minimum.

D. Execute construction work by methods and by use of equipment which will reduce excess noise.
   1. Equip air compressors with silencers, and power equipment with mufflers.
   2. Manage vehicular traffic and scheduling to reduce noise.
   3. No heavy equipment may be started or idled before 7A.M.

1.10 INDOOR AIR QUALITY (IAQ) MANAGEMENT

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

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

C. Before Occupancy:

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

1.11 ENCLOSURES

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

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

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

1.12 CLEANING DURING CONSTRUCTION

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

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

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

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

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

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

G. Prevent accumulation of wastes which create hazardous conditions.

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

I. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
   1. Do not burn or bury rubbish and waste materials on site.
   2. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
   3. Do not dispose of wastes into streams or waterways.
   4. Identify potential sources of cleaning water runoff and propose abatement procedures.

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

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

L. Execute cleaning to ensure that the buildings, the sites, and adjacent properties are maintained free from accumulations of waste materials and rubbish and windblown debris, resulting from construction operations.

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

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

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

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

1.13 FIELD OFFICES

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

B. At the Contractor's option and expense, and if permitted by the Owner, the General Contractor may provide a suitable field office on site for its own use. The office trailer shall be relocated if required by the Owner, and shall be secured to the site as required by the Building Code.

1.14 TELEPHONE SERVICE

A. All Designers, Superintendents and Project Managers shall maintain cellular telephones and be reachable Monday - Friday between 8AM and 5PM, and after hours for emergency calls. Phone numbers shall be listed on a Project Directory, to be submitted at the pre-construction meeting.

1.15 SANITARY FACILITIES

A. Use of toilet facilities within the building will be permitted, provided the Contractors maintain the facilities in clean condition. The General Contractor shall take responsibility for maintenance and cleaning of such areas and shall leave them in first class condition equal to the accepted conditions of toilet facilities not used for construction personnel.

1.16 CONSTRUCTION BARRIERS

A. Proper construction barriers shall be provided around the contract work areas as defined by the Contract Drawings or as directed by the Owner.

B. Construction barriers shall consist of traffic cones, ribbons, tapes, secure fencing, trench covers, wood barriers, warning signs, directional signs, and other traffic materials to keep traffic and people from area of construction and maintain ongoing operations.

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

1.17 PARKING

A. Parking will be permitted within the school's parking lot, where directed by the Owner. Contractors shall move vehicles when requested by the Owner.
   1. Access to loading docks, driveways, staff, faculty, visitor or tenant parking shall not be blocked by construction vehicles.
   2. Parking in handicapped accessible spaces will not be permitted.

B. Idling of vehicles on site will not be permitted.

C. If the Owner authorizes parking on lawns, the Prime Contractor shall be responsible for repairing any damage to lawns or curbs from parked vehicles.

1.18 DEBRIS CONTROL AND REMOVAL

A. Debris shall not be permitted to accumulate or migrate and the work shall at all times be kept satisfactorily clean. Facility trash receptors shall not be used for the disposal of debris. Dumpster shall be provided by the General Contractor for removal of debris for all Subcontractors.

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

1.19 SAFETY PROTECTION

A. At no time shall the work be left unattended without proper safety protection and shall not be left unprotected to the weather and accessible to the public. It is the responsibility of the General Contractor to maintain proper safety protection for the public while work is in progress or unattended.

1.20 VEHICLE AND EQUIPMENT PROTECTION

A. All construction activities shall be performed in such a manner so as not to dust, stain or damage any building elements, equipment, vehicles, etc. within general vicinity of the construction work area. Any damage to these items shall be cleaned and repaired at the expense of the General Contractor.

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

1.21 CONSTRUCTION FENCE

A. Not required.

1.22 PROJECT IDENTIFICATION

A. No project sign is required by the Owner.

B. If the Contractor wishes to provide a project sign, at his own expense, the Owner reserves the right to approve the content and appearance of the sign.

C. Any signs will be located on site where directed by the Owner, and shall be relocated or removed if the Owner so directs.

1.23 DELIVERY OF MATERIALS

A. All Materials shall be delivered to the Contractor's or Sub-Contractor's warehouse or may be delivered to the site if the Contractor's representative is present to receive them.

B. No materials will be received by the Owner's personnel.

1.24 SHUT DOWN NOTICE

A. The Contractor shall notify the Owner, at least fourteen (14) calendar days in advance, of the need for any utility shut down to install or modify any utilities or building systems. The shutdown request shall indicate:
1. The utility to be shutdown.
2. The duration of the shutdown.
3. The spaces anticipated to be affected by the shutdown.

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

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

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

1.25 EXCAVATIONS AND FIELD SURVEY REQUIREMENTS

A. Not applicable.

II. PART II - PRODUCTS (Not Used)

III. PART III - EXECUTION (Not Used)

END OF SECTION
01.50.00

SECTION 01.73.29

CUTTING AND PATCHING

I. PART-1 GENERAL

1.01 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 1 - GENERAL REQUIREMENTS, which are hereby made a part of this section of the specifications.

1.02 SCOPE OF WORK

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

1.03 SUMMARY

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

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

1.04 QUALITY ASSURANCE

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

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

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

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

1.05 RELATED SECTIONS

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

II. PART 2 - PRODUCTS

2.01 MATERIALS

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

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

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

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

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

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

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

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

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

III. PART 3 - EXECUTION

3.01 PROTECTION

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

3.02 PREPARATION

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

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

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

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

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

3.03 PERFORMANCE

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

F. Site Repair:

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

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

3.04 CLEANING

A. Thoroughly clean areas and spaces where cutting and patching is performed or used as access. Remove completely paint, mortar, oils, putty and items of similar nature.

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

END OF SECTION
01.73.29

SECTION 01.77.00

CLOSEOUT PROCEDURES

I. PART 1 - GENERAL

1.01 GENERAL

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

1.02 DESCRIPTION OF WORK

A. This section lists the procedures required for the proper completion of this project including processing the Release of Retainage and making the Final Payment to the Contractor.

B. Consult the Individual sections of the specifications for requirements affecting Project Close Out.

1.03 RELATED DOCUMENTS

A. This section supplements the General Conditions.

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

1.04 SUBSTANTIAL COMPLETION

A. Prior to requesting Substantial Completion the Contractor shall make a thorough inspection of the Work. During this inspection the Contractor shall prepare a comprehensive list of all items remaining to be completed or corrected. This list shall include all remaining Contractor and Subcontractor items to be provided under the Contract Documents.

B. Upon completion of the items noted on the Contractor's list the Contractor shall notify the Architect that the Work is Substantially Complete. The Architect shall then conduct a similar thorough inspection. If the Architect agrees that the Work is Substantially Complete, the Architect will promptly make a thorough inspection and prepare a punch list, setting forth in accurate detail any items on the Contractor's list and additional items that are not acceptable or incomplete. The Contractor shall coordinate all Subcontractors to achieve prompt completion of the punch list.

C. The Contractor shall not be relieved of the responsibility to provide Contract items left off of the Architect's punch list.

D. If the Architect determines that the Work is not Substantially Complete, the Architect shall inform the Contractor of those items that must be completed before the Architect will prepare a punch list. Upon completion of those items, the Contractor shall again request the Architect to prepare a punch list.

E. When the punch list has been prepared, the Architect will arrange a meeting with the Contractor and Subcontractors to identify and explain all punch list items and answer questions on work which must be done before final acceptance.

F. The Architect may revise the punch list, from time to time, to ensure that all items of Work are properly completed.

G. The Architect shall prepare the Certificate of Substantial Completion in accordance with the General Conditions.

H. The Contractors shall correct the items noted on the punchlist(s). The General Contractor shall check the work of his forces, and of all sub-contractors to verify that the work has been corrected, and notify the architect that the project is ready for reinspection. The Architect and Engineers may, at their discretion, check the work to confirm the punchlist has been completed, and advise the Owner.

1. If the Contractor calls for reinspection, and the Project is not actually ready or punchlist items have not been corrected and subsequent re-inspections are required, the Architect reserves the right to bill the Owner for the re-inspections, and such monies will be deducted from the balance due to the Contractor.

1.05 RECORD DRAWINGS

A. As-built Drawings shall consist of all the Contract Drawings. As-built Drawings shall be kept up-to-date. Information from on-going Work shall be recorded on As-built Drawings within 48 hours of Work being performed.

B. The General Contractor and each Subcontractor shall be required to maintain one set of As-built Drawings, as the work relates to their Sections of the Specifications, at the site.

C. The As-built Drawings shall be stored and maintained in the General Contractor's field office or a secure location apart from other documents used for construction. The As-built Drawings shall be maintained in a clean, dry, and legible condition and shall not be used for construction purposes.

D. As-built Drawings, as submitted by the General Contractor shall be verified in the field by the Designer or his Consultants. Verification by the Designer shall occur during the construction process and prior to the related work being completed and covered up.

E. The As-built Drawings shall be available at all time for inspection by the Project Manager or Designer. All deficiencies noted shall be promptly corrected.

F. At the end of each month and before payment for materials installed, the General Contractor, each Subcontractor, the Architect and Project Manager shall review the As-built Drawings for purpose of payment.

1. If the changes in location of all installed elements are not shown on the As-Built Drawings and verified in the field, then the material shall not be considered as installed and payment will be withheld.

G. Prior to the installation of all finish materials, a review of the As-built Drawings shall be made to confirm that all changes have been recorded. All costs to investigate such conditions shall be borne by the applicable party as determined by the Designer.

H. At the completion of the contract, each Subcontractor shall submit to the General Contractor a complete set of his respective As-built Drawings indicating all changes. After checking the above drawings, the General Contractor shall certify in writing on the title sheet of the drawings that they are complete and correct and shall submit the As-built Drawings to the Designer.

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

1.06 RECORD SURVEYS

A. Not required.

1.07 OPERATING AND MAINTENANCE INSTRUCTIONS

A. Consult the individual sections of the specifications for the specific requirements for those sections and for further details and descriptions of the requirements.

B. Prior to final payment and completion the Contractor shall provide all Operating Manuals and Maintenance Instructions as required by the Contract Documents.

C. Operating Instructions and Manuals:

1. Subcontractors, installers, and suppliers shall furnish to the Contractor two sets of operating and maintenance instructions of all mechanical, electrical, and manually operated equipment furnished and installed by them. Mechanical and electrical subcontractors shall furnish instructions as specified in their respective sections.

2. The Contractor shall collect all of the above instructions, bind them into two complete sets, and submit them to the Architect who will deliver them to the Owner.

3. The Contractor shall prepare a CD of all O&M items and deliver to the Owner.

4. Submission of operating and maintenance instructions shall be a condition precedent to final payment

D. Instruction of Owner's Personnel

1. Where specified in the individual sections of the specifications, the Contractor and Subcontractor shall instruct the Owner's personnel at the site, in the use and maintenance of equipment installed under the Contract.

2. Submission to the Architect of a certificate of compliance to this requirement, signed by the Contractor and the Owner's Representative, shall be a condition precedent to final payment.

1.08 PARTIAL RELEASE OF RETAINAGE

A. If within 65 days after Substantial Completion, any of the items on the Architect's punch list are not complete or if the Contractor has not provided the appropriate marked up As Built Drawings, Operating Manuals, Warranties, Guarantees, or Spare Parts the Architect shall assign a monetary value for each incomplete item as well as any other items as provided by M.G.L. c.30 §39K, and the Architect shall prepare a Certificate for Partial Release of Retainage

B. If the Architect is required to prepare a Certificate for Partial Release of Retainage the Contractor shall complete all remaining Work in accordance with the provisions of the General Conditions.

C. The Contractor's signature on this Certificate shall be notarized.

D. The Contractor may make a request for additional releases of retainage when portions of the Work listed on the Architect's punch list have been satisfactorily completed. Each request shall be accompanied by a new application for payment and a new signed and notarized Certificate for Partial Release of Retainage.

E. The Architect's inspections, required to complete the additional payment applications described above, are subject to provisions of the General Conditions.

F. If the Owner has required Performance and Payment Bonds, then prior to the partial release of retainage, the General Contractor shall submit to the Owner Consent of Surety to Partial Release of Retainage using AIA Document G707A or an equivalent document.

1.09 FINAL RELEASE OF RETAINAGE

A. Prior to the final release of retainage, the General Contractor shall submit to the Owner:

1. Consent of Surety, using AIA Document G707 or similar document, if performance and payment

bonds were required for the project.

2. Contractor's Affidavit of Release of Liens, using AIA Document G706A or equivalent. This document shall be accompanied by certified statements from all sub-contractors working on the project, that they have received all monies due, and have paid all suppliers and sub-sub contractors accordingly.

   (a) Should any payments be outstanding and contingent upon receipt of the retainage in order to be paid, the General Contractor shall submit AIA Document 706, itemizing those items which have not been paid.

END OF SECTION
01.77.00

SECTION 02.41.00

SELECTIVE DEMOLITION

I. PART 1 - GENERAL

1.01 GENERAL

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

1.02 WORK INCLUDES

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

1. Removal of existing bleacher system and associated accessories

2. Remove existing gym floor system and associated accessories down to concrete deck.

B. The following major elements will be **performed by the Owner**, under separate contracts, for which the Prime Contractor has a coordinating responsibility:
1. Abatement of select ACT flooring directly adjacent to the work area. All areas will be abated and cleared prior to the start of the project work.

1.03 SUBMITTALS

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

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

1.04 JOB CONDITIONS

A. Condition of Structures: Owner assumes no responsibility for actual condition of items or structures to be demolished.

B. Protections: Provide temporary barricades and other forms of protection as required to protect Owner's personnel and general public from injury due to selective demolition work.

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

2. Protect from damage existing finish work that is to remain in place and becomes exposed during demolition operations. Protect site with suitable coverings when necessary.

3. Remove protections at completion of work.

C. Damages: Promptly repair damages caused to adjacent facilities by demolition work at no cost to Owner.

D. Traffic: Conduct selective demolition operations and debris removal in a manner to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.

E. Do not close, block or otherwise obstruct streets, walks or other occupied or used facilities without written permission from authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

F. Utility Services: Maintain existing utilities indicated to remain, keep in service, and protect against damage

during demolition operations.

G. Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by the Owner. Provide temporary services during interruptions to existing utilities, as acceptable to governing authorities.

H. Environmental Controls: Use temporary enclosures, and other suitable methods to limit dust and dirt rising and scattering in air to lowest practical level. Comply with governing regulations pertaining to environmental protection. Provide negative air equipment throughout demolition as a means of dust and odor control.

II. PART II - PRODUCTS (Not Applicable)

III. PART III - EXECUTION

3.01 ASBESTOS ADVISORY

A. The Owner has tested the project area elements scheduled to be demolished, for the presence of asbestos containing materials (ACMs), and **results were negative**. *(See Appendix A)*

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

3.02 INSPECTION

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

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

3.03 PREPARATION

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

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

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

D. Cease operations and notify the Owner's Representative immediately if safety of structure appears to be endangered. Take precautions to support structure until determination is made for continuing operations.

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

F. Erect and maintain dust-proof partitions and closures, and other means as required to prevent spread of dust

or fumes to occupied portions of the building, as specified in Section 01.50.00. Temporary partitions at corridors shall not restrict access of egress through the corridor, and shall not reduce the clear width to less than what is required by Code.

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

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

3.04 GENERAL DEMOLITION

A. Perform selective demolition work in a systematic manner. Use such methods as required to complete work indicated on Drawings in accordance with demolition schedule and governing regulations.

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

C. If unanticipated mechanical, electrical or structural elements which conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict. Submit report to Designer in written, accurate detail. Pending receipt of directive from Designer, rearrange selective demolition schedule as necessary to continue overall job progress without delay.

D. Notify Architect immediately if materials scheduled to remain are found to be unsuitable for the installation of the new work, or if existing conditions deviate substantially from those shown on the drawings. Remove and replace, or make good, any existing materials unsuitable for installation of new work.

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

3.05 BLEACHER DEMOLITION

A. Remove bleachers, carefully, to maintain the integrity of the substrate (to remain) they are fastened too.

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

3.06 FLOORING DEMOLITION

A. The extent of flooring demolition shall include removal of all materials above the existing concrete slab. The contractor performing the demolition shall coordinate with the flooring installer(s) as required, to understand the flooring manufacturer's required substrate. **Final prep of all floors with leveling compound, flashing compounds, etc. shall be performed by the trade installing the flooring**.

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

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

1. Filler material shall be non-shrink grout.

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

3.07 DISPOSAL OF DEMOLISHED MATERIALS

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

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

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

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

3.08 DISPOSAL, CLEAN-UP AND REPAIR

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

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

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

C. Repair demolition performed in excess of that required. Return structures and surfaces to remain to condition existing prior to commencement of selective demolition work. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.

D. Any damages to existing furnishings and/or equipment, shall be reimbursed by the general contractor, who shall recoup costs from other contractors as appropriate.

END OF SECTION
02.41.00

SECTION 06.10.00

ROUGH CARPENTRY

I. PART I - GENERAL

1.01 GENERAL

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

1.02 DESCRIPTION OF WORK

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

1. Blocking.

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

1.03 RELATED WORK

A. Section 02.41.00 - Selective Demolition.

B. Section 09.64.00 - Wood Athletic Flooring System

1.04 REFERENCES

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

B. APA - American Plywood Association.

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

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

E. NFPA - National Forest Products Association.

F. SFPA - Southern Forest Products Association.

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

H. WWPA - Western Wood Products Association.

1.05 QUALITY ASSURANCE

A. Lumber Grading Agency: Certified by ALSC.

B. Plywood Grading Agency: Certified by APA.

1.06 SUBMITTALS

A. Submit product data under provisions of Section 01300.

II. PART II - PRODUCTS

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

III. PART III - EXECUTION

3.01 INSTALLATION

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

END OF SECTION
06.10.00

SECTION 09.61.10

VAPOR MITIGATION AT SLAB

I. PART I - GENERAL

1.01 GENERAL

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

1.02 DESCRIPTION OF WORK

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

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

(a) New gym floor system.

2. Cementitious underlayment over floor receiving vapor mitigation.

B. **Alternates:** N/A

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

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

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

1. Section 09.64.00 - WOOD ATHLETIC FLOORING SYSTEM, for new gym floor assembly.

1.03 SUBMITTALS

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

1.04 QUALITY ASSURANCE

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

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

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

1.05 DELIVERY, STORAGE, AND HANDLING

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

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

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

1.06 PROJECT CONDITIONS

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

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

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

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

1.07 REFERENCES

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

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

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

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

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

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

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

1.08 WARRANTY

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

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

II. PART II - PRODUCTS

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

1. Wood Flooring System:
   (a) Per Section 09.64.00 - Wood Athletic Flooring System.

2.02 MANUFACTURER

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

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

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

1. Acceptable Products:

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

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

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

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

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

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

   (c) Performance and Physical Properties: Meet or exceed the following values for material cured at 70° F+/-3°F (21° C+/-3°C) and 50% +/-5% relative humidity:
      (i) ARDEX K 10™

a) Application: Barrel Mix or Pump
b) Flow Time: 10 minutes
c) Final Set: Approx. 90 minutes
d) Compressive Strength: 4500 psi (315 kg/cm^2) at 28 days, ASTM C109M.
e) Flexural Strength: 1000 psi (70 kg/cm^2) at 28 days, ASTM C348.
f) VOC: 0

(d) Water shall be clean, potable, and sufficiently cool (not warmer than 70°F).

2.03 SYSTEM

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

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

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

2.04 MIX DESIGNS FOR VAPOR MITIGATION COATING

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

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

III. PART III - EXECUTION

3.01 EXAMINATION

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

B. Examine substrates for compliance with requirements and for other conditions affecting performance of traffic coatings.

C. Prepare written report listing conditions detrimental to performance.

D. Verify compatibility with and suitability of substrates.

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

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

3.02 PREPARATION

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

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

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

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

E. Clean surfaces with vacuum to remove residue off the substrate. Remove defective materials, and foreign

matter such as dust, adhesives, leveling compounds, paint, dirt, floor hardeners, bond breakers, oil, grease, curing agents, form release agents, efflorescence, laitance. Shot blast bee bees, etc. Repair cracks, expansion joint, control joints, and open surface honeycombs and fill in accordance with manufacturer's recommendations. Reinforcing fibers must be burned off, scraped and vacuumed, after shot blasting, leaving no fibers left on the concrete surfaces. Provide uncontaminated, sound surface.

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

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

3.03 CRACK AND JOINT TREATMENT

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

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

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

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

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

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

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

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

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

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

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

3. A sand broadcast is required for certain applications; see the technical data sheet. Where required, sand broadcast must proceed while the ARDEX MC RAPID is still in a fresh state (maximum 20 minutes).

ARDEX recommends wearing an N-95 dust mask when broadcasting sand.

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

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

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

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

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

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

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

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

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

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

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

1. ARDEX V 1200™ must be installed at a minimum thickness of 1/8" (3 mm) over the highest point in the floor, which typically results in an average thickness of ¼" (6 mm) or more over the entire floor. ARDEX V 1200™ can be installed up to 1 ¼" (3 cm) thick and can also be tapered to as thin an application as the sand will allow to match existing elevations. If a true featheredge is needed, ARDEX recommends using ARDEX FEATHER FINISH® for transitions.

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

E. Curing

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

3.06 FIELD QUALITY CONTROL

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

3.07 CLEANING

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

3.08 PROTECTION

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

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

END OF SECTION
09.61.10

SECTION 09.64.00

WOOD ATHLETIC FLOORING SYSTEM

I. PART 1 - GENERAL

1.01 GENERAL

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

1.02 DESCRIPTION OF WORK

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

1. **Final surface prep of substrates to receive flooring.**
2. Wood athletic flooring systems
3. Transitions / Thresholds
4. Sports striping / Finishes

B. **Alternates:** N/A

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

D. **Items to Be Furnished Only:** Furnish the following items for installation by the designated Sections:

1. None.

E. **Related Work Specified Elsewhere:** The following items are not included in the Section, and will be performed under the designated Section:
1. Section 02.41.00 - SELECTIVE DEMOLITION *for removal of existing flooring system.*
2. Section 06.10.00 - ROUGH CARPENTRY *for misc. blocking.*
3. Section 09.61.10 - VAPOR MITIGATION AT SLAB *initial floor prep and moisture mitigation.*
4. Section 09.64.10 - RESILIENT FLOORING *for patching VCT flooring.*
5. Section 12.66.23 - TELESCOPING SEATING for blocking required under new bleachers.

1.03 REFERENCES

A. Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.

B. MFMA – Maple Flooring Manufactures Association

C. MFMA PUR – MFMA Performance Uniformity Rating

D. DIN 18032-2 - Performance Standard

E. ASTM F2772 - Athletic Performance of Indoor Sport Systems

F. EN 14904 – European Committee of Standardization for Indoor Sports Surfaces

G. FIBA – International Basketball Federation

H. FSC – Forest Stewardship Council FloorScore – Certified product by CDPH 01350

1.04 SUBMITTALS

A. Product and Tech Data

1. Submit shop drawings, seaming plan, edge details, and manufacturer's technical data, proper storage and handling plan, installation and maintenance instructions for flooring and accessories.
2. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section 01.30.00.

B. Samples

1. Submit the manufacturer's standard samples showing the required colors for flooring, welding rods, and applicable accessories.
2. Selection Samples: For each finish product specified, two complete sets of color samples representing manufacturer's full range of available colors and patterns.
3. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

C. MSDS

1. Submit Material Safety Data Sheets (MSDS) available for flooring products, adhesives, weld rod, patching/leveling compounds, floor finishes (polishes) and cleaning agents.

D. Closeout Submittals:

1. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with Division 1 Closeout Submittals (Maintenance Data and Operation Data) Section. Include methods for maintaining installed products, and precautions against cleaning materials and methods detrimental to finishes and performance.
2. Warranty: Warranty documents specified herein.

1.05 QUALITY ASSURANCE

A. Single-Source Responsibility: provide types of flooring and accessories supplied by one manufacturer, including leveling and patching compounds, and adhesives.

B. Installer Qualifications:
1. Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project for a minimum of (10) years and approved by the manufacturer.
2. Certificate: When requested, submit certificate indicating qualification.
3. Manufacturer’s Qualifications: Manufacturer capable of providing field service representation during construction and approving application method. Engage installers certified by flooring manufacturer as Certified Installers. Confirm installer's certification by requesting their credentials.
4. The flooring contractor must be approved by the manufacturer.

C. Pre-installation Meetings: Conduct pre-installation meeting (with all parties) to verify project requirements, substrate conditions, manufacturer’s instructions and manufacturer’s warranty requirements. Comply with Division 1 Project Management and Coordination (Project Meetings) Section.

D. Pre-installation Testing: Conduct pre-installation testing as required by the flooring manufacturer to ensure that the substrate is suitable for installation of the flooring and that the assembly will be eligible for warranty. *Refer to item 3.03, Section D.*

E. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
1. Mock-up areas designated by Architect and shall be part of the floor area.
2. Do not proceed with remaining work until workmanship, color, and gloss are approved by Architect and

the owner.
3. Rebuild mock-up area as required to produce acceptable work.
4. Approved work may remain in place.

F. Floor system manufacturer and flooring shall be independently verified by the guidelines of the ISO 14064-1:2006 World Resource Institutes Greenhouse Gas Protocol, Scope 1, 2 and 3.

G. Floor system manufacturer and flooring shall be registered in the Collaborative for High Performance Schools (CHPS) Product Database.

H. Flooring system shall be independently verified to meet or exceed the SCORES criteria for environmental design and athletic performance: Sustainable Construction of Renewable Engineered Surfaces.

I. Floor system manufacturer must provide a Life Cycle Assessment and an Environmental Product Declaration (EPD) in accordance with the Product Category Rule Version 2.2014.

J. Floor system manufacturer must be FloorScore Certified in accordance with CDPH 01350.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Comply with Division 1 Product Requirements Sections.

B. Ordering: Comply with manufacturer’s ordering instructions and lead time requirements to avoid construction delays.

C. Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

D. Delivery: Deliver materials in manufacturer’s original, unopened, undamaged containers with identification labels intact.

E. Storage and Protection: Store materials at temperature and humidity conditions recommended by manufacturer and protect from exposure to harmful weather conditions.

1.07 PROJECT CONDITIONS

A. Temperature Requirements: Maintain air temperature in spaces where products will be installed for time period before, during and after installation as recommended by manufacturer.

B. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.

C. The flooring system shall not be delivered and installed until all other prep-work in the rooms are complete.

D. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits:
1. Flooring must be stored in a dry, well-ventilated area, not in contact with masonry, to acclimate to building conditions and shall be installed at moisture content compatible with the normally expected environmental range of temperature and relative humidity achieved while the facility is occupied.
2. Industry standards recommend maintaining indoor relative humidity between 35 percent and 50 percent, and air temperatures between 55 degrees and 75 degrees year-round. By limiting wide swings in atmospheric conditions inside the facility, the expansion and contraction of the flooring system will be limited as the flooring is manufactured at a moisture content most compatible with this range. A 15 percent fluctuation in indoor relative humidity will not adversely affect the maple. Excessive shrinkage and/or expansion may occur with indoor relative humidity variations that exceed 15 percent. The geographical region and HVAC determine the typical range of temperature and humidity for each

facility. In buildings where air conditioning is not available, the use of circulating or venting fans will help facilitate excessive shrinkage or expansion.

3. General Contractor shall lock floor area after floor is finished to allow proper cure time. If general contractor or owner requires use of gym after proper cure time, they shall protect the floor by covering with non-marring craft paper or red rosin paper with taped joints until acceptance by owner of complete gymnasium floor.

1.08 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.

B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to and not a limitation of, other rights Owner may have under Contract Documents.

C. During the warranty period, the floor cannot be coated without the permission of the floor contractor.

D. Warranty Periods:
   1. Manufacturer warrants its sub floor construction materials to be free from manufacturing defects for a minimum of two years and its integrated surfaces to be free from manufacturing defects for **(1) year.**
   2. Installer's warranty **(1) year**, commencing on Date of Substantial Completion.

1.09 MAINTENANCE

A. Extra Materials: Deliver to Owner extra materials from same production run as products installed. Package products with protective covering and identify with descriptive labels. Comply with Division 1 Closeout Submittals (Maintenance Materials) Section.
   1. Quantity: (1) Box of hardwood flooring.
   2. Delivery, Storage and Protection: Comply with Owner's requirements for delivery, storage and protection of extra materials.
   3. Cleaning: Furnish flooring manufacture's neutral cleaner for initial cleaning and maintenance of finished floor surface.

II. PART 2- PRODUCTS

2.01 MANUFACTURER

A. Basis of design shall be ActionCush II as provided by Action Floor Systems, LLC. All system component parts must be supplied by Action Floor Systems, LLC.; Email: request info info@actionfloors.com or contact:

Action Floor Systems, LLC
4781 N. US Highway 51
Mercer, WI 54547-9708 U.S.A.

Toll Free: 1.800.746.3512
Phone: 715.476.3512

B. Owner approved equal systems by the following manufacturer:
   1. Conor, DuraCushion II
   2. Horner, Thrust-A-Cushion
   3. Requests for substitutions will be considered in accordance with provisions of Section 01.60.00.

2.02 MATERIALS

A. Flooring:

1. Flooring shall be Northern Hard Maple standard strip flooring, 25/32" x 2-1/4" (20mm x 57mm), TGEM, MFMA grade marked & stamped as manufactured by Action Floor Systems, LLC.
2. Grades available are MFMA 2nd&Btr.
3. Expansion Ridge Technology (ERT) 1/64" milled expansion spacer.

B. Subfloor:
1. ActionCush sleepers shall be laminated 1-1/2" x 2-1/2" x 8'-0" (38mm x 64mm x 2.4m), each with eight pads attached as supplied by Action Floor Systems, LLC.
2. Action E-Cush resilient pads shall be approximately 3/8" x 2" x 2" (10 x 50 x 50mm).
3. Panels shall be 15/32" x 4' x 8' (12mm x 1.2M x 2.4M). HPS, exposure 1 rated sheathing, minimum APA span rating of 32/16.

C. Fastener:
1. Subfloor fasteners shall be 1" (25mm) coated staples.
2. Flooring fasteners shall be 2" (50mm) cleats, or 15-gauge coated staples.

D. Wall Base:
1. Wall base shall be 3" x 4" (76mm x 102mm) vented cove base with pre-molded outside corners (black) as supplied by Action Floor Systems, LLC. as part of the flooring system.

E. Transitions: Provide transition/reducing strips tapered to meet abutting materials.

F. Threshold: Provide wood threshold of thickness and width as required to bridge joints between new and old work.
1. Aluminum Door Threshold by Pemko. Saddle Type, 7" width, 1/4" to ½" rise.

III. PART 3 - EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

A. Compliance: Comply with manufacturer's product data, including technical bulletins, product catalog, installation instructions, and product carton instructions for installation and maintenance procedures as needed.

3.02 EXAMINATION

A. Site Verification of Conditions: Verify substrate conditions (which have been previously installed under other sections) are acceptable for product installation in accordance with manufacturer's instructions (i.e. moisture tests, bond test, pH test, etc.).

B. Visual Inspection: Visually inspect flooring materials, adhesives and accessories prior to installation. Flooring material with visual defects shall not be installed and shall not be considered as a legitimate claim.

C. Examine sub-floors prior to installation to determine that surfaces are smooth and free from cracks, holes, ridges, and other defects that might prevent adhesive bond or impair durability or appearance of the flooring material.

D. Inspect sub-floors prior to installation to determine that surfaces are free from curing, sealing, parting and hardening compounds; residual adhesives; adhesive removers; and other foreign materials that might prevent adhesive bond. Visually inspect for evidence of moisture, alkaline salts, carbonation, dusting, mold, or mildew.

E. Report conditions contrary to contract requirements that would prevent a proper installation. Do not proceed with the installation until unsatisfactory conditions have been corrected.

F. Failure to call attention to defects or imperfections will be construed as acceptance and approval of the sub-floor. Installation indicates acceptance of substrates with regard to conditions existing at the time of

installation.

3.03 PREPARATION

A. Verify that the sub-floor has a maximum variation of 1/8" in 8'-0" in any direction, if this condition is found, it must be corrected prior to proceeding with flooring installation.

B. Sub-floor Preparation: removing rough areas, projections, ridges, and bumps, and filling low spots, joints, and other defects with manufacturer's patching products, as required by manufacturer for warranty acceptance.

C. Sub-floor Cleaning: Remove paint, varnish, oils, release agents, sealers, and waxes. Remove residual adhesives as recommended by the flooring manufacturer. Remove curing and hardening compounds not compatible with the adhesives used, as indicated by a bond test or by the compound manufacturer's recommendations for flooring. Avoid organic solvents.

D. Moisture Testing: Perform sub-floor moisture testing in accordance with ASTM F 2170, Standard Test Method for Determining Relative Humidity in Concrete Slabs Using in-situ Probes and Bond Tests as described in manufacturer's installation literature, to determine if surfaces are dry; free of curing and hardening compounds, old adhesive, and other coatings; and ready to receive flooring. Relative humidity shall not exceed manufacturer's requirements for Percent Relative Humidity and the Moisture Vapor Emission Rate. Do not proceed with flooring installation until results of moisture tests are acceptable. All test results shall be documented and retained. **All testing shall be coordinated between the General Contractor and the flooring installer to occur directly after demolition is complete and prior to the installers being on site to install the work so test results / required remediation measures do not delay the overall schedule.**

E. Surface Cleaning: Vacuum or broom-clean surfaces to be covered immediately before the application of flooring. Make sub-floor free from dust, dirt, grease, and all foreign materials.

3.04 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Place the ActionCush sleepers system end-to-end in a brick pattern at right angles to the intended direction of the finished flooring with end joints staggered a minimum of 24"(600mm) and fasten overlapping ends. The sleepers shall be spaced 12"(300mm) on center. Allow 2" (50mm) voids at perimeter and vertical obstructions.

C. Install solid blocking at doorways, bleacher stack / attachment areas and as needed elsewhere.

D. Place the sheathing in a brick pattern over sleepers at a 45 or 90-degree angle to the direction of finish flooring, 1/4" (6mm) spacing on all edges and breaking joints 4' (1.2m). Attached with 1" (25mm) fasteners 12" on center on each sleeper. Allow 2" (50mm) expansion voids at perimeter and vertical obstructions.

E. Machine nail strip flooring approximately 10"-12" (300mm) O.C. End joints must be properly driven up. Provide adequate expansion at regular intervals across the floor during installation as dictated by the average humidity conditions of the area according to the recommendations of the local Action Flooring Systems , LLC flooring contractor. Allow 2" (50mm) expansion voids at perimeter and all vertical obstructions.

3.05 FLOOR SANDING

A. Use coarse, medium, and fine grade sandpaper.

B. After sanding, buff entire floor using 100-grit screen or equal grit sandpaper, with a heavy-duty buffing machine.

C. Vacuum or tack floor before first coat of finish.

D. Floor shall present a smooth surface without drum stop marks, gouges, streaks or shiners.

3.06 FINISHING

A. Inspect entire area of floor to ensure that the surface is acceptable for finishing, completely free from sanding dust and perfectly clean.

B. Apply seal and finish per manufacturer's instructions.

C. Buff and vacuum or tack between each coat after it dries.

D. Apply game lines accurately after the seal coat, after buffing and vacuuming. Lay out in accordance with drawings. For game lines, use current rules of association having jurisdiction. Lines shall be straight with sharp edges in colors selected by the architect. Game line paint shall be compatible with finish.

3.07 BASE INSTALLATION

A. Affix rubber base to wall with recommended adhesive or screws. Miter all corners carefully. Use pre-molded outside corners. Install aluminum thresholds as required, anchoring firmly in concrete floor beyond limits of wood flooring.

3.08 TRANSITIONS / THRESHOLDS

A. Per the flooring system’s manufacturer’s written instructions and approved details.

3.09 FIELD QUALITY REQUIREMENTS

A. Manufacturer's Field Services: Upon Owner's request, provide manufacturer's field service consisting of product use recommendations or if required a site visit for inspection of product installation in accordance with manufacturer's instructions.

3.10 CLEANING

A. Perform initial and on-going maintenance according to the latest edition of manufacturer’s cleaning and care instructions.

B. At Substantial Completion, clean and apply two coats of manufacturer’s recommended floor wax or sealer.

C. Clean up all unused materials and debris and remove from premises, properly dispose of all waste materials.

3.11 PROTECTION

A. Protect installed flooring as recommended by the flooring manufacturer against damage from rolling loads, other trades, or the placement of fixtures and furnishings.

B. Touch-up, repair or replace damaged products before Substantial Completion

3.12 MAINTENANCE

A. Upon completion of floor installation, the owners, attendants, or individuals in charge and responsible for the upkeep of the building are to see that the care and maintenance instructions of the MFMA are followed. Failure to do so may void warranty.

END OF SECTION
09.64.00

SECTION 09.65.00

RESILIENT FLOORING

I PART 1 - GENERAL

1.01 GENERAL

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

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

1.02 DESCRIPTION OF WORK

A. **Work included:** Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
   1. Vinyl Composition Tile
   2. Vinyl Cove base
   3. Reducer strips (transition from VCT to other flooring material)
   4. Final preparation of substrates to receive materials specified herein.

B. **Alternates:** N/A

C. **Work to Be Performed by Owner:** The following work shall be performed by the owner prior to the start of the contract:

   1. Abatement of select ACT direclty adjacent to the work area / affected by the scope of work. WPS to have work complete and cleared prior to the start to the prime contractor's work.

D. **Items to Be Installed Only:** Install the following items as furnished by the designated Sections:

   1. None. All items to be installed by this trade, shall be furnished by this trade.

E. **Items to Be Furnished Only:** Furnish the following items for installation by the designated Sections:

   1. None.

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

   1. Section 09.64.00 - WOOD ATHLETIC FLOORING SYSTEM *for adjacent thresholds / transitions.*

1.03 SUBMITTALS

A. Submit under provisions of Section 01.33.00.

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

C. Submit samples of full range of colors available for tile and base. Provide two chains of color chips for each type of material requiring color selection.

1.04 ENVIRONMENTAL REQUIREMENTS

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

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

1.05 REFERENCES

A. ASTM D 2047, Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine.
B. ASTM E 662, Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials.
C. ASTM F 970, Standard Test Method Fro Static Load Limit.
D. ASTM F1482, Standard Guide to Wood Underlayment Products Available for Use Under Resilient Flooring
E. ASTM F1303, Standard Specification for Sheet Vinyl Floor Covering with Backing
F. (RFCI) Resilient Floor Covering Institute
    1. RFCI Standard Slab Moisture Test Method (Calcium Chloride Method)

1.06 QUALITY ASSURANCE:

A. Installer Qualifications: Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project.
    1. Training: Installer who has attended a training clinic from the Sheet Vinyl Manufacturer.

B. Regulatory Requirements: Provide slip resistant sheet vinyl safety flooring in compliance with the following:
    1. Americans with Disabilities Act Architectural Guidelines (ADAAG).
    2. Occupational Safety & Health Administration (OSHA).

1.07 SITE CONDITIONS

A. Temperature Requirements: If storage temperature is below 65F (18C) or the floor temperature is below 50F (18C), the Altro safety flooring product must be moved to a warmer place and allowed to reach this temperature before unrolling or installation.

B. Maintain air temperature and structure base temperature at flooring installation area between 68F (20C) and 80F (26C) for 48 hours before, during and 24 hours after.

1.08 WARRANTIES:

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

II PART 2 PRODUCTS

2.01 VINYL COMPOSITION TILE

A. Manufacturer: Armstrong (Series standard "Excelon Imperial Texture"), Tarkett, Mannington or approved equal meeting the following criteria:

B. Properties:

    1. Size: 12" x 12" x 1/8" thick.
    2. Composition: Polyvinyl chloride resin binder, plasticizers, filler and pigments with color and texture dispersed uniformly throughout its thickness.
    3. ASTM F 1066, class 2 through pattern.
    4. All terminations, reducers and transitions required shall be by the manufacturer.
    5. Colors: to be selected by Owner (WPS standard color)

2.02 VINYL BASE

A. Manufacturer: Armstrong, Johnsonite, Roppe, or approved equal meeting the following criteria:

1. 6" inches high, 0.125 gauge thick.
2. Rounded top with cove base, and ribbed back.
3. Interior corners shall be cut and coped (not mitered or formed from a single piece).
4. Colors: to be selected from Owner.

2.03 ACCESSORIES

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

B. Primers and Adhesives shall be waterproof and of type recommended by the manufacturer of the resilient flooring used, and shall be low odor and low VOC type.

III PART 3 EXECUTION

3.01 EXAMINATION

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

1. Coordinate transition between bathroom flooring and new VCT prior to the start of either installation.
2. Install filling material as required to create smooth transition.

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

C. Verify that new underlayment has been installed and is soundly attached. Verify surfaces are smooth and flat with maximum variation of 1/8 inch in 10 ft , and are ready to receive Work.

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

3.02 PREPARATION

A. Fill small damaged areas, low spots, fastener heads and all sub floor / underlayment seams with manufacturer’s recommended sub floor filler.

B. Remove sub-floor ridges and bumps.

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

D. Prohibit traffic from area until filler is cured.

E. Vacuum clean substrate.

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

3.03 TILE INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Mix tile from container to ensure shade variations are consistent. Install tile with the grain in one direction or a quarter turn, at the preference of the Housing Authority. If installed in one direction, install all flooring with the grain parallel with the shortest room dimension.

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

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

E. Terminate flooring or make color change at centerline of door openings where adjacent floor finish is dissimilar.

F. Install metal edge strips at unprotected or exposed edges, and where flooring terminates.

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

3.04 BASE INSTALLATION

A. Install vinyl base at all new flooring locations and on all new cabinet toe-kicks. Where cabinets have exposed ends, including at undercounter wheelchair space, apply vinyl base to ends and return to wall.

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

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

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

E. Install base on solid backing. Repair existing plaster as required to create a level, sound substrate. Bond tight to wall and floor surfaces.

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

3.05 PROTECTION

A. Prohibit traffic on floor finish for 48 hours after installation.

B. Cover and protect finished installation form damage from other trades using a non-staining, temporary floor protection system, such as a reusable textured plastic sheeting.

3.06 CLEANING

A. Remove excess adhesive from floor, base, and wall surfaces without damage.

B. Clean, seal, and wax floors with two coats in accordance with manufacturer's instructions.

END OF SECTION
09.65.00

SECTION 12.66.23

TELESCOPING SEATING

I. PART 1 - GENERAL

1.01 GENERAL

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

1.02 DESCRIPTION OF WORK

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

1. Telescopic Gym Seating includes **manually operated** multiple-tiered seating rows comprising of seat, deck components, understructure that permits closing without requiring dismantling, into a nested configuration for storing or for moving purposes:

2. Wall-attached telescoping stands

B. **Alternates:** See Section 01.23.00 - Alternates

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

D. **Items to Be Furnished Only:** Furnish the following items for installation by the designated Sections:

1. None.

E. **Related Work Specified Elsewhere:** The following items are not included in the Section, and will be performed under the designated Section:
1. Section 02.41.00 - SELECTIVE DEMOLITION *for removal of existing bleachers.*
2. Section 06.10.00 - CARPENTRY *for misc. blocking.*
3. Section 09.64.00 - WOOD ATHLETIC FLOORING SYSTEM *for coordinating attachment / support*

1.03 REFERENCES

A. Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.

B. Aluminum Association (AA):
1. ADM 1- Aluminum Design Manual

C. American Institute of Steel Construction (AISC):
1. AISC 360- Steel Construction Manual.

D. American Iron & Steel Institute (AISI):
1. AISI S100 – Design of Cold Formed Steel Structural Members.

E. American Society for Testing Materials (ASTM):
1. ASTM - Standard Specifications for Properties of Materials.

F. American Wood Council (AWC):

1. ANSI/AWC NDS (National Design Specification for Wood Construction).

G. American Welding Society (AWS):
   1. AWS D1.1 Structural Welding Code – Steel
   2. AWS D1.3 Structural Welding Code - Sheet Steel

H. Canadian Welding Bureau: CWB Division 3 W47.1

I. U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines.

J. Forest Stewardship Council:
   1. Chain of Custody Certification (FSC-STD-40-004)

K. International Building Code (IBC): 9th Edition with MA amendments (2015)

L. National Fire Protection Association (NFPA):
   1. NFPA 2015:

M. National Institute of Standards and Technology (NIST)
   1. PS 1: Structural Plywood.

N. Southern Pine Inspection Bureau (SPIB):
   1. SPIB: Standard Grading Rules for Southern Pine.

1.04 PERFORMANCE REQUIREMENTS

A. Structural Performance: Engineer, fabricate and install telescopic gym seating systems to the following structural loads without exceeding allowable design working stresses of materials involved, including anchors and connections. Apply each load to produce maximum stress in each respective component of each telescoping stand unit according to IBC 2015.

B. Manufacturer's System Design Criteria:

   1. Gymnasium seat assembly; Design to support and resist, in addition to its own weight, the following forces:
      (a) Live load of 120 lbs. per linear foot (1.75 kN/m) on seats and decking
      (b) Uniformly distributed live load of not less than 100 psf (4.79 kN/m2) of gross horizontal projection.
      (c) Parallel sway load of 24 lbs. per linear foot (0.35 kN/m) of row combined with b.) above.
      (d) Perpendicular sway load of 10 lbs. per linear foot (0.15 kN/m) of row combined with uniformly distributed live load above.
      (e) Parallel and Perpendicular sway loads are not applied concurrently.
   2. Hand Railings, Posts and Supports: Engineered to withstand the following forces applied separately:
      (a) Concentrated load of 200 lbs. (0.89 kN) applied at any point and in any direction.
      (b) Uniform load of 50 lbs. per foot (0.73 kN/m) applied in any direction.
   3. Guard Railings, Post and Supports: Engineered to withstand the following forces applied separately:
      (a) Concentrated load of 200 lbs. (0.89 kN) applied at any point and in any direction along top rail.
      (b) Uniform load of 50 lbs. per foot (0.73 kN/m) applied in any direction at top rail
      (c) Uniform load of 50 lbs. (0.22 kN) applied on an area equal to 1 ft2 (0.09 m2) applied on all guardrail infill panels.

1.05 SUBMITTALS

A. Product and Tech Data

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

   2. Environmental Data Package: Provide project specific environmental data work sheet with project

header and LEED calculations completed based on actual project weight and project price. Environmental Data Package required to be submitted with formal submittal package prior to project award.

(a) Regional Manufacturing:
  (i) Provide manufacturing location and distance to project site by product material type as required. Use straight-line travel as defined by USGBC.

(b) Recycled Content:
  (i) Provide Packaging Material Listing & Recycled Content by Material Type; total percentage of recycled content, total percentage of pre consumer and post consumer materials.

(c) Indoor Environmental Quality:
  (i) Provide documentation that the specified product passes ANSI/BIFMA X7.1-2007 Standard for Formaldehyde and TVOC Emissions of Low-emitting Office Furniture Systems and Seating.
  (ii) Provide documentation that the specified product solid core ply-form or engineered fiber panels are manufactured with resins that are free of added urea-formaldehyde.

(d) Product Life Cycle Deconstruction & Reclaiming Opportunity:
  (i) Provide listing of product materials that can be recycled at the end of the product life cycle and re-enter the recycled or reuse material stream.

3. Shop Drawings: For telescoping stands in both stacked and extended positions. Show seat heights, row spacing and rise, aisle widths and locations, assembly dimensions, anchorage to supporting structure, material types and finishes.
   (a) Electrical: Indicate power supply requirements.

B. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section 01.30.00.

1.06 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified manufacturer and installer.

B. Welding certificates.

C. Product Test Reports: Load test to all loads, observed by a qualified independent testing laboratory, and certified by a registered professional structural engineer verifying the integrity of the manufacturer's design.

D. Warranty: Manufacturers standard warranty documents.

1.07 CLOSEOUT SUBMITTALS:

A. Operation and Maintenance Data: For telescopic bleacher to include video operations manual.

B. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with Division 1 Closeout Submittals (Maintenance Data and Operation Data) Section. Include methods for maintaining installed products, and precautions against cleaning materials and methods detrimental to finishes and performance.

1. Warranty: Warranty documents specified herein.

1.08 QUALITY ASSURANCE

A. Manufacturer's Qualifications: A minimum of 40 years of experience manufacturing telescoping stands and can demonstrate continual design enhancement and 25-year minimum product life-cycle support of telescopic seating.

B. Installer Qualifications: Factory certification by the manufacturer.
   1. Project list: Ten projects of similar size, complexity and in service for at least five years.

C. Welding Qualifications: Qualify procedures and personnel according to AWS D1.3, "Structural Welding Code - Sheet Steel."

D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
E. Seating Layout: Provide telescoping stands to comply with **IBC 2015** Standard for Bleachers, Folding and Telescopic Seating, and Grandstands, except where additional requirements are indicated or imposed by authorities having jurisdiction.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Comply with Division 1 Product Requirements Sections.

B. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

C. Deliver telescoping stands in manufacturers packaging clearly labeled with manufacturer name and content.

D. Handle bleacher equipment in a manner to prevent damage.

E. Deliver the telescoping stands at a scheduled time for installation that will not interfere with other trades operating in the building when at all possible.

1.10 PROJECT CONDITIONS

A. Field Measurements: Coordinate actual dimensions of construction affecting telescoping stands installation by accurate field measurements before fabrication. Show recorded measurements on final shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid delay of Work.

B. The system shall not be delivered and installed until all flooring and all other prep-work is complete.

1.11 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.

B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to and not a limitation of, other rights Owner may have under Contract Documents.

C. Manufacturer's Warranty: Includes the repair or replacement of the defective product; or defective component thereof, with a comparable product; or component thereof, or a refund of the purchase price prorated over the warranty period.
1. Includes: Labor, materials, and freight for replacement or repairs.
2. Structural Component parts of Understructure **Warranty Period: 10 years** from Date of Acceptance.
3. Decking systems, seating collections, electrical, portable and integral dolly systems, end closure curtains, surface material finishes **Warranty Period 5 years** from Date of Acceptance.

II. PART 2- PRODUCTS

2.01 WOOD

A. Plywood: NIST PS 1, APA-grade trademarked, A-C grade, clear-coated / anti-slip.

2.02 STEEL

A. Structural-Steel Shapes, Plates, and Bars: ASTM A36.

B. Galvanized-Steel Sheet: ASTM A653, coating designation G60.

C. Uncoated Steel Strip; Non-Structural Components: ASTM A1011, Commercial Quality, Type B, Hot-Rolled Strip.

D. Uncoated Steel Strip; Structural Components: ASTM A1011 Grade 33 (228 MPa), Grade 36 (249 MPa), Grade 40 (276 MPa), Grade 45 (311 MPa), or Grade 50 (345 MPa), Structural Quality, Hot-Rolled.

E. Galvanized Steel Strip: ASTM A653 Grade 40 (276 MPa), structural quality, coating designation G60.

F. Tubing: ASTM A500, cold formed; Grade B.

2.03 POLYETHYLENE PLASTIC:

A. High-density polyethylene; injection molded, color-pigmented, textured, impact-resistant, and dimensionally stable.

2.04 MANUFACTURER

A. Basis of design shall be Hussey Seating Company, U.S.A.
1. Address: North Berwick, Maine, 03906.
2. Telephone: (207) 676-2271; Fax: (207) 676-9690.
3. Product: MAXAM Telescopic Gym Seat System.
4. Local Vendor:
Robert H. Lord Co., 220 Chapel Road, Manchester, CT 06042. www.rhlco.com
Jon Lord: 1.860.729.9215

B. Owner approved equal systems by the following manufacturer:
1. Folding Equipment Company
2. Irwin Seating Company
3. Requests for substitutions will be considered in accordance with provisions of Section 01.60.00.

2.05 TELESCOPING STANDS

A. Wall-Attached Telescoping Stands: Forward-folding system with the rear of the understructure permanently attached to the floor and to the rear wall. Rear wall provides structural support and must support loads imposed by the bleacher.

2.06 DIMENSIONAL AND OPERATIONAL CRITERIA

A. Dimensions:
1. Bank Length: **41'-0"**
2. Aisle Width: **4'-6"**
3. Number of Tiers: **8**
4. Row Spacing: **24 inches (610 mm)**
5. Row Rise: **9-5/8 inches (244 mm)**
6. Open Dimension: **16'-2 5/16**
7. Closed Dimension: **3'-7"**
8. Overall Unit Height: **7'-0 7/16"**
9. Net capacity is based on per seat 18 inches (457 mm)
10. Net Capacity: **374 (per section)**
11. Maximum Net Capacity; with Flex Row Fully Recovered: **350 / 374**

B. Operation: Manual
1. Manual: User operates system by manually pulling/pushing each section with operating handles

2.07 SEATING

A. Polymer Seat System: Courtside Collection XC10.

1. Material: Gas assist injection-molded, 100 percent recyclable HDPE, high density polyethylene.
2. Module Size: 18 inches (457 mm) long by 10 inches (254 mm)]deep.
3. Module Load: Tested to 600 lbs. (2.67 kN).
4. Seat height of 16 1/8 inches (410mm) for 9 5/8 inch rise bleachers.
5. Seat height range from deck to top of seat: 16-1/8 inches (410 mm).
6. Integrally molded end caps at aisle end locations.
7. Integrally molded recess pockets to accept seat number and row letters.
8. Integrally molded rear closure panel at back of seat to allow for "continuous clean sweep" of debris at deck level and minimized visibility of structural ribbing.
9. Color: As selected by Owner / Architect from manufacturers 15 standard colors.

B. ADA Accessible Seating:
1. Locate first tier modular units to provide wheelchair-accessible seating at locations indicated on Drawings.
2. Flex-RowTM: Provide first row modular recoverable seating units that can be closed to accommodate persons requiring ADA spaces (or any other temporary space needs) or opened for standard usage. Each Flex-Row unit shall have a handle for easy operation.
   (a) Provide a black full-surround steel skirting with no more than ¾" floor clearance for safety and improved aesthetics.
   (b) Provide a black injection molded end cap for the nose beam for safety and improved aesthetics.
   (c) Provide a mechanical positive lock when the Flex-Row system is in both the open and closed position. Handle shall unlock the modular recoverable seating unit for operation.
   (d) Flex-Row can be utilized with the full system in the open or closed position.
   (e) Flex-Row modular units are designed to achieve multi-use front row seating to accommodate team seating, ADA requirements and facility specific requirements. Flex-Row units are available in modular units from 2 to 7 seats wide as well as full section widths.
   (f) Flex-Row [Removable belt barrier].
   (g) Available with signage to mark the location of each recoverable Flex-Row module to assist with seating identification. Either seating option above or below can meet accessibility requirements.

2.08 RAILS, PANELS AND STEPS

A. End Rails:

1. [Self-storing]
   (a) Provide steel self-storing starting no higher than tier (2) 42 inches (1066mm) high above seat, end rail with tubular supports and intermediate members designed with 4 inch (102mm) sphere passage requirements.

B. Center Aisle Rails:

1. Manual Rotating:
   (i) Provide single pedestal mount handrails [34 inches (864mm)] high with terminating mid rail. Permanently attached handrail shall rotate in a permanently mounted socket for rail storage. Rail shall deploy easily, lock in the use position, and require intent and effort to unlock, and return to the stowed position. Ends of the handrail shall return to the post, and not extend away from it. Rails having openings to avoid interference with closed decks are not acceptable.

2. Material and Finish: [Semi-gloss][Gloss] powder coated steel.

3. Color: As selected by Owner / Architect from manufacturer's 15 colors.

4. Skirt Panel: On 1st Row, provide galvanized steel front skirt panel to prevent players/objects from sliding underneath the first row.

5. End Closure Curtain: For closed stack position at each exposed bank end.
   (a) Material: Vinyl (covers when open and closed).

(b) Color: As selected by Architect from manufacturer's 15 colors.

C. Steps

1. Sure-Step (Flip-up Front Aisle Step): Permanently hinged to the front row to ensure availability and ease of operation. Two 3" diameter x ¾" wide non-marking front wheels are provided so that the system can be operated with the Sure-Step in the stored or deployed position. All edges coined, hemmed or radiused with front edge protective rubber bumpers. Abrasive-backed non-slip tread identifier on leading edge of nosing. For aisle widths greater than 6'-0", two side by side hinged steps are provided.

2. Intermediate Aisle Steps: Fully enclosed, at each vertical aisle. Full radius end caps on all four edges. Adhesive-backed abrasive non-slip tread surface.

2.09 COMPONENTS

A. Section Lengths: Each bank shall contain sections not to exceed 27 feet (8230mm) in length with a minimum of two supporting frames per row, each section. Make selections by removal of alternates.

B. Decking
1. Plywood
(a) 5/8 inch (16 mm) thick AC grade tongue and groove Southern Yellow Pine with clear urethane, high gloss finish.

C. Understructure:
1. Finish: Rust-inhibiting black finish.
2. Hardware finish:Zinc-plated, Rust inhibiting black finish
3. Posi-locks and other surfaces: Powder coated black, Rust inhibiting black finish.
4. Nose beam and Rear Riser beam: Nose beam shall be continuously roll-formed closed tubular shape of ASTM A653 grade 40 (276 MPa). Riser beam shall be continuously roll-formed of ASTM A653 grade 40 (276 MPa). Nose and Riser beam shall be designed with no steel edges exposed to spectator after product assembly. Nose beam and riser beams are through-bolted fore/aft to deck stabilizers and frame cantilevers to create the deck structure.
5. Frame: The frames are welded assemblies (one left hand, one right hand per tier) comprised of the following components:
(a) Lower Track subassembly: ASTM A1011 Grade 50: Continuous Positive Interglide System (casterhorn) interlocks each adjacent frame casterhorn using an integral, continuous, anti-drift feature and captive interlock with adjustable row spacing at front to prevent separation and misalignment.
(b) Lower Track Wheels: 3 per frame Not less than 5 inches (127 mm) diameter by 1-1/4 inches (32 mm) with non-marring soft rubber face to protect wood and synthetic floor surfaces, with molded-in sintered iron oil-impregnated bushings to fit 3/8 inch (10 mm) diameter axles secured with E-type snap rings.
(i) Option: up to 6 wheels per frame for load distribution
(c) Slant Columns: A500 Grade B, tubular shape.
(d) Cantilever Subassembly: Consists of ASTM A1011 Grade 50 nose connection plate, cantilever, and riser attachment plate welded together into a subassembly.
6. Lock system: Casterhorns at the end sections of powered banks (minimally), and manual sections, contain a Low Profile Posi-Lock LX to lock each row in open position and allow unlocking automatically. Provide adjustable stops to allow field adjustment of row spacings.
7. Sway Bracing: ASTM A653 grade 40 (276 MPa), tension members bolted to columns.
8. Deck Stabilizer: A1011 Grade 45, member through-bolted to nose and riser at three locations per section. Securely captures front and rear edge of decking at rear edge of nose beam and lower edge of riser beam for entire length of section. Interlocks with adjacent stabilizer on upper tier using low-friction nylon roller to prevent separation and misalignment.

D. Fasteners: Vibration proof, in manufacturer's standard size and material.

2.10 FABRICATION

A. Fabricate understructure from structural-steel members in size, spacing, and form required to support design loads specified in referenced safety standard.

B. Weld understructure to comply with applicable AWS standards.

C. Round corners and edges of components and exposed fasteners to reduce snagging and pinching hazards.

D. Form exposed sheet metal with flat, flush surfaces, level and true in line, and without cracking and grain separation.

2.11 ACCESSORIES

A. Operating Handles: Manual operating handles; 3/4 inch (19 mm) OD steel tubing.
   1. Handles to engage at the first tier.

B. Rear Wall Column Cutouts: Provide custom bleacher cutouts at rear wall building columns. Top row(s) to be cut out and fitted to meet wall column conditions, where required.

2.12 GRAPHICS

A. N/A

III. PART 3 - EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

A. Compliance: Comply with manufacturer's product data, including technical bulletins, product catalog, installation instructions, and product carton instructions for installation and maintenance procedures as needed.

3.02 EXAMINATION

A. Site Verification of Conditions: Verify substrate conditions (which have been previously installed under other sections) are acceptable for product installation in accordance with manufacturer's instructions.

B. Visual Inspection: Visually inspect all materials and accessories prior to installation. Material with visual defects shall not be installed and shall not be considered as a legitimate claim.

C. Examine areas where telescoping stands are to be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

D. Report conditions contrary to contract requirements that would prevent a proper installation. Do not proceed with the installation until unsatisfactory conditions have been corrected.

E. Proceed with installation only after unsatisfactory conditions have been corrected.

F. Failure to call attention to defects or imperfections will be construed as acceptance and approval of the sub-floor. Installation indicates acceptance of substrates with regard to conditions existing at the time of installation.

3.03 PREPARATION

A. Surface Cleaning: Vacuum or broom-clean surfaces to be covered immediately before the application of flooring. Make sub-floor free from dust, dirt, grease, and all foreign materials.

3.04 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Tolerances:
   1. Flooring [and rear wall]: Level and plumb within 1/8 inch (3 mm) in 8 feet (2438mm).
   2. Maximum bleacher force on the floor of a 27 foot (8230 mm) section: Static point load of less than 300 psi (2068 kN/m2).

C. Install telescoping stands to comply with referenced safety standard and manufacturer's written instructions.

3.05 ADJUSTING AND CLEANING

A. On completion of installation, lubricate, test, and adjust each telescoping stand unit so that it operates according to manufacturer's written operating instructions.

B. Clean installed telescoping stands on exposed surfaces. Touch up shop-applied finishes or replace components as required to restore damaged or soiled areas.

3.06 MAINTENANCE SERVICE

A. Service Capability: Show proof of full time service capability by factory certified technicians directly employed by the installer.
B. A four to eight-hour maximum on-site repair response is required during normal working hours, 8 a.m. to 5 p.m. weekdays (excluding holidays).

C. All Full Time Service Personnel shall be Factory Authorized and Trained.

D. Provide proof of Service Capability and a list of service parts regularly maintained in inventory.

3.07 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain telescoping stands.

END OF SECTION
12.66.23

Appendix A:

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:	042205836
Customer ID:	ATC62
Customer PO:	
Project ID:	

Attention:	Brian Williams	**Phone:**	
	Atlas Technical	**Fax:**	(413) 781-3734
	73 William Franks Drive	**Received Date:**	03/18/2022 9:20 AM
	West Springfield, MA 01089	**Analysis Date:**	03/20/2022 - 03/21/2022
		Collected Date:	03/17/2022

Project: Elm Park School / 23 N Ashland St, Worcester / 183WPS2236

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**
EPS-1A *042205836-0001*	Gym Entry from Hallway - Dark Gray 9"x9" Floor Tile	Gray Non-Fibrous Homogeneous		97% Non-fibrous (Other)	3% Chrysotile
EPS-1B *042205836-0002*	Gym Entry from Hallway - Dark Gray 9"x9" Floor Tile				Positive Stop (Not Analyzed)
EPS-2A *042205836-0003*	Gym Entry from Hallway - Black Mastic on Dark Gray 9"x9" Floor Tile	Black Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
EPS-2B *042205836-0004*	Gym Entry from Hallway - Black Mastic on Dark Gray 9"x9" Floor Tile				Positive Stop (Not Analyzed)
EPS-3A *042205836-0005*	Gym Equipment Storage Room - Light Gray 9"x9" Floor Tile	Gray Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
EPS-3B *042205836-0006*	Gym Equipment Storage Room - Light Gray 9"x9" Floor Tile				Positive Stop (Not Analyzed)
EPS-4A *042205836-0007*	Gym Equipment Storage Room - Black Mastic on Light Gray 9"x9" Floor Tile	Black Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
EPS-4B *042205836-0008*	Gym Equipment Storage Room - Black Mastic on Light Gray 9"x9" Floor Tile				Positive Stop (Not Analyzed)
EPS-5A *042205836-0009*	Gym Lower Wall by Exterior Entry - Light Brown Cove Base Adhesive	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
EPS-5B *042205836-0010*	Gym Lower Wall by Exterior Entry - Light Brown Cove Base Adhesive	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
EPS-6A *042205836-0011*	Gym Girls Room - Ceramic Floor Tile Grout	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
EPS-6B *042205836-0012*	Gym Girls Room - Ceramic Floor Tile Grout	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
EPS-7A *042205836-0013*	Gym Girls Room - Ceramic Floor Tile Thinset	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
EPS-7B *042205836-0014*	Gym Girls Room - Ceramic Floor Tile Thinset	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 03/21/2022 12:26:10

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

EMSL Order:	042205836
Customer ID:	ATC62
Customer PO:	
Project ID:	

Analyst(s)

Christopher Ratcliffe (7)
Quynh Vu (3)

Samantha Rundstrom, Laboratory Manager
or Other Approved Signatory

Initial report from: 03/21/2022 12:26:10