



# The City of **WORCESTER**

Administration & Finance – Purchasing Division  
Christopher J. Gagliastro, MCPPO – Purchasing Director  
455 Main Street, Room 201, Worcester, MA 01608  
P | 508-799-1220  
[purchasing@worcesterma.gov](mailto:purchasing@worcesterma.gov)

October 5, 2026

To All Bidders:

Subject: **Bid No. 8800-M7 – Accessibility Renovations – New Citizen Center / WPS**

## **ADDENDUM NO. 6**

To Whom It May Concern:

With reference to our bid request relative to the above subject, please refer to the changes/modifications/clarifications to the original proposal request.

The attention of Bidders submitting proposals for the above subject project located in Worcester,

The attention of Bidders submitting proposals for the above subject project located in Worcester, Massachusetts called to the following Addendum to the Contract Documents. The items set forth herein, whether of omission, addition, substitution, or clarifications are all to be included in and form a part of the proposal submitted. This Addendum consists of Four (4) type-written pages and One (1) attachment of Seventy-Nine (79) Pages.

THE NUMBER OF THIS ADDENDUM (06) MUST BE ENTERED IN THE APPROPRIATE SPACE PROVIDED ON DOCUMENTS IN THE FOLLOWING SECTIONS:

DIVISION 00 SECTION 00 4000 - FORM FOR GENERAL BID

### **A. General:**

|  |                                               |
|--|-----------------------------------------------|
|  | Substantial completion date moved to 12/31/26 |
|  |                                               |

### **B. Specification Changes:**

| <b>SPEC SECTION</b> | <b>Change</b>                                                                                                                                                                                            |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 02 8200             | Updated to include missing areas discovered during follow up prebid walk                                                                                                                                 |
| 03 3000             | Added section 1.2.A.1.b                                                                                                                                                                                  |
| 03 3930             | Section 3.2.A: Updated ratio to 1:1 per basis of design manufacturer product specs.                                                                                                                      |
| 06 8316             | Updated thickness of FRP panels to standard .09 inch.                                                                                                                                                    |
| 08 7100             | Hardware Set 2: Updated exit devices, covers, and removed flush bolts<br>Hardware Set 3: Updated exit device, Closer, flush bolts, and added strike plates.<br>Hardware Set 5: Removed duplicate closer. |
| 09 3000             | Added section 3.2.B                                                                                                                                                                                      |
| 09 6723             | Added section 1.2.E.4<br>Section 2 Replaced entirely.<br>Updated section 3.2.B<br>Added section 3.2.G                                                                                                    |



**C. Drawing Changes:**

| SHEET # | Change                                                                                                                                                                                                                                                                                                                                                                                             |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AD-110  | Added floor demolition hatch and note to both classroom 11 and 21                                                                                                                                                                                                                                                                                                                                  |
| AD-410  | General: Updated keynote legend<br>Plan 1: Added floor demolition hatch and note to room 11 and floor demolition note for anticipated trenching in storage room.<br>Plan 4: Added floor demolition hatch and note for anticipated trenching in restroom.                                                                                                                                           |
| A-110   | Plan 1: Added missing room names and numbers.                                                                                                                                                                                                                                                                                                                                                      |
| A-410   | General: Updated keynote legend<br>Plan 1: Added hatch and note for floor patching after trenching. Added wall thickness to wall type C3C. Added slope notes to wet room.<br>Plan 2: Updated wall type to F4A<br>Plan 3: Added minimum ADA dimension, and dimensions for C3C walls to both restrooms.<br>Plan 4: Added hatch and note for floor patching after trenching & Updated door 103 to 36" |
| A-411   | Plan 1: Added wall type tag                                                                                                                                                                                                                                                                                                                                                                        |
| A-500   | Detail 1: Updated wall base.<br>Details 2-5: Updated casework details.                                                                                                                                                                                                                                                                                                                             |
| A-601   | Updated door schedule with missing values.                                                                                                                                                                                                                                                                                                                                                         |
| A-710   | Finish Plans: Added missing numbers & corrected finishes<br>Updated room finish schedule.                                                                                                                                                                                                                                                                                                          |

**D. Questions:**

|          |                                                                                                                                                                                                                                                                                                                    |
|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Question | <b>Section 03 3930 names Sikadur 25 Lo-Mod EPU and a 1:1 mix ratio, but §3.2 specifies 2:1. Please confirm the intended repair product</b>                                                                                                                                                                         |
| Answer:  | Section 3.2 Corrected to 1:1 ratio                                                                                                                                                                                                                                                                                 |
| Question | <b>Per the specs, 03 3000 and 03 5300, please identify the topping/mitigation areas and required topping thicknesses.</b>                                                                                                                                                                                          |
| Answer:  | •Areas requiring topping/mitigation: All floors receiving new flooring to receive topping and moisture mitigation as necessary to provide a warrantable finish quality.<br>•Mitigation thickness per section 09 6110 or as required by manufacturer                                                                |
| Question | <b>Door 103 – Accessible Staff Toilet: The Door Schedule (A-601) lists a 2'-6" x 7'-0" leaf. Please confirm the intended size, as a 2'-6" door would not provide the required accessible clear width. Should this be 3'-0"?</b>                                                                                    |
| Answer:  | Door 103 shall be 3'-0". Door schedule has been updated.                                                                                                                                                                                                                                                           |
| Question | <b>Door 105 – Life Skills: The schedule shows a 6'-0" DN pair with no panel widths. Please confirm leaf sizes (2 @ 3'-0"?).</b>                                                                                                                                                                                    |
| Answer:  | Door 105 shall be equal pairs. Door schedule has been updated.                                                                                                                                                                                                                                                     |
| Question | <b>Doors 101, 102, 104, 105 and 108 are scheduled in EXISTING frames. Please confirm the existing frames are to remain as-is and that new doors are to be field-fitted to them. Who is responsible for any frame preparation (reinforcement for continuous hinges, flush bolts, exit device strikes, closers)?</b> |
| Answer:  | Existing frames to remain with new equal/unequal leaves as scheduled. GC to prep frame.                                                                                                                                                                                                                            |



|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Question</b> | <b>Hardware Sets 2 and 3 (08 7100, 3.7) combine a rim exit device, flush bolts and a lever lockset on the same pair. Please confirm the intended function (vertical rod device, removable mullion, or other). Also, Set 5 lists the surface closer twice – please confirm quantity.</b>                                                                                                                                                     |
| <b>Answer:</b>  | <ul style="list-style-type: none"> <li>•Hardware sets 2 &amp; 3 have been modified, see attached revised specs.</li> <li>•Duplicate surface closer removed from set.</li> </ul>                                                                                                                                                                                                                                                             |
| <b>Question</b> | <b>FRP extent: The Room Finish Schedule (A-710) lists walls as P-1/EX for Accessible Toilets 9A and 12A, Accessible Staff Toilet and Wet Room 12, while the elevations on A-431 show FRP to 8'-0" in those rooms. Please confirm which rooms and walls receive FRP. For Boys and Girls Restrooms ("FRP/EX") and Life Skills, please identify the walls receiving FRP.</b>                                                                   |
| <b>Answer:</b>  | Updated drawings for clarification.                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Question</b> | <b>FRP thickness: Section 06 8316 specifies 0.10" panels. Will a standard 0.090" Class A panel from the listed manufacturers be acceptable?</b>                                                                                                                                                                                                                                                                                             |
| <b>Answer:</b>  | Standard .09 thickness acceptable, spec updated.                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Question</b> | <b>Life Skills casework (A-500): The casework details show "wood framing" (12.30.09) and plywood sheathing under the countertop, while Section 06 4023 calls for AWS Custom plastic-laminate casework. Please confirm whether shop-fabricated laminate box casework is intended. Please also provide the laminate manufacturer/color, the countertop edge profile, and the knee-space/pipe protection requirement at the ADA sink base.</b> |
| <b>Answer:</b>  | <ul style="list-style-type: none"> <li>•Casework shall be shop-fabricated, sheet A-500 has been updated</li> <li>•Colors shall be selected from range of manufacturers standard colors during submittal phase</li> <li>•1/4" Rounded edge</li> <li>•Clearance requirements provided on detail 5/A-500</li> </ul>                                                                                                                            |
| <b>Question</b> | <b>Keynote 06.10.21 – Wood Panel Wall Infill, Match Existing: Please identify the locations and approximate quantities, the species/profile of the existing paneling, and whether the finish (stain/sealer) is by Section 09 9000 or by the carpentry trade.</b>                                                                                                                                                                            |
| <b>Answer:</b>  | <ul style="list-style-type: none"> <li>•Locations: All locations in which partial demolition to remove existing fixtures and carriers is required.</li> <li>•Intent is to provide finished substrate flush with existing wall, prep as required to receive FRP paneling.</li> </ul>                                                                                                                                                         |
| <b>Question</b> | <b>Toilet accessories (10 2813, rev. Addendum 3): Please confirm the manufacturer/model and weight of the adult-sized changing station and the shower seat so blocking can be properly sized, and confirm that blocking is under Section 06 1000.</b>                                                                                                                                                                                       |
| <b>Answer:</b>  | No basis of design for shower seat or adult changing station, furnish as per specifications and provide blocking as required by manufacturer.                                                                                                                                                                                                                                                                                               |
| <b>Question</b> | <b>Work hours: Addendum 3 states work will be after school hours. Please confirm the permitted hours, whether weekend and school-vacation work is allowed, and whether CORI/background checks are required for workers.</b>                                                                                                                                                                                                                 |
| <b>Answer:</b>  | <ul style="list-style-type: none"> <li>•After school work hours are 2:30-10pm</li> <li>•Weekend work and school-vacation work is permitted</li> <li>•CORI/Background checks required regardless of work hours.</li> </ul>                                                                                                                                                                                                                   |
| <b>Question</b> | <b>Schedule: Division 01 was not included in the bid set. Please provide the contract time / required Substantial Completion date and the anticipated Notice to Proceed, as well as the applicable Prevailing Wage schedule.</b>                                                                                                                                                                                                            |



# The City of **WORCESTER**

Administration & Finance – Purchasing Division  
Christopher J. Gagliastro, MCPPO – Purchasing Director  
455 Main Street, Room 201, Worcester, MA 01608  
-1220  
[a.gov](http://www.cityofworcestera.gov)

|                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Answer:</b>   | Requested information can be found on City of Worcester purchasing website, Bid number 8800-M7, under Bid Forms section                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Question</b>  | <b>Asbestos: Please confirm that abatement (Section 02 8200) will be completed in the work areas before finish trades begin, and that removal of existing doors with glazing (trace ACM in glazing compound per the AHERA report) is by the abatement/demolition contractor.</b>                                                                                                                                                                                                                                                                                                            |
| <b>Answer:</b>   | Abatement to be performed by a licensed abatement contractor, GC to coordinate.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Question:</b> | <b>Will you be extending project substantial completion date?</b><br>•The current substantial completion date for the project is 11/19/26 according to the bidding documents.<br>•Talking to our door and hardware vendors, normal factory lead times are 4-6 weeks upon approved submittals.<br><br>•Current bid due date is 10/7/26, if you are able to get a contract out and processed by 10/14/26, we should be able to get submittals by 10/21/26, review of submittal by 10/26/26, that would give you a worst-case delivery of 12/7/26, and then you have about 2 weeks of install. |
| <b>Answer</b>    | Substantial completion date moved to 12/31/26                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

Bidders are requested to acknowledge and/or include this addendum with submission. All other terms, conditions and specifications remain unchanged.

Very truly yours,

Stephen R. McDonald  
Assistant Purchasing Director

## SECTION 020800



## ASBESTOS ABATEMENT

## PART I - GENERAL

## 1.01 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 1 – GENERAL REQUIREMENTS, which are hereby made a part of this section of the specifications.
- B. Equality of material, article, assembly or system other than those named or described in this Section shall be determined in accordance with the provisions of Article IV of the CONTRACT AND GENERAL CONDITIONS.

## 1.02 DEFINITIONS

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

*"Site"*: Refers to New Citizen's Center located in Worcester, Massachusetts as described by the Contract Documents and Drawings.

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

*"Architect"*: Refers to Habeeb & Associates Architects, 43 Harvard Street Worcester, MA 01609 and their designated, authorized personnel.

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

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

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

*"Asbestos Project Designer"*: The MADLS certified Asbestos Project Designer for this project is Mr. Edward Kolodziej (#AD074321), ATLAS Technical Consultants LLC.

## 1.03 GENERAL REQUIREMENTS/QUALIFICATIONS

- A. All Asbestos Abatement work referenced herein shall be performed by a Massachusetts licensed Asbestos Abatement Contractor in accordance with Massachusetts Department of Labor Standards (MADLS) 454 CMR 28.00 and Department of Environmental Protection (DEP) CMR 7.00 & 7.15 Regulations.

**B. Qualifications of Asbestos Abatement Contractor**

1. Asbestos Abatement Contractor performing the abatement work of this section ("Asbestos Abatement Contractor") shall be an Asbestos Abatement Contractor licensed to perform asbestos operations in the State of Massachusetts. Asbestos Abatement Contractor shall submit license number and proof of licensure.
2. The Asbestos Abatement Contractor shall also provide the project name, contact person and phone number of three (3) projects which were successfully completed of similar size and scope within the last two (2) years. Each project shall have been completed in good standing and the work performed by the Asbestos Abatement Contractor for each project resulted in no work violations/citations, contract delays, contract extensions/disputes or litigation. Failure to provide this information and/or meet the approval of these qualifications by the Owner may result in rejection of the Asbestos Abatement Contractor.
3. The Owner, Architect or Consultant shall also reserve the right to research and utilized other information received from any other projects completed by the Asbestos Abatement Contractor not provided under 1.03 B (2) above, regardless of the date completed, location or circumstances resulting from the outcome of their work. The Owner shall reserve their right to reject the Asbestos Abatement Contractor based upon this review, for any reason, if found to be in the best interest of the Owner.

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

**1.04 DESCRIPTION OF WORK**

- A. Work: This section details all areas where asbestos abatement work is to be performed and lists areas requiring special protection during the abatement work. The Asbestos Abatement Contractor shall furnish all labor, materials, services, training, insurance, and equipment as needed to complete removal of asbestos-containing and asbestos-contaminated materials located as indicated below. The Asbestos Abatement Contractor shall follow all Federal, State and local ordinances, regulations and rules pertaining to asbestos, including its abatement, storage, transportation and disposal.
- B. The Asbestos Abatement Contractor shall be responsible for verifying all quantity estimates in preparation of their bids, including the location and conditions of all asbestos-containing materials to be abated under this contract. No additional compensation and/or contract time shall be granted to the Asbestos Abatement Contractor for failure to perform this requirement.
- C. The following Scope of Work and Requirements shall be applicable for asbestos abatement work at the site:
  1. All Asbestos Abatement work shall take place in accordance with the provisions outlined herein as well as current local, state and federal regulations. No additional compensation shall be granted to the Asbestos Abatement Contractor for compliance with applicable laws when performing the abatement work at the site. This shall include any regulatory requirements that mandate additional or more restrictive containment and abatement procedures than what has been presented herein.

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

2. The Asbestos Abatement Contractor shall coordinate with the General Contractor as to the locations of areas to be abated in accordance with the Scope of Work outlined herein and the Drawings.
3. The Asbestos Abatement Contractor shall be responsible for all demolition work required in order to access all asbestos materials for abatement. All demolition debris shall be disposed of as asbestos waste, unless otherwise determined by the Consultant.
4. Any materials deemed to be asbestos contaminated by the Consultant, prior to the start of work, or as a result of the work, shall be treated as such and disposed of properly by the Asbestos Abatement Contractor.
4. Existing finishes and structural components to remain shall not be damaged. The Asbestos Abatement Contractor shall take care so as not to damage or alter existing surrounds or structural components. Repair of damage caused to the existing surrounds by the Work shall be responsibility of the General Contractor.
5. All removal procedures shall take place under full containment and a three-stage decontamination unit under negative pressure (unless otherwise approved by the Consultant).
6. With regards to the variance from requirements on polyethylene sheeting on "impervious wall" surfaces, the Asbestos Abatement Contractor shall be required to adhere to all requirements outlined by MA DLS and MassDEP regulations governing work area set-up for asbestos abatement. The Asbestos Abatement Contractor shall take full responsibility including all costs associated with approval and/or denial of such actions (i.e. non use of polyethylene) if determined to be non-compliant by the Consultant and/or a state or federal agency. If the variance is denied or discontinued by said parties; the Asbestos Abatement Contractor shall proceed with installation of polyethylene sheeting on such surfaces at no additional cost to the Owner.
7. The Owner will remove moveable furniture, desks, chairs, stored items, tables, etc., from each area prior to commencement of the work. The Abatement Contractor shall cover all non-movable objects per Regulations. Fixed items, such as countertops, demising wall systems, appliances, etc. will remain and abatement will be completed to the edges of items so that a straight edge remains (as necessary).
8. The following requirements shall be applicable for removal of asbestos flooring material:
  - a. Removal of existing asbestos flooring material shall include all layers of such materials and associated mastic/backing (including glue/levelastic, etc.) down to the existing concrete. In addition, all staining present on the concrete shall also be 100% removed. The contractor shall removal all covebase and covebase mastic in the abatement areas and dispose of these materials as asbestos waste.
  - b. The Asbestos Abatement Contractor shall remove all asbestos flooring material by manual and/or mechanical means.
  - c. The Asbestos Abatement Contractor shall construct a containment and decontamination unit (remote maybe utilized for removal areas less than 10 SF).
9. The following requirements shall be applicable for abatement of all asbestos pipe and/or fitting insulation:

- a. The Asbestos Abatement Contractor shall be required to perform all wall, ceiling and floor demolition required to access pipe insulation specified for abatement herein. All demolition work shall take place under full containment and all demolition debris shall be disposed of as asbestos waste (unless otherwise determined by ATLAS). All debris located within a pipe chase, wall, ceiling or floor cavity shall be completely removed and all such material shall be disposed of as asbestos waste.
  - b. With regards to asbestos pipe fitting insulation abatement, removal shall include the asbestos-containing fitting insulation as well as six (6) inches of fiberglass insulation from each side of the fitting being abated.
  - c. The Asbestos Abatement Contractor shall construct a containment and decontamination unit (remote maybe utilized for removal areas less than 25 LF).
10. Refer to Attachment A (Table 1.0) for a summary of materials that require abatement at the site. Refer to Drawings for locations of the work and coordinate all abatement with the General Contractor.

#### 1.05 SUBMITTALS

- A. The following submittals are required for review and approval by the Architect on/or before the Pre-Construction Meeting:
  1. Copy of Massachusetts MADLS Asbestos Abatement Contractor's License.
  2. Copies of all notifications for asbestos abatement.
  3. Chain-Of-Command list of all personnel on-site and emergency contact person(s)
  4. Work plan which dictates all removal procedures to be implemented.
  5. Proposed waste hauler and waste disposal site for the ACWM and a copy of the Waste Shipment Record (WSR) to be used for shipment of the ACWM off-site for disposal.
- B. In addition to the items required by other sections of the Project Manual, the following submittals are required for final payment
  1. Copy of Waste Shipment Records, signed by the landfill showing receipt of the ACWM.

#### 1.06 CODES AND STANDARDS

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

#### 1.07 FEES, PERMITS & LICENSES

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

#### 1.08 CLEANING

- A. Maintain the work site in a neat and orderly manner at all times, so as not to interrupt or infringe upon the work of other trades. Perform all final cleaning of abatement work areas as required by this Section and Massachusetts Regulations to the approval of the Owner's Consultant. Upon completion of work in any given area, Asbestos Abatement Contractor shall remove all material and equipment associated with the work, not necessary to complete other phases of the work in that area.
- B. Comply with all requirements for final clearance and release of a work area as described in this Section and required by the Massachusetts Regulations prior to take down of polyethylene and area clean-up.

#### 1.09 COORDINATION

- A. Extend full cooperation to Owner in all matters involving the use of Owner's facilities. At no time shall the Asbestos Abatement Contractor cause or allow conditions to be caused, which may cause risk or hazard to the general public, or conditions that might impair safe use of the facility.
- B. Coordinate the work of this section with that of all other trades as directed by the General Contractor and at the express consent of the Owner and Architect. Phasing and scheduling of this project will be subject to the approval of the Owner and Architect. The work of this Section shall be scheduled and performed so as not to impede the progress of the project as a whole. Work shall not proceed in any area without the express consent of the Owner and Architect. The Asbestos Abatement Contractor shall be available within 24 hours notice for additional work if after acceptance of the work it is found that full abatement was not achieved from the initial work effort as determined by the Owner, Architect or Consultant.
- C. Complete Asbestos activities in the phases of the final schedule agreed upon by Owner and Architect.

#### 1.10 SUBSTITUTION OF MATERIALS OR METHODS

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

#### 1.11 SITE SECURITY

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

#### 1.12 PROJECT MONITOR

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

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

### 1.13 TEMPORARY FACILITIES

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

## PART II - PRODUCTS

### 2.01 MATERIALS

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

## PART III - EXECUTION

### 3.01 PREPARATION

- A. Critical Barriers: Prior to any masking and sealing operations which will make up the asbestos removal work area, windows, doors, openings, ducts, drains and vents will be masked and sealed with a minimum of one layer of six (6) mil polyethylene sheeting. Large openings to occupied areas, such as open doorways, hallways, passageways and major openings shall be sealed with permanent, solid construction materials and made air tight in accordance with MADLS regulations 454 CMR 28.00. Voids in the walls and ceilings that are due to penetrations of conduits and pipes shall be sealed with a fire retardant spray foam. Exposed electrical panels in work areas will be shut off when possible, and masked and sealed with a minimum of two (2) layers of six (6) mil polyethylene and duct tape.
- B. Decontamination Chambers: It is the Asbestos Abatement Contractor's responsibility to provide Decontamination Chambers consisting of an equipment room, shower and clean room for personnel involved in asbestos removal. The Chamber shall be masked and sealed with two layers of six mil polyethylene sheeting with flaps between each room. Each of the three rooms will be of a sufficient size to accommodate the Asbestos Abatement Contractor's contaminated personnel and related equipment. The rooms will be framed, masked, sealed and attached and sealed to the entry/exit ways of asbestos worksites. Adequate heat and light will be safely provided. The Asbestos Abatement Contractor shall provide a minimum of one water heater per work area decontamination chamber. Waste water will be filtered by 20 micron and 5 micron filters in series prior to discharge.

### 3.02 ABATEMENT PROCEDURES

- A. General: The following paragraphs detail the work requirements for the regulated area. Workers shall wear tyvek suits and respiratory protection for all removals.
- B. Masking and Sealing
  - 1. Critical Barriers
    - a. Prior to any masking and sealing operations which will make up the asbestos removal work area, windows, doors, openings, ducts, drains and vents will be masked and sealed with a minimum of one layer of six (6) mil polyethylene sheeting. Voids in the walls and ceilings that are due to penetrations of conduits and pipes shall be sealed with a fire retardant spray foam. Large

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

opening to occupied areas, such as open doorways, hallways, passageways and major openings shall be sealed with permanent, solid construction materials and made air tight in accordance with MADLS regulations 454 CMR 28.00.

- b. In areas where drains or sump pumps are located, primary filters will be placed in drain and openings sealed with 6 mil polyethylene sheeting, in addition to floor masking and sealing requirements.
- c. Any furniture, fixtures, or stored material that cannot be removed or that must remain in the work area will be covered, masked and sealed with a minimum of one layer of six (6) mil polyethylene sheeting. If the surfaces of these materials are determined to be contaminated with asbestos fibers, the Contractor shall remedial clean them prior to masking and sealing.
- d. Exposed electrical panels in work areas will be shut off when possible, and masked and sealed with a minimum of two (2) layers of six (6) mil polyethylene and duct tape.

2. Full Containment:

- a. Unless otherwise specified, floors and walls will be masked and sealed with two layers of six mil polyethylene sheeting with a minimum overlap of two feet at seams and up walls. Where it is necessary to mask and seal ceiling areas, a minimum of one layer of six mil polyethylene sheeting will be used.
  - b. The floors shall be covered first and the flooring plastic shall extend up on the walls. The walls shall then be covered with plastic from ceiling to floor level, thus overlapping the floor plastic. The floor shall then be covered with the second layer of plastic, the plastic extended up the walls and the edges sealed to the wall plastic. The walls shall then be covered with a second layer of plastic from ceiling to floor level, thus overlapping the second layer of floor plastic. The bottom portion of the wall plastic shall thus be sandwiched between the layers of the floor plastic. If the floor or wall plastic necessitates seams, the seams in successive layers of plastic sheet shall be staggered so as to reduce the potential for water or asbestos to penetrate through the covering.
  - c. The two separate layers of six-mil polyethylene sheeting on walls and floors shall constitute the primary and secondary containment barriers, respectively. This containment, along with the decontamination chamber, will constitute full containment, and will isolate the contained worksite from surrounding areas except where air must enter the worksite due to the use of exhaust equipment.
- C. Personal Air Sampling: Daily personal and excursion sampling will be the responsibility of the Contractor to check personal exposure levels versus respiratory protection and to check work practices. At least 25% of the workers in each shift, but not less than 2, shall be sampled. The Contractor is responsible for his own personal sampling as outlined in OSHA Regulation 1926.1101. The Contractor shall post the personal air sample results within 24 hours.
- D. Remedial Cleaning: Remedial cleaning of horizontal surfaces, ledges, and equipment will be required prior to masking and sealing operations of work areas. Cleaning will be done using HEPA vacuums and wet methods. Determinations of additional remedial cleaning will be made on the basis of hazard potential to workers and the outside environment relating to setup and masking and sealing operations (as deemed by the Consultant). Respiratory protection and protective clothing will be required for the cleaning. Prior to remedial cleaning negative air filtration units and a three stage decontamination shall be in place and running and all wall and ceiling penetrations shall be sealed with fire retardant spray foam.

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

- E. Decontamination Chambers: The Contractor shall construct a decontamination chamber in accordance with local, state and federal regulations governing asbestos abatement.
- F. Negative Air Filtration: The Contractor shall establish negative pressure air filtration within the work areas. The Contractor shall install, operate, and maintain a sufficient number of Negative Air Filtration Units (NAFU's) to meet the requirements of local, state and federal regulations.
- G. Removals: Removal of asbestos containing materials, unless specified otherwise, will be performed using negative air filtration techniques, wet methods, attached three stage decontamination chambers, the masking and sealing of openings, ducts and vents, full two-layer plastic containments and the encapsulation of post removal surfaces. Removals will be as indicated and as specified herein, and will be performed in a neat and workman like manner to the limits indicated or specified. Asbestos will be consistently and thoroughly wetted with a fine spray of amended water and will be carefully removed and immediately placed in approved and properly labeled six mil polyethylene disposal bags. Asbestos residual materials will be diligently scraped or brushed from surfaces. After brushing and scraping, surfaces will be free of visible debris and fibers and surfaces will be HEPA vacuumed clean.
- H. Visual Inspections: Work areas shall pass a visual inspection conducted by the Site Supervisor responsible for the project and the Owner's Project Monitor (i.e. Consultant). The criterion for this inspection will be the absence of visible debris in accordance with ASTM standard E1368-90. A certificate of visual inspection will be signed by the Project Monitor and the Site Supervisor after final inspection clearance. The Contractor will be responsible for the costs of visual inspection and testing required for any work which fails clearance air quality criteria.
- I. Encapsulation: A bridging encapsulant/lockdown sealant will be applied to remaining surfaces in direct contact with removal operations, polyethylene sheeting and on any porous surfaces within the work site. The chosen encapsulant must be compatible with the replacement materials and conform to the proper edition of applicable fire and electrical standards.
- J. Work Completion: Final air clearance testing shall be performed by the Project Monitor for all areas.

### 3.03 DISPOSAL

- A. Packaging: Prior to post-abatement inspection, asbestos- containing waste shall be packaged in sealed double containers and removed from the work area to a specified transportation vehicle or a designated holding area approved by the Owner. At the end of each work day the Asbestos Abatement Contractor shall remove the debris accumulated during that day's work activities using procedures outlined in the Specifications. The Asbestos Abatement Contractor shall provide a daily tally of all bags removed.
- B. Temporary Storage of Waste: An area for temporary storage of asbestos waste must be approved by the Owner. Asbestos waste must be stored in a restricted area and must be in an **enclosed container** which is posted and secured whenever not in use. ACM Waste shall NOT be stored outside the building on the ground, pavement areas or other non-enclosed area. Asbestos waste material shall be loaded into a waste transportation vehicle/dumpster and hauled away as soon as there is a sufficient quantity available for direct transportation to the approved disposal site. ACM waste shall **NOT** be transferred back to the Asbestos Abatement Contractor's yard/facility unless approved by the Owner. ACM Waste shall only be stored at:

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

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

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

- C. OSHA/EPA labeling: Asbestos warning labels having permanent adhesive and waterproof print, or being permanently printed on the container, shall be affixed to the outside of all asbestos containers, and each inside bag, except that nonfriable asbestos-containing waste that has not been and does not have a high probability of becoming, crumbled, pulverized, or reduced to powder need not be labeled. Labels will be conspicuous and legible and shall contain the following warning:

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

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

SITE OWNER'S NAME  
SITE NAME

- D. DOT labeling and marking: A DOT "class 9" shipping label and DOT mark shall be applied to or be printed on each packaging of asbestos-containing materials.
- E. Waste Transportation: All ACM waste shall be containerized pursuant to 310 CMR 7.15 prior to being transported. All ACM waste shall be transported in totally enclosed vehicles or containers that are designed, constructed, and operated to prevent spills, leaks or emissions. All ACM waste shall be transported in compliance with 40 CFR Part 61 and applicable Department of Transportation (DOT), OSHA and local regulations. Each vehicle transporting asbestos-containing waste shall be marked with asbestos danger signs during loading and unloading of the waste, in accordance with the NESHAP, 40 CFR 61.150.
- F. Asbestos waste shipment records: The Asbestos Abatement Contractor shall prepare the waste shipment records. Completed waste shipment record(s) signed by the Asbestos Abatement Contractor, all transporter(s), transferor(s), disposal and/or conversion facility(s), shall be provided to the Owner within 30 days of the time at which the asbestos-containing wastes are received at the disposal and/or conversion facility (ies), which shall be no longer than 40 days after the waste was accepted by the initial transporter. The Waste Shipment Record shall specify the designated number of bags or cubic yard(s) of asbestos waste.
- G. The following information shall be included on the waste shipment record for each and every load of ACM transported off-site:
1. The name, address and telephone number of the owner/operator of the facility or dumping ground where asbestos abatement activities have occurred;

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

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

### 3.04 QUALITY CONTROL AND TESTING

- A. The Asbestos Abatement Contractor shall be responsible for achieving acceptable visual and final air clearance testing for all abatement areas as follows:
  1. Clearance inspection: ATLAS's Project Monitor shall inspect the work area and surrounding areas for clearance using visual and physical methods, prior to clearing the project for air monitoring clearance procedures.
  2. Based upon the quantity of material to be abated, either Phase Contrast Microscopy (PCM) or Transmission Electron Microscopy (TEM) clearance testing will be performed to confirm the completion of removal. All clearance testing shall be performed in accordance with state of Massachusetts and EPA "Asbestos Hazard Emergency Response Act" (AHERA) Regulations. The work areas shall be considered complete if the following criteria are met:
    - a. Containments cleared and samples analyzed by Phase Contrast Microscopy (PCM): Maximum airborne fiber concentration of <0.01 fibers per cubic centimeter (minimum 5 samples).
    - b. Containment's cleared and samples analyzed by Transmission Electron Microscopy (TEM): The average concentration of asbestos on the five inside containment samples is not statistically different (as determined by the Z-test calculation found in Appendix A of 40 CFR 763 Subpart E) from the average asbestos concentrations of the five outside containment samples, and average asbestos concentrations of the three field blanks are below the filter background level of 70 structures per square millimeter (70 s/mm<sup>2</sup>).
    - c. TEM air clearance analysis shall be at 24-hour turnaround time upon laboratory receipt of the samples.

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

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

**ATTACHMENT A**

**TABLE 1.0  
SUMMARY OF ACM TO BE ABATED**

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

| TABLE 1.0<br>SUMMARY OF ACM TO BE ABATED                                                 |                                           |                                                                 |          |                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------|-------------------------------------------|-----------------------------------------------------------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #                                                                                        | LOCATION                                  | COMPONENT                                                       | QUANTITY | NOTES                                                                                                                                                                                                                                                 |
| 1                                                                                        | Throughout                                | Flooring Material<br>(tiles, cove base,<br>adhesives, levelers) | 150 SF   | <ul style="list-style-type: none"> <li>Remove ACM flooring by doors requiring new door system installation.</li> <li>Refer to the Drawings and coordinate all work with the General Contractor.</li> </ul>                                            |
| 2                                                                                        | Supply Room<br>between<br>Rms. 11 &<br>13 | Flooring Material<br>(tiles, cove base,<br>adhesives, levelers) | 130 SF   | <ul style="list-style-type: none"> <li>Includes demolition of shelving to access ACM flooring materials</li> </ul>                                                                                                                                    |
| 3                                                                                        | Basement Bathroom                         | Pipe & Fitting<br>Insulation                                    | 6 LF     | <ul style="list-style-type: none"> <li>Includes demolition of CMU wall behind toilet.</li> <li>Refer to the Drawings and coordinate all work with the General Contractor.</li> <li>Pipe and/or fitting insulation presumed in wall cavity.</li> </ul> |
| 4                                                                                        | Basement Bathroom                         | Mirror Adhesive                                                 | 5 SF     |                                                                                                                                                                                                                                                       |
| 5                                                                                        | Room 10A Bath                             | Ceramic Wall Tile<br>Adhesive & Grout                           | 150 SF   |                                                                                                                                                                                                                                                       |
| 6                                                                                        | Room 10A Bath                             | Pipe & Fitting<br>Insulation                                    |          | <ul style="list-style-type: none"> <li>Includes demolition of CMU wall behind toilet.</li> <li>Refer to the Drawings and coordinate all work with the General Contractor.</li> <li>Pipe and/or fitting insulation presumed in wall cavity.</li> </ul> |
| <br>7 | Room 10A<br>Storage                       | Flooring Material<br>(tiles, cove base,<br>adhesives, levelers) | 36 SF    | <ul style="list-style-type: none"> <li></li> </ul>                                                                                                                                                                                                    |
| 8                                                                                        | Room 9A Bath                              | Ceramic Wall Tile<br>Adhesive & Grout                           | 150 SF   |                                                                                                                                                                                                                                                       |
| 9                                                                                        | Room 9A Bath                              | Pipe & Fitting<br>Insulation                                    |          | <ul style="list-style-type: none"> <li>Includes demolition of CMU wall behind toilet.</li> <li>Refer to the Drawings and coordinate all work with the General Contractor.</li> <li>Pipe and/or fitting insulation presumed in wall cavity.</li> </ul> |
| 10                                                                                       | Office Restrooms                          | Ceramic Wall Tile<br>Adhesive & Grout                           | 250 SF   |                                                                                                                                                                                                                                                       |

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

| TABLE 1.0<br>SUMMARY OF ACM TO BE ABATED                                                |                       |                                                                 |          |                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------------|-----------------------|-----------------------------------------------------------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| #                                                                                       | LOCATION              | COMPONENT                                                       | QUANTITY | NOTES                                                                                                                                                                                                                                                 |
| <br>11 | Library               | Flooring Material<br>(tiles, cove base,<br>adhesives, levelers) | 255 SF   |                                                                                                                                                                                                                                                       |
| <br>12 | Kitchen Entry         | Flooring Material<br>(tiles, cove base,<br>adhesives, levelers) | 6 SF     | Removal of flooring material<br>by wall to be removed. Refer<br>to #1 in table for flooring<br>materials to be removed for<br>new door system.                                                                                                        |
| 13                                                                                      | Room 11<br>Bath       | Ceramic Wall Tile<br>Adhesive & Grout                           | 150 SF   |                                                                                                                                                                                                                                                       |
| 14                                                                                      | Room 11<br>Bath       | Pipe & Fitting<br>Insulation                                    |          | <ul style="list-style-type: none"> <li>Includes demolition of CMU wall behind toilet.</li> <li>Refer to the Drawings and coordinate all work with the General Contractor.</li> <li>Pipe and/or fitting insulation presumed in wall cavity.</li> </ul> |
| 15                                                                                      | Room 11/13<br>Storage | Ceramic Wall Tile<br>Adhesive & Grout                           | 120 SF   |                                                                                                                                                                                                                                                       |
| 16                                                                                      | Girl's Room           | Ceramic Wall Tile<br>Adhesive & Grout                           | 425 SF   |                                                                                                                                                                                                                                                       |
| 17                                                                                      | Girl's Room           | Pipe & Fitting<br>Insulation                                    | 32 LF    | <ul style="list-style-type: none"> <li>Refer to the Drawings and coordinate all work with the General Contractor.</li> <li>Pipe and/or fitting insulation presumed in wall cavity.</li> </ul>                                                         |
| 18                                                                                      | Boy's Room            | Ceramic Wall Tile<br>Adhesive & Grout                           | 425 SF   |                                                                                                                                                                                                                                                       |
| 19                                                                                      | Boy's Room            | Pipe & Fitting<br>Insulation                                    | 32 LF    | <ul style="list-style-type: none"> <li>Refer to the Drawings and coordinate all work with the General Contractor.</li> <li>Pipe and/or fitting insulation presumed in wall cavity.</li> </ul>                                                         |

## SECTION 03 3000

## CAST-IN-PLACE CONCRETE

## PART 1 - GENERAL

## 1.1 GENERAL REQUIREMENTS

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

## 1.2 DESCRIPTION OF WORK

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

1. Cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes for the following applications:



- a. Slabs-on-grade.  
b. *Post-Trenching patching of concrete floor.*  
c. Coordination with and cutting and patching of mechanical and electrical penetrations through cast-in-place concrete.

- B. Alternates: Not Applicable.

- C. Items To Be Installed Only: Install the following items as furnished by the designated Sections:

1. Section 05 5000 – Metal Fabrications  
a. Lintels, sleeves, anchors, inserts, plates and similar items.
2. Section 22 0001 – Plumbing (filed sub-bid required):  
a. Sleeves, anchors, inserts, sumps, and similar items for plumbing systems.
3. Section 23 0001 – Heating, Ventilating and Air Conditioning (filed sub-bid required):  
a. Sleeves, anchors, inserts, and similar items for heating, ventilating, and air conditioning systems.
4. Section 26 0001 – Electrical Work (filed sub-bid required):  
a. Sleeves, anchors, inserts, floor boxes, and similar items for electrical systems.

- D. Items To Be Furnished Only: Not Applicable.

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

1. Section 09 6110 – Vapor Mitigation at Slabs for vapor mitigation, where required prior to finish flooring installation.

## 1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

## 1.4 SUBMITTALS

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

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

- B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
  - 1. Indicate amounts of mixing water to be withheld for later addition at Project site.
  - 2. Indicate amount of fly ash in the mix.
- C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.
  - 1. Indicate coordination requirements for reinforcement locations with requirements of structural steel, steel joints, and steel deck.
- D. Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer licensed in the Commonwealth of Massachusetts detailing fabrication, assembly, and support of formwork.
  - 1. Shoring and Reshoring: Indicate proposed schedule and sequence of stripping formwork, shoring removal, and installing and removing reshoring.
  - 2. Blockouts for Architectural Joint Systems: Indicate blockouts and coordination with architectural joint systems
- E. Formwork Inspection: Indicate compliance with approved shop drawings.
- F. Anchor Bolt Location: Indicate compliance with approved shop drawings.
- G. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:
  - 1. Aggregates.
- H. Material Certificates: For each of the following, signed by manufacturers:
  - 1. Cementitious materials.
  - 2. Admixtures.
  - 3. Form materials and form-release agents.
  - 4. Steel reinforcement and accessories.
  - 5. Fiber reinforcement.
  - 6. Waterstops.
  - 7. Curing compounds.
  - 8. Floor and slab treatments.
  - 9. Bonding agents.
  - 10. Adhesives.
  - 11. Vapor retarders.
  - 12. Semi-rigid joint filler.

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

13. Joint-filler strips.
14. Repair materials.
- I. Floor surface flatness and levelness measurements to determine compliance with specified tolerances and requirements for applied finishes and materials, except as noted for slope to drains.
- J. Field quality-control test and inspection reports.
- K. Minutes of preinstallation conference.
- 1.5 QUALITY ASSURANCE
  - A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
  - B. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.
    1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-01 or an equivalent certification program.
    2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.
  - C. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from one source, and obtain admixtures through one source from a single manufacturer.
  - D. Welding: Qualify procedures and personnel according to AWS D1.4, "Structural Welding Code-- Reinforcing Steel."
  - E. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
    1. ACI 301, "Specification for Structural Concrete."
    2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
  - F. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.
  - G. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01.
    1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
      - a. Contractor's superintendent.
      - b. Independent testing agency responsible for concrete design mixtures.
      - c. Ready-mix concrete manufacturer.
      - d. Concrete subcontractor.

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

2. Review special inspection and testing and inspecting agency procedures for field quality control, concrete finishes and finishing, cold- and hot-weather concreting procedures, curing procedures, construction contraction and isolation joints, and joint-filler strips, semirigid joint fillers, forms and form removal limitations, shoring and reshoring procedures, vapor-retarder installation, anchor rod and anchorage device installation tolerances, steel reinforcement installation, floor and slab flatness and levelness measurement, concrete repair procedures, and concrete protection.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage. Avoid damaging coatings on steel reinforcement.
- B. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

### PART 2 - PRODUCTS

#### 2.1 CONCRETE MATERIALS

- A. Cement: shall be American-made Portland Cement, free from water soluble salts or alkalis which will cause efflorescence on exposed surfaces. Portland Cement shall be Type II, ASTM C150. Use only one brand of cement for each type of cement throughout project. The Contractor shall be responsible for whatever steps are necessary to insure that no visual variations in color will result in exposed concrete and shall place on order and secure in advance a sufficient quantity of this (these) cement(s) to complete concrete work specified herein.

1. Fly Ash: ASTM C 618

2. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.

- B. Normal Weight Fine Aggregate: shall be washed, inert, natural sand conforming to ASTM C33 and following additional requirements:

| Sieve            | Retained Percent                                       |
|------------------|--------------------------------------------------------|
| #4               | 0 - 5                                                  |
| #16              | 25 - 40                                                |
| #50              | 70 - 87                                                |
| #100             | 93 - 97                                                |
| Fineness Modulus | 2.80 (Plus/Minus 0.20)                                 |
| Organic          | Plate 2 maximum                                        |
| Silt             | 2.0 percent maximum                                    |
| Mortar Strength  | 100 percent minimum compression ratio                  |
| Soundness        | 5 percent maximum loss, magnesium sulfate, five cycles |

- C. Normal Weight Coarse Aggregate: shall be well graded crushed stone or washed gravel conforming to ASTM C33 and the following additional requirements:

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

#### Designated Size

|               |                                                        |      |       |      |      |      |      |
|---------------|--------------------------------------------------------|------|-------|------|------|------|------|
| (inches)      | 3                                                      | 2    | 1-1/2 | 1    | 3/4  | 1/2  | 3/8  |
| F.M.(+/-0.20) | 7.95                                                   | 7.45 | 7.20  | 6.95 | 6.70 | 6.10 | 4.50 |
| Organic       | Plate 1 maximum                                        |      |       |      |      |      |      |
| Silt          | 1.0 percent maximum                                    |      |       |      |      |      |      |
| Soundness     | 5 percent maximum loss, magnesium sulfate, five cycles |      |       |      |      |      |      |

Maximum designated sizes for normal weight coarse aggregate to be used in concrete sections shall be as noted below, except that sizes shall also be chosen in conjunction with required clearances.

1. One and one-half inches for sections over ten inches in thickness.
  2. One inch for sections more than eight and up to ten inches in thickness.
  3. Three-quarter inch for sections more than three and up to eight inches in thickness.
- D. Concrete Fill for Steel Stair and Landing Pans: shall be composed of 1:2:2 mix with three-eighths inch maximum size normalweight aggregate and shall be placed with a 0 inches to 1 inch slump.
- E. Water: shall be from approved source, potable, clean and free from oils, acids, alkali, organic matter and other deleterious material.
- F. Admixtures:
1. Water-reducing agent:
    - a. WRDA, GCPAT.
    - b. Plastocrete 100, Sika Corp.
    - c. Master Pozzolith 322, BASF.
    - d. Or equal.
    - e. Note: Water-reducing agent shall be by same manufacturer as air-entraining agent.
  2. Air-entraining agent:
    - a. Darex AEA, GCPAT.
    - b. Sika Air 260, Sika Corp.
    - c. MasterAir VR 10, BASF.
    - d. Or equal.
  3. Superplasticizer: High-range water-reducer conforming to ASTM C494, Type F or Type G.
  4. Admixtures retarding setting of cement in concrete shall not be used without written approval of Designer.
  5. Admixtures causing accelerated setting of cement in concrete shall not be used without written approval of Designer.

## 2.2 CONCRETE MIXTURES

- A. The Contractor shall recommend, on the basis of trial mixes and strength curves specified below, design mixes for each type and strength of concrete. The Testing Agency will verify that the proposed mix designs conform to all specification requirements.

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

- B. Sufficient materials for concrete mix design shall be furnished by the Contractor not less than five weeks before use. Duplicate small samples plainly and neatly labeled with source, where proposed to be used, date, and name of collector shall be provided and presented to Testing Agency for permanent reference.
- C. Mixes shall be designed in accordance with "Method 1" of ACI 301, and the requirements of this Section. All concrete is normalweight unless specifically designated otherwise; air-dry weight not to exceed 150 lbs. per cubic foot.
- D. Limiting values shown below apply for specific strengths of concrete with coarse aggregates less than one and one-half inches unless noted otherwise in TABLE A below.

TABLE A

| Minimum                              | Max. Allowable       |                                      |
|--------------------------------------|----------------------|--------------------------------------|
| Allowable<br>Compressive Strength at | Net Water<br>Content | Minimum Permissible<br>Cement Factor |
| 28 day (psi)                         | Gallons/Sack*        | Sacks/Cubic Yard**                   |
| 4000                                 | 5.75                 | 6.00                                 |
| 3000                                 | 6.50                 | 5.00                                 |

\* Maximum; decrease if possible. This represents total water in mix at time of mixing, including free water on aggregate.

\*\* Minimum; increase as necessary to meet other requirements.

- E. In all slabs and walls exposed to weather, all concrete shall contain the approved air-entraining admixture as per manufacturer's written instructions, to provide entrained air, by volume, in the cured concrete within 4.5 to 6.5 percent.
- F. Water-Reducing Admixture - The approved water-reducing admixture shall be used in all concrete, in accordance with manufacturer's written instructions.
- G. Concrete slabs, including slabs on grade, shall have a maximum water cement ratio of 0.45.
- H. The approved superplasticizer shall be used in all concrete slabs, including slabs on grade.
- I. Water content and cement content of concrete to be used in work shall be based on curve showing relation between water content, cement content, and 7 and 28 day compressive strengths of concrete made using proposed materials. Curves shall be determined by four or more points, each representing an average of at least three test specimens at each age, and shall have range of values sufficient to yield desired data, including all compressive strengths required by Contract Documents, without extrapolation. Design mix of concrete to be used in work, as determined from curve, shall correspond to following test strengths (TABLE B) obtained in laboratory trial mixtures, but in no case shall resulting mix conflict with limiting values as specified in TABLE A.

TABLE B

## Minimum Strength of Lab Trial Mixes (psi)

| Design<br>Strength | Trial Mix Strength |         |
|--------------------|--------------------|---------|
|                    | 7-days             | 28-days |
| 4000               | 3800               | 5000    |
| 3000               | 2700               | 3750    |

- J. Any deviation from approved mix design, which the Contractor deems desirable under certain project conditions, will not be allowed without written approval of Designer. Cost of any additional testing by Testing Agency associated therewith shall be paid for by the Contractor.

## 2.3 FORM MATERIALS

- A. Construct formwork to shapes, lines, and dimensions required, plumb and straight, secured and braced sufficiently rigid to prevent deformation under load, and sufficiently tight to prevent leakage, all in conformance with ACI Standard 347, "Recommended Practice for Concrete Formwork".
- B. Formwork for exposed concrete shall be medium-density plastic overlaid plywood, 5/8" minimum thickness; for concealed concrete shall be "Plyform" plywood, 5/8" minimum thickness, or equal.
- C. Chamfer Strips: Half-inch, 45 degree poplar wood strips, nailed six inches on center, and installed in inside corners of all forms, unless otherwise directed by Designer.
- D. Form Ties and Spreaders: Richmond Tyscrus by Richmond Screw Anchor Co.; Superior-ties by Superior Concrete Accessories, Ind.; or Sure-Grip Ties by Dayton, or equal. Sure-Grip and Shore Co. Wire ties shall not be used. Ties for foundation walls shall be snap-ties or type specified above with removal cones and shall incorporate water seal washer. Ties shall be arranged in a symmetrical manner.
- E. Form Release Agent: Non-staining and non-emulsifiable type, or equal approved by Designer. Form release agent shall be biodegradable and shall not impart any stain to concrete nor interfere with adherence of any material to be applied to concrete surfaces.

## 2.4 REINFORCEMENT AND ACCESSORIES

- A. Reinforcing Steel Bars: shall be newly rolled billet steel conforming to ASTM A615 Grade 60. Bars shall be bent cold.
- B. Welded Wire Fabric: shall conform to ASTM A185.
- C. All structural steel reinforcement and embedded items shall be hot-dip galvanized after fabrication in accordance with ASTM A123.
- D. All hot-dip galvanized steel shall be inspected for compliance with ASTM A123 and shall be marked with a stamp that indicates the number of ounces of zinc per square foot of steel. After galvanizing, the bars shall be dipped in a 0.2 percent chromic acid solution. A notarized Certificate of Compliance with all of the above shall be required from the galvanizer.

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

- E. Reinforcement Accessories: shall conform to Product Standard PS7-766, National Bureau of Standards, Department of Commerce, Class C, as produced by Dayton Superior Co., R.K.L. Building Specialties Co., Inc., or equal. Reinforcement accessories shall include spacers, chairs, ties, slab bolsters, clips, chair bars, and other devices for properly assembling, placing, spacing, supporting, and fastening reinforcement. Tie wire shall be galvanized or stainless wire of sufficient strength for intended purpose, but not less than No. 18 gage. Metal supports shall be of such type as not to penetrate surface of formwork and show through surface of concrete. Accessories touching interior formed surfaces exposed to view shall have not less than 1/8 inch of plastic between metal and concrete surface. Plastic tips shall extend not less than 1/2 inch up on metal legs. Individual and continuous slab bolsters and chairs shall be of type to suit various conditions encountered and must be capable of supporting 300 pound load without damage or permanent distortion.

## 2.5 MISCELLANEOUS MATERIALS

- A. Grout: shall be ready-to-use metallic aggregate product requiring only addition of water at job site such as MasterFlow 885 by BASF, Vibro-Foil Ready-Mixed by GCPAT, Ferrolith G by Sonneborn, or equal. Grout shall be easily workable and shall have no drying shrinkage at any age. Compressive strength of grout (2" x 2" cubes) shall not be less than 5000 psi at 7 days, and 7500 psi at 28 days.
- B. Vapor Retarder: Minimum 10 mil polyethylene, unless specifically specified elsewhere.
- C. Membrane Curing Compound: Conform to ASTM C309, Type 1. Product used shall be shown to be compatible with the later application of coatings. Curing compound shall not be used on any floor slab scheduled to receive an adhered floor finish.

## PART 3 - EXECUTION

### 3.1 INSPECTION

- A. Examine all work prepared by others to receive work of this Section and report any defects affecting installation to the Contractor for correction. Commencement of work will be construed as complete acceptance of preparatory work by others.
  - 1. Inspection shall be performed by a structural engineer licensed in the Commonwealth of Massachusetts. Certify compliance with shop drawings.

### 3.2 HANDLING, STORAGE, AND PROTECTION OF MATERIALS

- A. Handle and store materials separately in such manner as to prevent intrusion of foreign matter, segregation, or deterioration. Do not use foreign materials or those containing ice. Remove improper and rejected materials immediately from point of use. Cover materials, including steel reinforcement and accessories, during construction period. Stockpile concrete constituents properly to assure uniformity throughout project.

### 3.3 ERECTION OF FORMWORK, SHORING AND RESHORING

- A. Set and maintain formwork to insure complete concrete work within tolerance limits listed in ACI 347 latest edition, "Recommended Practice for Concrete Formwork", and with following additional requirements:
  - 1. Maximum variations from plumb:
    - a. In surfaces of columns and walls:
      - 1) In any 10 feet of length: 1/4 inch
      - 2) Maximum for entire length: 1/2 inch

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

2. Maximum variations from established position in plan shown on the drawings:
    - a. Column: 1/2 inch
    - b. Walls: 3/4 inch
  3. Variations in cross-sectional dimensions of columns and beams and in thickness of slabs and walls.
    - a. Minus: 1/8 inch
    - b. Plus: 1/4 inch
- B. For a minimum of one hour prior to concrete placement, wet forms continuously with water to swell forms in order to prevent leakage of concrete matrix and to minimize absorption of concrete matrix water by form materials. This requirement may be waived for those specific cases where Designer deems it unnecessary or impractical. Care must be exercised to prevent a build-up of water at base of forms.
- C. Before form materials can be re-used, surfaces that will be in contact with freshly cast concrete shall be thoroughly cleaned, damaged areas repaired and projecting nails withdrawn. Re-use of form material shall be subject to approval by Designer.

### 3.4 PLACING OF REINFORCEMENT

- A. Reinforcement shall be placed in accordance with requirements of CRSI 93, "Recommended Practice for Placing Reinforcing Bars" and CRSI 93, "Recommended Practice for Placing Bar Supports" and with further requirements below.
- B. Reinforcement shall be accurately placed in accordance with Contract Documents and shall be firmly secured in position by wire ties, chairs, spacers, and hangers, each of type approved by Designer.
- C. Bending, welding or cutting reinforcement in field in any manner other than as shown on Drawings, is prohibited, unless specific approval for each case is given by Designer.
- D. Reinforcement shall be continuous through construction joints unless otherwise indicated on Drawings.
- E. Reinforcement shall be spliced only in accordance with requirements of Contract Documents or as otherwise specifically approved by Designer. Splices of reinforcement at points of maximum stress shall generally be avoided. Welded wire fabric shall lap six inches or one space plus two inches whichever is larger, and shall be wired together.
- F. At time concrete is placed, reinforcement shall be free of excessive rust, scale, or other coatings that will destroy or reduce bond requirements. Reinforcement expected to be exposed to weather for a considerable length of time shall be painted with a heavy coat of cement grout. Protect stored materials so as not to end or distort bars in any way. Bars that become damaged will be rejected.
- G. Before concrete is cast, check all reinforcement after it is placed to insure that reinforcement conforms to Contract Documents and approved Shop Drawings. Such checking shall be done only by qualified experienced personnel. In addition, the Designer shall be notified at least 36 hours prior to concrete placement and given opportunity to inspect completed reinforcement and formwork before concrete placement. Prior approval of Shop Drawings shall in no way limit Designer's right to demand modifications or additions to reinforcement or accessories.

### 3.5 JOINTS

- A. Construction and control joints indicated on Drawings are mandatory and shall not be omitted.

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

- B. Joints not indicated or specified shall be placed to least impair strength of structure and shall be subject to approval of Designer.

### 3.6 INSTALLATION OF EMBEDDED ITEMS

- A. Conform to requirements of ACI 318, paragraph 6.3, "Conduits and Pipes Embedded in Concrete", and as specified below.
- B. Install steel sleeves, embedded wall plates and similar items, furnished by other trades, at locations shown on the drawings.
- C. Anchor bolts for column base plates shall be installed with templates provided. Vertical alignment and plan locations shall be maintained within one-sixteenth inches of the locations shown on the drawings.
  - 1. Inspection shall be performed by a surveyor licensed in the Commonwealth of Massachusetts. Certify compliance with shop drawings.

### 3.7 MIXING, CONSISTENCY, AND DELIVERY OF CONCRETE

- A. Concrete shall be ready-mixed, produced by plant acceptable to Designer. Hand or site mixing shall not be done. Constituents, including admixtures except certain corrosion inhibitors and superplasticizers, shall be batched at central batch plant. Admixtures shall be premixed in solution form and dispensed as recommended by manufacturer.
- B. Central plant and rolling stock equipment and methods shall conform with Truck Mixer and Agitator Standard of Truck Mixer Manufacturer's Bureau of National Ready-Mixed Concrete Association, and Contract Documents. Consistency of concrete at time of deposit shall be as follows:

#### Slump

| Portion of Structure | Recommended | Max. Range |
|----------------------|-------------|------------|
| Walls, columns       | 4"          | 3" - 5"    |
| Slabs, beams         | 3"          | 2" - 4"    |

- C. Ready mixed concrete shall be transported to site in watertight agitator or mixer trucks loaded not in excess of rated capacities. Discharge at site shall be within one and one-half hours after cement was first introduced into mix. Discard cement not discharged within one and one-half hours and dispose of legally. Concrete with a temperature greater than 85 degrees F. shall not be placed. Central mixed concrete shall be plant mixed a minimum of five minutes. Agitation shall begin immediately after premixed concrete is placed in truck and shall continue without interruption until discharged. Transit mixed concrete shall be mixed at mixing speed for at least ten minutes immediately after charging truck followed by agitation without interruption until discharged. Concrete shall be furnished by a single plant unless accepted by the Designer in writing.
- D. Retempering of concrete which has partially hardened, that is, mixing with or without additional cement, aggregates, or water, will not be permitted.

### 3.8 PLACING CONCRETE

- A. Intent of this Specification is that concrete shall not be pumped. Refer to "Submittals and Concrete Constituents" in this Section for requirements should pumping be proposed.

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

- B. Remove water and foreign matter from forms and excavations and, except in freezing weather or as otherwise directed, thoroughly wet wood forms just prior to placing concrete. Place no concrete on frozen soil and provide adequate protection against frost action during freezing weather.
- C. To secure full bond at construction joints, surfaces of concrete already placed, including vertical and inclined surfaces, shall be thoroughly cleaned of foreign materials and laitance, roughened with suitable tools such as chipping hammers or wire brushes, and recleaned by stream of water or compressed air. Well before new concrete is deposited, joints shall be saturated with water. After free or glistening water disappears joints shall be given thorough coating of neat cement slurry mixed to consistency of very heavy paste. Surface shall receive coating of approximately one-eighth inch thick; this shall be scrubbed in by means of stiff bristle brushes. New concrete shall be deposited before neat cement dries or changes color.
- D. Do not place concrete having slump outside of allowable slump range.
- E. Transport concrete from mixer to place of final deposit as rapidly as practical by methods which prevent separation of ingredients and displacement of reinforcement, and which avoid rehandling. Deposit no partially hardened concrete. When concrete is conveyed by chutes, equipment shall be of such size and U-shaped design as to insure continuous flow in chute. Flat (coal) chutes shall not be employed. Chutes shall be of metal or metal lined and different portions shall have approximately same slope. Slope shall not be less than 25 degrees nor more than 45 degrees from horizontal and shall be such as to prevent segregation of ingredients. Discharge end of chute shall be provided with baffle plate or spout to prevent segregation. If discharge end of chute is more than five feet above surface of concrete in forms, spout shall be used, and lower and maintained as near surface of deposit as practicable. When operation is intermittent, chute shall discharge into hopper. Chute shall be thoroughly cleaned before and after each run and debris and any water used shall be discharged outside forms. Concrete shall not be allowed to flow horizontally over distances exceeding five feet.
- F. Concrete shall be placed in such manner as to prevent segregation, and accumulations of hardened concrete on forms or reinforcement above mass of concrete being placed. To achieve this end, suitable hoppers, spouts with restricted outlets and tremies shall be used as required.
- G. During and immediately after depositing, concrete shall be thoroughly compacted by means of internal type mechanical vibrators or other tools, or by spading to produce required quality of finish. Vibration shall be done by experienced operators under close supervision and shall be carried on only enough to produce homogeneity and optimum consolidation without permitting segregation of constituents or "pumping" of air. Vibrators used for normalweight concrete shall operate at speed at not less than 7,000 vpm and be of suitable capacity. Do not use vibrators to move concrete. Vibration shall be supplemented by proper wooden spade puddling to remove included bubbles and honeycomb adjacent to visible surfaces. At least one vibrator shall be on hand for every 10 cubic yards of concrete placed per hour, plus one spare. Vibrators shall be operable and on site prior to starting placement.
- H. Vertical lifts shall not exceed 18 inches. Vibrate completely through successive lifts to avoid pour lines. Vibrate first lift thoroughly until top of lift glistens to avoid stone pockets, honeycomb, and segregation.
- I. Concrete shall be deposited continuously, and in layers of such thickness that no concrete will be deposited on concrete which has hardened sufficiently to cause formation of seams and planes of weakness within section. If section cannot be placed continuously between planned construction joints, as specified, field joint and additional reinforcement shall be introduced so as to preserve structural continuity. Designer shall be notified in any such case.

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

- J. Cold joints, particularly in exposed concrete, including "honeycomb", are unacceptable. If they occur in concrete surfaces exposed to view, Designer will require that entire section in which blemish occurs be removed and replaced with new materials at the Contractor's expense.
- K. When placing exposed concrete walls or columns, strike corners of forms rapidly and repeatedly from outside along full height while depositing concrete and vibrating.
- L. Chutes, hoppers, spouts, adjacent work, etc. shall be thoroughly cleaned before and after each run and water and debris shall be discharged outside form.

### 3.9 FINISHING OF UNFORMED CONCRETE SURFACES

- A. Smooth troweled finish: shall be provided where concrete flatwork is to be exposed in the finished work or is to receive resilient flooring materials.
- B. Floated finish: shall be provided where concrete flatwork is to receive waterproofing membranes or setting beds for finished materials.
- C. Floated finish: shall be provided for top surfaces of walls, slabs and beams.
- D. Rough struck surface shall be provided at top of pedestals.
- E. Steel Broom Finish (with smooth edging): shall be provided at exterior concrete walks, pavements and steps.
- F. The Contractor, at his own expense, shall level depressed spots and grind high spots in concrete surfaces which are in excess of specified tolerances. Leveling materials proposed for providing proper surface shall be approved by Designer.

### 3.10 REPAIRING OF UNFORMED CONCRETE SURFACES

- A. Tops of slabs and walls shall be repaired by using either same material as originally cast or by use of dry-pack material, as approved by Designer. Areas affected shall be chipped back square and to depth of one inch minimum. Hole shall then be moistened with water for a minimum of two hours, followed by brush coat of 1/16 inch thick cement paste. Immediately plug hole with concrete, or with dry pack material consisting of 1:1.5 mixture of cement and concrete sand mixed slightly damp to touch. Hammer dry-pack into hole until dense, and excess paste appears on surface. Finish patch flush and to same texture as surrounding concrete. For large repairs employ 1-1-2 mixture of cement, concrete sand and pea gravel at same dry-pack consistency.

### 3.11 CURING AND PROTECTION

- A. When concrete is placed at or below ambient air temperatures of 40 degrees F. or whenever in opinion of Designer, such or lower temperatures are likely to occur within 48 hours after placement of concrete, cold weather concreting procedures, according to ACI 306 and as specified herein, shall be followed. To this end, entire area affected shall be protected by adequate housing or covering, and heating. No salt, chemicals or other foreign materials shall be used in the mix to lower freezing point of concrete.
- B. Protect concrete work against injury from heat, cold, and defacement of any nature during construction operations.
- C. Concrete shall be treated and protected immediately after concreting or cement finishing is completed, to provide continuous moist curing above 50 degrees F. for at least seven days, regardless of ambient air temperatures.
- D. Curing compounds will not be permitted for slab and beams.

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

- E. Keep permanent temperature record showing date and outside temperature for concreting operations. Thermometer readings shall be taken at start of work in morning, at noon, and again late in afternoon. Locations of concrete placed during such periods shall likewise be recorded, in such manner as to show any effect temperatures may have had on construction. Copies of temperature record shall be distributed daily to Designer.

### 3.12 REMOVAL OF FORMWORK, SHORING AND RESHORING

- A. The Contractor shall be responsible for proper removal of formwork, shoring, and reshoring.
- B. Forms shall be removed only after concrete has attained sufficient strength to support its shown weight, construction loads to be placed thereon and lateral loads, without damage to structure or excessive deflection.
- C. Forms and supports shall remain in place for not less than minimum periods of time noted below. These periods represent cumulative number of days or fractions thereof, consecutive unless otherwise approved by Designer during which time mean daily air temperature at surfaces of concrete is above 50 degrees F.
  - 1. Vertical Surfaces: concrete shall have reached 100 day-degrees# and shall have attained strength of not less than 30 percent of f'c. Where such forms also support formwork for slab or beam soffits, removal times for latter shall govern.
  - 2. Horizontal Surfaces: except as noted below, concrete shall have reached 300 day-degrees of curing and attained strength of not less than 60 percent of f'c.
    - a. Soffits of beams or girders shall remain supported and in place until concrete has attained 600 day-degrees#.
    - b. Forms and supports of floor slabs shall remain in place until concrete has reached 400 day-degrees.
    - c. Definition of day-degrees: Total number of days times mean daily air temperature at surfaces of concrete. For example, five days at temperature of 60 degrees F. equals 300 day degrees. Days or fractions of days in which temperature is below 50 degrees F. shall not be included in calculation of day-degrees.
- D. Form removal shall be so performed that reshores are placed at same time as stripping operations, and that no area larger than one-fourth of a slab panel is unsupported at any time.
- E. Any test cylinders required to verify the specified minimum strengths for form removal shall be field cured under the same conditions as the concrete they represent. Such cylinders and testing shall be at the Contractor's expense.

### 3.13 REPAIRING AND FINISHING OF FORMED AND ARCHITECTURAL CONCRETE SURFACES

- A. In accordance with the provisions of ACI 301, Chapter 10, all concrete shall have "smooth form finish".
- B. Intent of this Specification is to require forms, mixtures of concrete, and workmanship so that concrete surfaces will require no patching, except for plugging of tie holes. However, where patching is acceptable to Designer, procedure described below shall be followed.
- C. Defective concrete and honeycombed areas shall not be patched unless examined and approval is given by Designer. If such approval is received by the Contractor, areas involved shall be chipped down square and at least one inch deep to sound concrete by means of cold chisels or pneumatic chipping hammers. If honeycomb exists around reinforcement, chip to provide clear space at least three-quarter inch wide all around steel to afford proper ultimate bond thereto. For areas less than one and one-half inches deep, patch shall be made in same manner as described above for filling unformed concrete surfaces, care being exercised to use crumbly-dry (non-trowelable) mixtures and to avoid sagging. Thicker repairs shall require build-

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

up in successive days, each layer being applied as described. To aid strength and bonding of multiple layer repairs, non-shrink, non-metallic aggregate shall be used as an additive as follows:

| Materials              | Volumes | Weights |
|------------------------|---------|---------|
| Cement                 | 1.0     | 1.0     |
| Non-Metallic Aggregate | 0.15    | 0.25    |
| Sand                   | 1.5     | 1.55    |

For very heavy (generally, formed) patches, pea gravel may be added to mixture and proportions modified as follows:

| Materials              | Volumes | Weights |
|------------------------|---------|---------|
| Cement                 | 1.0     | 1.0     |
| Non-Metallic Aggregate | 0.2     | 0.33    |
| Sand                   | 1.0     | 1.0     |
| Pea Gravel             | 1.5     | 1.55    |

After hardening, rub lightly as described above for form tie holes.

1. Mortar for patching shall be same mix as above except aggregate shall pass a No. 14 sieve.
  2. For all concrete to receive "smooth" finish, remove formwork fins and clean entire surface of grease, form oil, laitance, dust, and other foreign matter.
  3. "Smooth" finish shall consist of having all fins removed, joint marks smoothed off, blemishes removed, and surfaces left smooth and unmarred.
  4. Begin finishing operations as soon as practicable after removal of forms, continue with curing operations after finishing is completed. After concrete has been well cured, carefully inspect surfaces. Remove any fins, rough spots, streaks, hardened mortar or grout and other foreign material. Patch defects with finishing mortar as specified above, to satisfaction of Designer.
- D. Patches which become crazed, cracked, or sound hollow upon tapping shall be removed and replaced with new material at the Contractor's expense.

### 3.14 FIELD QUALITY CONTROL

- A. Independent Testing Agency: Cooperate with the Independent Testing Agency engaged by the Owner for field quality control activities for the Work of this Section. Refer also to Section 01 4325 – Testing Agency Services.
- B. Commissioning Authority: Cooperate with the Commissioning Authority engaged by the Owner for field quality control activities for the Work of this Section. Refer also to Section 01 9115 – Facility Exterior Enclosure Commissioning.

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

- C. Cooperate with field quality control personnel. Allow inspectors access to scaffolding and work areas, as needed to perform inspections.
- D. Additional inspections and retesting of materials which fail to comply with specified material and installation requirements shall be performed at the Contractor's expense.

3.15 CLEANING

- A. Concrete surfaces shall be cleaned of objectionable stains as determined by the Designer. Materials containing acid in any form or methods which will damage "skin" of concrete surfaces shall not be employed, except where otherwise specified.

END OF SECTION

## SECTION 03 3930

## GRAVITY FEED CRACK REPAIR

## PART 1 - GENERAL

## 1.1 GENERAL REQUIREMENTS

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

## 1.2 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment for grouting of cracks by gravity flow with an epoxy resin adhesive.
- B. Alternates: Not Applicable.
- C. Items To Be Installed Only: Not Applicable.
- D. Items To Be Furnished Only: Not Applicable.
- E. Related Work: The following items are not included in this Section and will be performed under the designated Sections:
1. Section 03 3000 – Cast-In-Place Concrete for concrete slab infill work at Utility Trenching.



## 1.3 UNIT PRICES

- A. Unit Prices for the following work are included in Section 01 2200 – Unit Prices.

| Section | Item Description                                     | Quantity |
|---------|------------------------------------------------------|----------|
| 03 3930 | Gravity Feed Crack Repair at concrete slab-on-grade. | 100 LF   |

## 1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: The manufacturer of the specified product shall be ISO 9001/9002 certified and have in existence a recognized ongoing quality assurance program independently audited on a regular basis.
- B. Contractor Qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have received product training by a manufacturer's representative.
- C. Install materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Material Safety Data Sheets for complete handling recommendations.

## 1.5 DELIVERY, STORAGE, AND HANDLING

- A. All materials must be delivered in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

- B. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.
- C. Condition the specified product as recommended by the manufacturer.

#### 1.6 JOB CONDITIONS

- A. Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent. Minimum application temperature 40°F (5°C) and rising.
- B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified material.

#### 1.7 SUBMITTALS

- A. Submit two copies of manufacturer's literature, to include: Product Data Sheets, and appropriate Material Safety Data Sheets (MSDS).

#### 1.8 Warranty

- A. Provide a written warranty from the manufacturer against defects of materials for a period of one (1) year, beginning with the date of substantial completion of the project.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- 1. Basis of Design: Sikadur 25 Lo-Mod EPU, as manufactured by Sika Corporation, 201 Polito Avenue, Lyndhurst, New Jersey 07071, or approved equal.

#### 2.2 MATERIALS

- A. Epoxy resin adhesive binder:
  - 1. Component "A" shall be a modified epoxy resin of the diglycidether bisphenol A Type containing suitable viscosity control agents. It shall not contain butyl glycidyl ether.
  - 2. Component "B" shall be primarily a reaction product of a selected amine blend with an epoxy resin of the diglycidether bisphenol A Type containing suitable viscosity control agents, pigments, and accelerators.
  - 3. The ratio of Component "A": Component "B" shall be 1:1 by volume.

#### 2.3 PERFORMANCE CRITERIA

- A. Typical Properties of the mixed epoxy resin adhesive binder:
  - 1. Pot life: min. 25 minutes (60 gram mass @ 73F)
  - 2. Tack-free time: (20 mil thickness at 73F): 3 - 3.5 hours
  - 3. Color: clear, amber
- B. Typical Properties of the mixed neat cured epoxy resin adhesive binder:
  - 1. Compressive Properties (ASTM D-695) at 28 days
    - a. Compressive Strength: 13,000 psi min (89.6 MPa)
    - b. Compressive Modulus: 320,000 psi (2,200 MPa)

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

2. Tensile Properties: (ASTM D-638) at 14 days
  - a. Tensile Strength: 8,900 psi min (61 MPa)
  - b. Elongation at Break: 5.4%
  - c. Modulus of Elasticity: 410,000 psi (2,800 MPa)
3. Flexural Properties: (ASTM D-790) at 14 days
  - a. Flexural Strength (Modulus of Rupture): 14,000 psi min (97 MPa)
  - b. Tangent Modulus of Elasticity in Bending: 370,000 psi (2,800 MPa)
4. Shear Strength (ASTM D-732) at 14 days: 5,100 psi min (35 MPa)
5. Total water absorption (ASTM D-570) at 7 days: 0.27% (2 hour boil)
6. Bond Strength (ASTM C-882) Hardened Concrete to Hardened Concrete
  - a. 2 days (dry cure): 2,800 psi min (19 MPa)
  - b. 14 days (moist cure): 2,900 psi min (17 MPa)
7. Deflection Temperature (ASTM D-648) at 14 days: 129F min. (fiber stress loading = 264 psi)

### PART 3 - EXECUTION

#### 3.1 SURFACE PREPARATION

- A. Vee notch the surface of the crack with mechanical router or hand chipping tool to a maximum width of ¼". Remove loose debris. The substrate may be dry or damp prior to product application. Where accessibility to the underside of the slab is available, seal all visible cracks with an epoxy resin adhesive paste or Portland cement-based quick setting compound to act as a dam to hold the liquid epoxy resin adhesive until cured.



#### 3.2 MIXING AND APPLICATION

- A. Mixing the epoxy resin adhesive binder: Proportion **1 part** by volume of Component "A" and 1 part of Component "B" by volume into a clean, dry mixing pail. Mix thoroughly for 3 minutes min. with a jiffy paddle on a low-speed (400-600 rpm) drill. Mix only that quantity of material that can be used within its pot life (20-30 minutes at 73F).
- B. Placement Procedures: Place the mixed epoxy resin adhesive into the vee-notch crack. Replenish the reservoir with the mixed epoxy resin adhesive until the crack has been completely filled.
- C. If penetration of any crack is impossible, consult the Designer before discontinuing the procedure. If modification of proposed procedure is required to fill the crack, submit modification in writing to the Designer for acceptance prior to proceeding.
- D. Adhere to all limitations and cautions for the epoxy resin adhesive binder in the manufacturers current printed literature.

#### 3.3 CLEANING

- A. The uncured epoxy resin adhesive can be cleaned from tools with an approved solvent. The cured epoxy resin adhesive can only be removed mechanically.
- B. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

END OF SECTION

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

## SECTION 06 8316

### FIBER GLASS REINFORCED PLASTIC (FRP) PANELS

#### PART 1 - GENERAL

##### 1.1 GENERAL REQUIREMENTS

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

##### 1.2 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
  - 1. Fiberglass Reinforced Paneling (FRP) wall panels.
  - 2. Accessories and Trim.
- B. Alternates: Not Applicable.
- C. Items To Be Installed Only: Not Applicable
- D. Items To Be Furnished Only: Not Applicable.
- E. Related Work:
  - 1. Section 07 9200 – Joint Sealants.

##### 1.3 SECTION INCLUDES

- A. Fiberglass reinforced plastic panels.
- B. Accessories and trim.

##### 1.4 REFERENCE STANDARDS

- A. ASTM D256 - Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics.
- B. ASTM D2583 - Standard Test Method for Indentation Hardness of Rigid Plastics by Means of Barcol Impressor.
- C. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
- D. ASTM D5319 - Standard Specification for Glass-Fiber Reinforced Polyester Wall and Ceiling Panels.
- E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- F. ISO 846 - Plastics -- Evaluation of the action of microorganisms.
- G. ISO 2812-1 - Paints and varnishes -- Determination of resistance to liquids -- Part 1: Immersion in liquids other than water.

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

## 1.5 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store panels flat, indoors, on a clean, dry surface. Remove packaging and allow panels to acclimate to room temperature for 48 hours prior to installation.

## 1.7 PROJECT CONDITIONS

- A. 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 absolute limits.

# PART 2 - PRODUCTS

## 2.1 MANUFACTURERS

- A. Acceptable Manufacturers - Panels:
  - 1. Crane Composites, Inc.: [www.cranecomposites.com](http://www.cranecomposites.com).
  - 2. Glasteel: [www.glasteel.com](http://www.glasteel.com).
  - 3. Kemlite: [www.kemlite.com](http://www.kemlite.com).
  - 4. Marlite, Inc.: [www.marlite.com/#sle](http://www.marlite.com/#sle).
  - 5. Nudo Products, Inc.: [www.nudo.com/#sle](http://www.nudo.com/#sle).
  - 6. Substitutions: See Section 016000 - Product Requirements.

## 2.2 PANEL SYSTEMS

- A. Wall Panels:
  - 1. Panel Size: As indicated on Drawings.
  - 2. Panel Thickness: **0.09 inch.**
  - 3. Surface Design: As indicated on Drawings.
  - 4. Color: As selected by Architect from manufacturer's full line.
  - 5. Attachment Method: Adhesive only, with trim and sealant in joints.



## 2.3 MATERIALS

- A. Panels: Fiberglass reinforced plastic (FRP), complying with ASTM D5319.
  - 1. Surface Burning Characteristics: Maximum flame spread index of 25 and smoke developed index of 450; when system tested in accordance with ASTM E84.
  - 2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

3. Scratch Resistance: Barcol hardness score greater than 35, when tested in accordance with ASTM D2583.
  4. Impact Strength: Greater than 6 ft lb force per inch, when tested in accordance with ASTM D256.
  5. Chemical Cleanability: Excellent chemical resistance to common cleaners and detergents when tested in accordance with ISO 2812-1.
  6. Biological Resistance: Rating of 0, when tested in accordance with ISO 846.
- B. Trim: Vinyl; color coordinating with panel.
- C. Sealant: Silicone; color matching panel.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Verify existing conditions and substrate flatness before starting work.
- B. Verify that substrate conditions are ready to receive the work of this section.

#### 3.2 INSTALLATION – WALLS

- A. Install panels in accordance with manufacturer's instructions.
- B. Cut and drill panels with carbide tipped saw blades, drill bits, or snips.
- C. Apply adhesive to the back side of the panel using trowel as recommended by adhesive manufacturer.
- D. Apply panels to wall with seams plumb and pattern aligned with adjoining panels.
- E. Install panels with manufacturer's recommended gap for panel field and corner joints.
- F. Place trim on panel before fastening edges, as required.
- G. Fill channels in trim with sealant before attaching to panel.
- H. Install trim with adhesive and screws or nails, as required.
- I. Seal gaps at floor, ceiling, and between panels with applicable sealant to prevent moisture intrusion.
- J. Remove excess sealant after paneling is installed and prior to curing.

END OF SECTION

City of Worcester  
1407A Main Street Worcester MA 01603

October 5, 2026

## SECTION 08 7100

### DOOR HARDWARE

#### PART 1 - GENERAL

##### 1.1 GENERAL REQUIREMENTS

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

##### 1.2 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
  - 1. Commercial door hardware.
  - 2. Cylinders for doors specified in other Sections as listed below.
  - 3. Electrified door hardware and transformers.
- B. Alternates: Not Applicable.
- C. Items To Be Installed Only: Not Applicable.
- D. Items To Be Furnished Only: Not Applicable.
- E. Related Work: The following items are not included in this Section and will be performed under the designated Sections:
  - 1. Section 08 1113 – Hollow Metal Doors and Frames for astragals provided as part of a fire-rated labeled assembly and for door silencers provided as part of the frame.
  - 2. Section 08 1416 – Flush Wood Doors for astragals provided as part of a fire-rated labeled assembly.

##### 1.3 SUBMITTALS

- A. Product Data: Include installation details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
  - 1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
  - 2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening.
    - a. Organize door hardware sets in same order as in the Door Hardware Schedule at the end of Part 3.
  - 3. Content: Include the following information:
    - a. Type, style, function, size, label, hand, and finish of each door hardware item.
    - b. Manufacturer of each item.
    - c. Fastenings and other pertinent information.

City of Worcester  
1407A Main Street Worcester MA 01603

October 5, 2026

- d. Location of each door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
    - e. Explanation of abbreviations, symbols, and codes contained in schedule.
    - f. Mounting locations for door hardware.
    - g. Door and frame sizes and materials.
    - h. Description of each electrified door hardware function, including location, sequence of operation, and interface with other building control systems.
  - 1) Sequence of Operation: Include description of component functions that occur in the following situations: authorized person wants to enter; authorized person wants to exit; unauthorized person wants to enter; unauthorized person wants to exit. Reset time period for time delayed hardware.
  - 4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.
  - C. Keying Schedule: Prepared by or under the supervision of supplier, detailing the Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations.
  - D. Product Certificates: Signed by manufacturers of electrified door hardware certifying that products furnished comply with requirements.
    - 1. Certify that door hardware approved for use on types and sizes of labeled fire doors complies with listed fire door assemblies.
  - E. Qualification Data: For firms and persons specified in "Quality Assurance" Article.
    - 1. Include lists of completed projects with project names and addresses of architects and owners, and other information specified.
  - F. Maintenance Data: For each type of door hardware to include in maintenance manuals specified in Division 01.
  - G. Warranties: Special warranties specified in this Section.
  - H. Fire Door Assembly Inspection and Testing Reports: Submit a written report of the results of functional testing and inspection for fire door assemblies, in compliance with NFPA 80-2007/2010 requirements. Written report shall be provided to the Owner to be made available to the Authority Having Jurisdiction (AHJ). Report shall include the door number for each fire door assembly, door location, door and frame material, fire rating, and summary of deficiencies..
- 1.4 QUALITY ASSURANCE
- A. Installer Qualifications: An experienced installer who has completed door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
  - B. Supplier Qualifications: Door hardware supplier with warehousing facilities in Project's vicinity and who is or employs a qualified Architectural Hardware Consultant, available during the course of the Work to consult with Contractor, Designer, and the Owner about door hardware and keying.

City of Worcester  
1407A Main Street Worcester MA 01603

October 5, 2026

1. Electrified Door Hardware Supplier Qualifications: An experienced door hardware supplier who has completed projects with electrified door hardware similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance, and who is acceptable to manufacturer of primary materials.
    - a. Engineering Responsibility: Prepare data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.
  2. Scheduling Responsibility: Preparation of door hardware and keying schedules.
- C. Architectural Hardware Consultant Qualifications: A person who is currently certified by the Door and Hardware Institute as an Architectural Hardware Consultant and who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project.
1. Electrified Door Hardware Qualifications: Experienced in providing consulting services for electrified door hardware installations.
- D. Source Limitations: Obtain each type and variety of door hardware from a single manufacturer, unless otherwise indicated.
1. Provide electrified door hardware from same manufacturer as mechanical door hardware, unless otherwise indicated. Manufacturers that are listed to perform electrical modifications, by a testing and inspecting agency acceptable to authorities having jurisdiction, are acceptable.
- E. Regulatory Requirements: Comply with provisions of the following:
1. Where indicated to comply with accessibility requirements, comply with Massachusetts Architectural Access Board and the Americans with Disabilities Act (ADA), "Accessibility Guidelines for Buildings and Facilities (ADAAG)," as follows:
    - a. Handles, Pulls, Latches, Locks, and other Operating Devices: Shape that is easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist.
    - b. Door Closers: Comply with the following maximum opening-force requirements indicated:
      - 1) Interior Hinged Doors: 5 lbf applied perpendicular to door.
      - 2) Sliding or Folding Doors: 5 lbf applied parallel to door at latch.
      - 3) Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
    - c. Thresholds: Not more than 1/2 inch high. Bevel raised thresholds with a slope of not more than 1:2.
  2. Requirements of 521 CMR 20.8.1 and NFPA 101: Comply with the following for means of egress doors:
    - a. Latches, Locks, and Exit Devices: Not more than 15 lbf to release the latch. Locks shall not require the use of a key, tool, or special knowledge for operation.
    - b. Delayed-Egress Locks: Lock releases within 15 seconds after applying a force not more than 15 lbf for not more than 3 seconds.
    - c. Door Closers: Not more than 15 lbf to open door to minimum required width.
    - d. Thresholds: Not more than 1/2 inch high.
  3. Electrified Door Hardware: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.
- F. Fire-Rated Door Assemblies: Provide door hardware for assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having

City of Worcester  
1407A Main Street Worcester MA 01603

October 5, 2026

jurisdiction, for fire ratings indicated, based on testing at positive pressure according to NFPA 252.

- G. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meet requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.
  - 1. Air Leakage Rate: Maximum air leakage of 0.3 cfm/sq. ft. at the tested pressure differential of 0.3-inch wg of water.
- H. Keying Conference: Conduct conference at Project site to comply with requirements in Division 01. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including, but not limited to, the following:
  - 1. Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
  - 2. Preliminary key system schematic diagram.
  - 3. Requirements for key control system.
  - 4. Address for delivery of keys.
- I. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01. Review methods and procedures related to electrified door hardware including, but not limited to, the following:
  - 1. Inspect and discuss electrical roughing-in and other preparatory work performed by other trades.
  - 2. Review sequence of operation for each type of electrified door hardware.
  - 3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
  - 4. Review required testing, inspecting, and certifying procedures.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.
- B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
- C. Deliver keys to manufacturer of key control system.

#### 1.6 COORDINATION

- A. Coordinate layout and installation of recessed pivots and closers with floor construction. Cast anchoring inserts into concrete. Concrete, reinforcement, and formwork requirements are specified in Section 03 3000 – Cast-In-Place Concrete.
- B. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing door hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

City of Worcester  
1407A Main Street Worcester MA 01603

October 5, 2026

- C. Electrical System Roughing-in: Coordinate layout and installation of electrified door hardware with connections to power supplies, fire alarm system and detection devices, access control and building control system.
- D. Existing Openings: Where hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide proper door operation.

## 1.7 WARRANTY

- A. General Warranty: Special warranties specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Special Warranty: Written warranty, executed by manufacturer agreeing to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period. Failures include, but are not limited to, the following:
  - 1. Structural failures including excessive deflection, cracking, or breakage.
  - 2. Faulty operation of operators and door hardware.
  - 3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
- C. Warranty Period: Three years from the date of Certificate of Agency Use and Occupancy. Guarantees or warranties that start at the date of shipment from the factory, or from the completion date of an individual portion of the project, are not acceptable.
- D. Warranty Period for Manual Closers: Ten years from the date of Certificate of Agency Use and Occupancy. Guarantees or warranties that start at the date of shipment from the factory, or from the completion date of an individual portion of the project, are not acceptable.

## 1.8 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for the facility's continued adjustment, maintenance, and removal and replacement of door hardware.

## PART 2 - PRODUCTS

### 2.1 SCHEDULED DOOR HARDWARE

- A. Scheduled and acceptable manufacturers must provide all the functions and features of the specified product or it will not be approved.

| Item                 | Scheduled Manufacturer | Acceptable Manufacturers |
|----------------------|------------------------|--------------------------|
| Hinges               | Ives (IVE)             | McKinney, Hager, Stanley |
| Continuous Hinges    | Markar (MAR)           | Stanley, Ives            |
| Locksets & Deadlocks | Schlage (SCH)          | Sargent, Best            |
| Access Control Locks | Schlage (SCH)          | User Standard            |
| Cylinders & Keying   | Schlage (SCH)          | User Standard            |

| Core                               | User Standard        |                    |
|------------------------------------|----------------------|--------------------|
| Exit Devices & Mullions            | Von Duprin (VON)     | Precision, Sargent |
| Door Closers & Automatic Operators | LCN (LCN)            | Sargent            |
| Push & Pull Plates & Bars          | Ives (IVE)           | Rockwood, Burns    |
| Flush Bolts & Coordinators         | Ives (IVE)           | Rockwood, Burns    |
| Protection Plates                  | Ives (IVE)           | Rockwood, Burns    |
| Stops & Holders                    | Ives (IVE)           | Rockwood, Burns    |
| Overhead Stops                     | Glynn-Johnson (GLY)  | Sargent, Rixson    |
| Silencers                          | Ives (IVE)           | Rockwood, Burns    |
| Thresholds & Weather-strip         | National Guard (NGP) | Pemko, Reese       |

- B. Hand of Door: Drawings show direction of slide, swing, or hand of each door leaf. Furnish each item of hardware for proper installation and operation of door movement as shown.
- C. Where the hardware specified is not adaptable to the finished shape or size of the members requiring hardware, furnish suitable types having the same operation and quality as the type specified, subject to the Designer's approval.

## 2.2 MATERIALS

### A. Fasteners:

- Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation.
- Furnish screws for installation with each hardware item. Finish exposed (exposed under any condition) screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work as closely as possible including "prepared for paint" surfaces to receive painted finish.
- Provide concealed fasteners for hardware units that are exposed when door is closed except to the extent that no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work unless their use is the only means of reinforcing the work adequately to fasten the hardware securely.
- All hardware shall be installed with the fasteners provided by the hardware manufacturer.

### B. Hinges:

- The following is a guide for hinge type required for this specification:
  - 1-3/4" thick doors up to and including 3'-0" wide:
    - Exterior: standard weight, ball bearing, bronze/stainless steel, 4-1/2" high
    - Interior: standard weight, ball bearing, steel, 4-1/2" high
  - 1-3/4" thick doors over 3'-0" wide:

City of Worcester  
1407A Main Street Worcester MA 01603

October 5, 2026

- 1) Exterior: heavy weight, ball bearing, bronze/stainless steel, 5" high
    - 2) Interior: heavy weight, ball bearing, steel, 5" high
  2. Provide 3 hinges per door leaf for doors 90 inches or less in height, and one additional hinge for each 30 inches of additional door height.
  3. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
    - a. Steel Hinges: Steel pins
    - b. Non-Ferrous Hinges: Stainless steel pins
    - c. Out-Swinging Exterior Doors: Non-removable pins
    - d. Interior Doors: Non-rising pins
  4. The width of hinges shall be 4-1/2" or as required for clearance.
- C. Continuous Hinges:
1. Provide continuous hinges fabricated from anodized aluminum or stainless steel as scheduled.
  2. Provide bearings at each hinge knuckle for quiet, smooth, self-lubricating operation.
  3. Hinges shall be capable of supporting door weights up to 600 pounds and shall be successfully tested for 1,500,000 cycles.
  4. Install hinges with fasteners supplied by manufacturer. Hole pattern shall be symmetrically patterned.
- D. Flush Bolts:
1. Automatic and manual flush bolts shall have forged bronze faceplates with extruded brass levers and with wrought brass guides and strikes. Doors up to 7'-6" in height shall have 12" steel or brass rods. Manual flush bolts for doors over 7'-6" in height shall be increased by 6" for each additional 6" of door height. Provide dust-proof strikes where scheduled.
- E. Coordinators:
1. Where pairs of doors are equipped with automatic flush bolts, an astragal, or other hardware that requires synchronized closing of the doors, provide a bar-type coordinating device, surface applied to the underside of the stop at the frame head.
  2. Finish of the coordinator to be prime coat to receive the same finish paint as the door frame.
  3. Provide a filler bar of the correct length for the unit to span the entire width of the opening, and appropriate brackets for parallel arm door closers and surface vertical rod exit device strikes. Factory-prep coordinators for vertical rod devices if required.
- F. Mortise Locks:
1. Mortise locks shall be certified as ANSI A156.13, Grade 1 Operational, Grade 1 Security, and shall be manufactured from heavy gauge steel, containing components of steel with a zinc dichromate plating for corrosion resistance. Lock case shall be multi-function and field reversible for handing without opening the case.
  2. Locks are to have a standard 2-3/4" backset with a full 3/4" throw 2-piece stainless steel mechanical anti-friction latch bolt. Deadbolt shall be a full 1" throw, constructed of stainless steel.

City of Worcester  
1407A Main Street Worcester MA 01603

October 5, 2026

3. Lever trim shall be solid brass, bronze, or stainless steel, cast or forged in the design specified, with wrought roses and external lever spring cages. Levers shall be thru-bolted to assure proper alignment and shall have a 2-piece spindle. Lever trim on the secure side of doors serving rooms considered by the authority having jurisdiction to be hazardous shall have a tactile warning.
  - a. Basis of Design, Lever Style: Schlage 17A.
4. Locks meeting this specification: Schlage L9000 series, Sargent 8200 series, Best 40H series, and Corbin Russwin ML2000 Series.

G. Access Control Locks:

1. Lockset and exit device trim listed to UL294.
2. Lockset and exit device trim to meet or exceed A156.25 Grade 1 Operational and Security.
3. Lockset and exit device listed to UL10C, shall be compliant with ICC / ANSI A117.1, NFPA 101, and NFPA 80.
4. Lockset and exit device trim to be manufactured with open architecture characteristics capable of handling new and existing access control software and credential reading technology.
5. Lockset and exit device trim to be modular in design, to have the ability to change credential reader without being removed from door.
6. Provide option for tamper torx screws on inside escutcheon for higher security.
7. Locking escutcheon, security lever trim are to be non-handed, operate independently of non-locking levers for extended life cycles. Handing to be field reversible.
8. Lockset and exit device trim to have the following standard status switches: Lock/Unlock Status (Clutch Position), Request-to-Exit Switch, Request to Enter Switch, Door Position Switch, Deadbolt Position, Interior Cover Tamper Guard.
9. Lockset and exit device trim to communicate battery status and communication status.
10. Exterior lever to be designed with ability to rotate freely while door remains securely locked, preventing damage to internal lock components from vandalism by excessive force.
11. Furnish locks with the appropriate function which will be field configurable without taking the lock off the door.
12. Power supply required 12VDC or 24VDC.
13. Connection cabling to be:
  - a. Data: 24AWG, 4 conductor shielded (Belden 9843, 9841 or equivalent).
  - b. DC Power: 18 AWG, 2 conductor, Belden 8760 or equivalent)
  - c. Other wiring options may be available based on application, environment, and length of cabling required.
14. Should power be lost to device, lockset and exit device trim to have the ability to be field configured to manage access control in one of the three field configurable methods below:
  - a. Fail locked (secured)
  - b. Fail unlocked (unsecured)
  - c. Fail As-Is

City of Worcester  
1407A Main Street Worcester MA 01603

October 5, 2026

15. Lockset and exit device trim to have real-time communication with access control system, such that all events at lockset and exit device trim are communicated real-time to network control software.
16. Lost communication between the device and network, lockset and exit device trim to have ability to manage access control offline in one of four field configurable methods below:
  - a. Fail locked (secured)
  - b. Fail unlocked (unsecured)
  - c. Fail As-Is
17. Fail to Degraded/cache mode utilizing cache memory with field selectable options to either grant access up to the last 1,000 unique previously accepted User IDs, or grant access up to the last 1,000 unique previously accepted Facility/Site codes.
18. Lockset and Exit Trim system interface to be:
  - a. Wiegand or Clock & Data via PIB300 (Panel Interface Board).
  - b. Directly via RS485.
19. Lockset and exit device trim utilized with brightblue software, SMS Premier/Enterprise software, or 3rd Party software to have capability to be remotely locked down real-time without user interface at the device.
20. Lockset and exit device trim utilized with third-party software to have capability to be remotely unlocked real-time without user interface at the device.
21. Lockset and exit device trim to have visual tri-colored LED to indicate operational systems status, system error conditions and low power conditions.
22. Lockset and exit device trim to have audible feedback that can be enabled or disabled.
23. Credential reader capabilities for brightblue Software, SMS Premier/Enterprise Software or 3rd Party Partner integrated software may include and may not be limited to:
  - a. 13.56 MHz Smart card credential - Secure section (Multi-Technology and Smartcard): Schlage, XceedID ISO-X, MIFARE, ISO-X Lite, my-d, DESFire 8-EV1.
  - b. 13.56 MHz Serial number only (Multi-Technology and Smartcard): MIFARE, DESfire, iClass, Inside Pictotag, ST Micro, TI Tagit.
  - c. 125 kHz Proximity card credentials: Schlage, XceedID, HID, GE/CASI ProxLite and AWID.
  - d. Multi-Technology readers that read both 13.56 MHz Smart Cards + 125 kHz Prox cards.
  - e. Dual credential reading capabilities credential card/fob + pin.
  - f. 12 button keypad with backlit buttons.
  - g. Magnetic card triple track reader capable of reading tracks 1, 2 or 3 per configuration in field.
  - h. Full insertion reader capable of reading information along full length of magnetic stripe.
24. The lock and exit device trim will have the ability to utilize multiple manufacturer's key systems in the lever including:
  - a. Full Size cylinders from Schlage, Falcon and Sargent up to 6-pin cylinders
  - b. Full Size Interchangeable Cores from Schlage, Sargent, Corbin Russwin, Medeco, and Yale format by Medeco in up to 6 pin cylinders
  - c. Small Format Interchangeable core up to 7 pin by Schlage, Falcon, BEST, Sargent, Corbin Russwin, Medeco, Yale, and others.

H. Exit Devices:

City of Worcester  
1407A Main Street Worcester MA 01603

October 5, 2026

1. Exit devices shall be touchpad type, fabricated of brass, bronze, stainless steel, or aluminum, plated to the standard architectural finishes to match the balance of the door hardware.
2. All exit devices shall incorporate a fluid damper or other means which reduce noise associated with exit device operation. Touchpad shall extend a minimum of one half of the door width. End-cap will have two-point attachment to door. Touch-pad shall match exit device finish, and shall be stainless steel for US26, US26D, US28, US32, and US32D finishes. Provide compression springs in devices, latches, and outside trims or controls.
3. All devices to incorporate a security dead latching feature.
4. Provide roller strikes for all rim and surface mounted vertical rod devices, ASA strikes for mortise devices, and manufacturer's standard strikes for concealed vertical rod devices.
5. Mechanism case shall sit flush on the face of all flush doors, or spacers shall be furnished to fill gaps behind devices. Where glass trim or molding projects off the face of the door, provide glass bead kits.
6. All non-fire-rated exit devices shall have cylinder dogging.
7. Where lever handles are specified as outside trim for exit devices, provide heavy-duty lever trims with forged or cast escutcheon plates. Provide vandal-resistant levers that will travel to a 90-degree down position when more than 35 pounds of torque are applied, and which can easily be re-set. Lever style will match the lever style of the locksets.
8. Exit devices shall be UL listed panic exit hardware. All exit devices for fire rated openings shall be UL labeled fire exit hardware.
9. Provide electrical options as scheduled.
10. Exit devices meeting this specification: Von Duprin 98 series, Precision Apex series, Sargent 80 series with dead latching.

I. Door Closers:

1. Door closers shall have fully hydraulic, full rack and pinion action with a high strength cast iron cylinder. Cylinder body shall be 1-1/2" in diameter, and double heat-treated pinion shall be 11/16" in diameter.
2. Hydraulic fluid shall be of a type requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F. Fluid shall be fireproof and shall pass the requirements of the UL10C "positive pressure" fire test.
3. Spring power shall be continuously adjustable over the full range of closer sizes, and allow for reduced opening force for the physically handicapped. Hydraulic regulation shall be by tamper-proof, non-critical valves. Closers shall have separate adjustment for latch speed, general speed, and back check.
4. All closers shall have solid forged steel main arms (and forged forearms for parallel arm closers).
5. Closers shall not incorporate a pressure relief valve.

City of Worcester  
1407A Main Street Worcester MA 01603

October 5, 2026

6. All closers shall have metal covers.
7. Closer cylinders, arms, and metal covers shall have a powder coating finish which has been certified to exceed 100 hours salt spray testing by an independent testing laboratory used by BHMA for ANSI certification. For metal components that can't be powder coated, a special rust inhibiting finish (SRI) must be used.
8. Door closers meeting this specification: LCN 4010/4110 series, and Sargent 281Series.
- J. Push Plates: 8" wide x 16" high x 0.050" thick. Where door stile does not allow 8" wide plates, 4" wide plates may be used.
- K. Door Pulls & Push Bars: Solid bar stock, diameter and length as scheduled. Push bars shall be of sufficient length to span from center to center of each stile.
- L. Protection Plates: Provide kick plates as scheduled, with 4 beveled edges. Furnish with machine or wood screws, finished to match plates. Plates shall be 8" high x 2" LWOD on single doors, 1" LWOD on pairs of doors.
- M. Door Stops and Holders:
  1. It shall be the responsibility of the hardware supplier to provide door stops for all doors in accordance with the following requirements:
    - a. Wall stops shall be used wherever possible.
    - b. Where wall stops cannot be used, provide dome type floor stops of the proper height.
    - c. At any opening where a wall or floor stop cannot be used, a heavy-duty overhead stop must be used.
- N. Thresholds and Weatherstrip: Furnish as scheduled and per architectural details. Match finish of other items as closely as possible. Provide only those units where resilient or flexible seal strip is easily replaceable and readily available. Provide thermal-break at thresholds at exterior walls.
- O. Silencers: "Push-in" type silencers for each hollow metal or wood frame, three for each single frame, two for each pair frame. Omit where gasketing is scheduled.
- P. Automatic Operators:
  1. Provide low energy automatic operator units with hydraulic closer complying with ANSI A156.19 where automatic operators are specified..
  2. Provide hydraulic fluid of a type requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F. Fluid shall be fireproof and shall pass the requirements of the UL10C "positive pressure" fire test.
  3. Provide units with conventional door closer opening and closing forces unless the power operator motor is activated. Provide door closer assembly with adjustable spring size, back-check, and opening and closing speed adjustment valves to control door
  4. Provide units with on/off switch for manual operation, motor start up delay, vestibule interface delay, electric lock delay, and door hold open delay.
  5. Provide units with conventional door closer opening and closing forces unless the power operator motor is activated. Provide door closer assembly with adjustable spring size, back-check valve, sweep valve, latch valve to control door.

City of Worcester  
1407A Main Street Worcester MA 01603

October 5, 2026

6. Provide drop plates, brackets, or adapters for arms as required for details.
7. Provide hard-wired actuator switches for operation as specified. Actuators shall be weather-resistant type at exterior applications.
8. Provide key switches, with LED's, recommended and approved by the manufacturer of the automatic operator as required for the function as described in the operation description of the hardware group with the provisions below.
9. Where automatic operators are scheduled, provide complete assemblies of controls, switches, power supplies, relays, and parts/material recommended and approved by the manufacturer of the automatic operator for each individual leaf. Actuators shall control both doors simultaneously at pairs. Exterior and vestibule doors with automatic operators shall be sequenced to allow ingress or egress through both sets of openings as directed by the Designer. Locate the actuators, key switches, and other controls as directed by the Designer.
10. Provide units with vestibule inputs, which allow sequencing operation of two units, and a SPDT relay for interfacing with latching or locking devices.
11. Acceptable manufacturers and/or products: LCN 4600 series, Norton 6900 series, Besam Power Swing.

## 2.3 FINISHES

- A. With the exception of all items listed below, the finish of all hardware shall be US26D - satin chrome or US32D - satin stainless steel. Exceptions are as follows:
1. Door Closers: Aluminum powder coat finish.
  2. Coordinators: Prime painted.
  3. Thresholds: Mill finish aluminum.
  4. Weatherstrip and Sweeps: Clear anodized aluminum.
  5. Silencers: Grey.

## 2.4 KEYING

- A. Provide a new key system from the same manufacturer as the locks conforming to the following requirements:
1. Provide restricted patented removable core cylinders at all keyed devices, removable mullions, and exit device trim. Restricted system shall control the access to the products by requiring a signed letter of authorization and/or authorization form from the Owner or authorized agent of the Owner. Patent shall protect against the unauthorized manufacturing and duplication of the products. Restricted patented cores shall not be operable by non-patented key blanks. Restricted patented cores shall incorporate a mechanism to check for the patented features on the keys. Provide construction cores with construction master keying for use during construction. The hardware supplier, accompanied by the Owner or Owner's security agent, shall install permanent keyed cores upon completion of the project. The temporary construction cores are to be returned to the hardware supplier.
  2. Provide permanent cores and cylinders keyed by the manufacturer or authorized distributor as directed by the Owner. Provide owner with a copy of the bitting list, return receipt requested.

City of Worcester  
1407A Main Street Worcester MA 01603

October 5, 2026

3. The hardware supplier, accompanied by a qualified factory representative for the manufacturer of the cores and cylinders, shall meet with Owner and Designer to review keying requirements and lock functions prior to ordering finish hardware. Submit a keying schedule to Designer for approval.
  4. Provide cores and cylinders, unless noted otherwise, operated by a Great Grand Master Key System to be established for this project. Allow for ten Grand Master Keys under the Great Grand. Do not use the letter "I", "O", or "X" for any of the grand masters. Allow for twenty-four Master Keys under each Grand Master, and sixty-four changes under each master key. All cylinders shall be keyed in alike or different sets as noted by their respective key set number. Do not use the letter "I" or "O" in any of the master key sets.
  5. Provide patented restricted keys as follows:
    - a. Ten grand master keys for each set.
    - b. Ten master keys for each set.
    - c. Three keys per core and/or cylinder.
    - d. Two construction core control keys
    - e. Two permanent core control keys
    - f. Six construction master keys for each type (Contractor is to provide one set of construction keys to Designer)
  6. Visual key control:
    - a. Keys shall be stamped with their respective key set number and stamped "DO NOT DUPLICATE".
    - b. Grand master and master keys shall be stamped with their respective key set letters.
    - c. Do not stamp any keys with the factory key change number.
    - d. Do not stamp any cores with key set on face (front) of Core. Stamp on back or side of cores so not to be visible when core is in cylinder.
  7. Deliver grand master keys, master keys, change keys, and/or key blanks from the factory or authorized distributor directly to the Owner in sealed containers, return receipt requested. Failure to comply with these requirements may be cause to require replacement of all or any part of the keying system that was compromised at no additional cost to the Owner.
  8. Approved products: Schlage Everest T, Best CORMAX, Sargent Signature.
- B. All master keys shall be delivered directly to the Owner by the hardware supplier, who shall obtain an itemized transmittal for delivery of same.
- C. Provide key cabinet suitable for size of project. Locate as acceptable to the Owner.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

City of Worcester  
1407A Main Street Worcester MA 01603

October 5, 2026

### 3.2 PREPARATION

- A. Steel Doors and Frames: Comply with DHI A115 series.
  - 1. Surface-Applied Door Hardware: Drill and tap doors and frames according to SDI 107.
- B. Wood Doors: Comply with DHI A115-W series.
- C. Where on-site modification of doors and frames is required, prepare hardware locations in accordance with the following:
  - 1. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.
  - 2. Wood Doors: Comply with DHI WDHS.5 "Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors."
  - 3. Where doors are in rated assemblies, comply with NFPA 80 for restrictions on on-site door hardware preparation.

### 3.3 INSTALLATION

- A. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
  - 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
  - 2. Custom Steel Doors and Frames: DHI's "Recommended Locations for Builders' Hardware for Custom Steel Doors and Frames."
  - 3. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
- B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work. Do not install surface-mounted items until finishes have been completed on substrates involved.
  - 1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
  - 2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- C. Key Control System: Place keys on markers and hooks in key control system cabinet, as determined by final keying schedule.
- D. Boxed Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings. Verify location with Designer.
  - 1. Configuration: Provide the least number of power supplies required to adequately serve doors with electrified door hardware.
- E. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Section 07 9200 – Joint Sealants.

City of Worcester  
1407A Main Street Worcester MA 01603

October 5, 2026

### 3.4 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
  - 1. Spring Hinges: Adjust to achieve positive latching when door is allowed to close freely from an open position of 30 degrees.
  - 2. Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.
  - 3. Door Closers: Adjust sweep period so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches from the latch, measured to the leading edge of the door.
- B. Six-Month Adjustment: Approximately six months after date of Substantial Completion, Installer shall perform the following:
  - 1. Examine and readjust each item of door hardware as necessary to ensure function of doors, door hardware, and electrified door hardware.
  - 2. Consult with and instruct the Owner's personnel on recommended maintenance procedures.
  - 3. Replace door hardware items that have deteriorated or failed due to faulty design, materials, or installation of door hardware units.

### 3.5 FIELD TESTING FOR FIRE DOOR ASSEMBLIES

- A. Fire Door Assembly Inspection and Testing: Provide functional testing and inspection of fire door assemblies in accordance with NFPA 80-2007/2010. Inspections shall be performed by individuals certified by Intertek as a Fire Door Assembly Inspector, using reporting forms provided by the Door and Hardware Institute (DHI). Alternatively, inspections may be performed by individuals acceptable to the Designer and the Owner, who have knowledge and understanding of the operating components of the applicable door type, and who have experience in preparing written reports of testing and inspection results.
  - 1. Schedule fire door assembly inspection within 90 days of Substantial Completion of the Project.
  - 2. Submit a signed, written final report as specified in Paragraph 1.3: Submittals.
  - 3. Contractor shall correct all deficiencies and schedule a reinspection of fire door assemblies which were noted as deficient on the inspection report.
  - 4. Inspector shall reinspect fire door assemblies after repairs are made.
  - 5. Additional re-inspections which are required due to incomplete repairs will be performed by the inspector at the expense of the Contractor.

### 3.6 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items as necessary to restore proper function and finish.

City of Worcester  
1407A Main Street Worcester MA 01603

October 5, 2026

- C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

### 3.7 DOOR HARDWARE SETS

- A. The door hardware sets represent the design intent and direction of the Owner and Architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the Architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.
- B. The supplier is responsible for handing and sizing all products as listed in the door hardware sets. Quantities listed are for each pair of doors, or for each single door.
- C. Manufacturer's Abbreviations:
1. MK – McKinney
  2. PE – Pemko
  3. SA – Sargent
  4. AD – Adams Rite
  5. NO – Norton
  6. RO – Rockwood
  7. OT – Other

#### Hardware Schedule:

##### Set 1:

One (1) Doors, No.: 110 to have the following:

|   |                                                 |
|---|-------------------------------------------------|
| 3 | Hinges, Full Mortise                            |
| 1 | Lever Lock Set (Office Security Lock)           |
| 1 | Cylinder as required to match building standard |
| 1 | Surface Closer                                  |
| 1 | Overhead Stop                                   |

City of Worcester  
1407A Main Street Worcester MA 01603

October 5, 2026

Set 2:

One (1) Door, No 105 to have the following:

|                                                                                   |                                                                    |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------|
| 2                                                                                 | Continuous Hinges                                                  |
| 2                                                                                 | Lever Lock Set (Classroom Security Lock)                           |
|  | <i>Vertical Rod Exit Device</i> , Lever to Match Building Standard |
|  | <i>Rim Exit Device vertical rod cover</i>                          |
| 2                                                                                 | Surface Closers                                                    |
|  | <del>Flush Bolts Top and Bottom</del>                              |
| 2                                                                                 | Kickplates                                                         |
| 2                                                                                 | Door Stops                                                         |

Set 3:

Four (4) Doors, No's.: 101, 102, 104, & 108 each to have the following:

|                                                                                     |                                                                    |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| 2                                                                                   | Continuous Hinges                                                  |
| 1                                                                                   | Lever Lock Set (Classroom Security Lock)                           |
|  | <i>Vertical Rod Exit Device</i> , Lever to Match Building Standard |
| 1                                                                                   | Rim Exit Device vertical rod cover                                 |
|  | Surface Closer <i>on active leaf</i>                               |
| 2                                                                                   | Flush Bolts Top and Bottom <i>on inactive leaf</i>                 |
|  | <i>Floor strike plate</i>                                          |
| 1                                                                                   | Kickplate                                                          |
| 1                                                                                   | Perimeter Smoke Gasketing                                          |
| 1                                                                                   | Meeting Edge Smoke Gasketing                                       |
| 2                                                                                   | Door Stops                                                         |

Set 4:

City of Worcester  
1407A Main Street Worcester MA 01603

October 5, 2026

Two (2) Doors, No's 106 & 107 each to have the following:

|   |                  |
|---|------------------|
| 1 | Continuous Hinge |
| 1 | Surface Closer   |
| 1 | Push Plate       |
| 1 | Pull Plate       |
| 2 | Kickplate        |
| 1 | Wall Stop        |
| 1 | ADA Door Signage |
| 1 | Silencer         |

City of Worcester  
1407A Main Street Worcester MA 01603

October 5, 2026

Set 5:

Four (4) Doors, No.: 001, 103, 109, & 112 each to have the following:

|                                                                                                   |                                                              |
|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| 3                                                                                                 | Hinges, Full Mortise                                         |
| 1                                                                                                 | Classroom Mortise Lock Set, Lever to Match Building Standard |
| 1                                                                                                 | Cylinder as required to match building standard              |
| 1                                                                                                 | Surface Closer                                               |
| 1                                                                                                 | Wall Stop                                                    |
| 1                                                                                                 | Perimeter Gasketing                                          |
| 1                                                                                                 | Armor Plate                                                  |
| <del>4</del><br> | <del>Surface Closer</del>                                    |

END OF SECTION

## SECTION 09 3000

## TILING

## PART 1 - GENERAL

## 1.1 GENERAL REQUIREMENTS

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

## 1.2 DESCRIPTION OF WORK

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

1. Floor tile.
2. Stone thresholds installed as part of tile installations.
3. Waterproofing and crack-suppression membrane for tile installations.
4. Elastomeric sealants for expansion, contraction, control, and isolation joints in tile surfaces.
5. Surface preparation for tile and accessories.

- B. Alternates: Not Applicable.

- C. Items To Be Installed Only: Install the following items as furnished by the designated Sections:

1. Section 22 0001 Plumbing:
  - a. Access doors in tile.
2. Section 23 0001 HVAC
  - a. Access doors in tile.
3. Section 26 0001 Electrical
  - a. Access doors in tile.

- D. Items To Be Furnished Only: Not Applicable.

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

1. Section 03 3000 – Cast-In-Place Concrete for monolithic slab finishes specified for tile substrates.
2. Section 09 2116 – Gypsum Board Assemblies for cementitious backer units.

## 1.3 DEFINITIONS

- A. Module Size: Actual tile size plus joint width indicated.
- B. Face Size: Actual tile size, excluding spacer lugs.

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

#### 1.4 PERFORMANCE REQUIREMENTS

- A. For tile installed on walking surfaces, provide products with the following values as determined by the test protocol provided in ANSI A137.1, Section 9.6.
  - 1. Dynamic Coefficient of Friction: Not less than 0.42.

#### 1.5 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show locations of each type of tile and tile pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.
- C. Samples for Verification:
  - 1. Assembled samples with grouted joints for each type and composition of tile and for each color and finish required, at least 12 inches square and mounted on rigid panel. Use grout of type and in color or colors approved for completed work.
  - 2. Full-size units of each type of trim and accessory for each color and finish required.
  - 3. Stone thresholds in 6-inch lengths.
  - 4. Metal edge strips in 6-inch lengths.
- D. Qualification Data: For Installer.
- E. Material Test Reports: For each tile-setting and -grouting product.

#### 1.6 QUALITY ASSURANCE

- A. Source Limitations for Tile: Obtain all tile of same type and color or finish from one source or producer.
  - 1. Obtain tile from same production run and of consistent quality in appearance and physical properties for each contiguous area.
- B. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from a single manufacturer and each aggregate from one source or producer.
- C. Source Limitations for Other Products: Obtain each of the following products specified in this Section through one source from a single manufacturer for each product:
  - 1. Stone thresholds.
  - 2. Waterproofing.
  - 3. Joint sealants.
  - 4. Cementitious backer units.
  - 5. Metal edge strips.
- D. Mockups: Install mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
  - 1. To set quality standards for installation, install mockup of floor and wall area.

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

2. To set quality standards for sanding and application of field finishes, prepare finish mockup of floor area as shown on Drawings.
  3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- E. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirement in ANSI A137.1 for labeling sealed tile packages.
- B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- D. Store liquid additives in unopened containers and protected from freezing.

#### 1.8 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

#### 1.9 EXTRA MATERIALS

- A. Furnish extra materials that match and are from same production runs as products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  1. Tile and Trim Units: Furnish quantity of full-size units equal to 3 percent of amount installed for each type, composition, color, pattern, and size indicated.
  2. Grout: Furnish quantity of grout equal to 3 percent of amount installed for each type, composition, and color indicated.

### PART 2 - PRODUCTS

#### 2.1 TILE SCHEDULE

- A. Quarry Floor Tile QT: Interior floor installation on concrete; thin-set mortar; TCA F113 on-ground and TCA F113A above-ground and ANSI A108.5.
  1. Tile Type: Ceramic tile shall be Unglazed Quarry Tile. The body composition shall be of the finest shales and clays producing a uniform dense body with slip-resisting texture.
  2. Color: Light Grey with sealant application.
  3. Thin-Set Mortar: Latex-portland cement mortar.
  4. Grout: Polymer-modified unsanded grout.
  5. Joint Width: 1/8 inch.

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

## 2.2 PRODUCTS, GENERAL

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. American Olean Tile Co.
  - 2. Daltile Corporation.
  - 3. Summitville Tiles.
  - 4. Or equal.
- B. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1, "Specifications for Ceramic Tile," for types, compositions, and other characteristics indicated.
  - 1. Provide tile complying with Standard grade requirements, unless otherwise indicated.
  - 2. For facial dimensions of tile, comply with requirements relating to tile sizes specified in Part 1 "Definitions" Article.
  - 3. Large Format Tiles are defined as more than 15 inches in any nominal dimension.
- C. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI standards referenced in "Setting and Grouting Materials" Article.
- D. Factory Blending: For tile exhibiting color variations within ranges selected during Sample submittals, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.
- E. Mounting: For factory-mounted tile, provide back- or edge-mounted tile assemblies as standard with manufacturer, unless otherwise indicated.
- F. Tile Trim Units: Matching characteristics of adjoining flat tile and coordinated with sizes and coursing of adjoining flat tile where applicable. Provide shapes selected from manufacturer's standard shapes.
- G. Metal Edge Strips: Angle or L-shape, height to match tile and setting-bed thickness, metallic or combination of metal and PVC or neoprene base, designed specifically for flooring applications; extruded aluminum exposed-edge material, with clear anodized satin finish.
  - 1. Available Manufacturer: Schluter Systems, or equal.
- H. Marble Thresholds: Uniform, fine- to medium-grained white stone with gray veining, ASTM C 503 with a minimum abrasion resistance of 10 per ASTM C 1353 or ASTM C 241 and with honed finish. Fabricate to sizes and profiles indicated or required to provide transition between adjacent floor finishes.
  - 1. Bevel edges at 1:2 slope, aligning lower edge of bevel with adjacent floor finish. Limit height of bevel to 1/2 inch or less, and finish bevel to match face of threshold.
- I. Fabric-Reinforced, Fluid-Applied Waterproofing and Crack Suppression Membrane: System consisting of liquid-latex rubber, with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24), and fabric reinforcement.
  - 1. ARDEX Engineered Cements; 8 + 9 Waterproofing Compound.
  - 2. Custom Building Products; 9240 Waterproofing and Anti-Fracture Membrane.

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

3. LATICRETE International Inc.; Laticrete 9235 Waterproof Membrane.
  4. MAPEI Corporation; PRP M19.
  5. Summitville Tiles, Inc.; S-9000.
  6. Or equal.
- J. Acoustic Underlayment and Crack Suppression Adhesive: Provide a sound abatement and crack suppression adhesive complying with ANSI A118.12, extra heavy rating and a minimum  $\Delta$ IIC of 15:
1. Service Rating per ASTM C 627: Extra Heavy
  2. Delta Impact Insulation Class per  $\Delta$ IIC; ASTM E 2179: 15.
  3. Point Load per ANSI A118.12 5.2: >1,000 psi.
  4. Shear Bond Strength (ANSI A118.12): 100psi.
- K. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.
- L. Portland Cement Mortar (Thickset) Installation Materials: ANSI A108.02.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Ardex Engineered Cements.
    - b. Bostik, Inc.
    - c. Laticrete International, Inc.
    - d. MAPEI Corporation.
    - e. Summitville Tiles, Inc.
    - f. TEC; a subsidiary of H. B. Fuller Company.
    - g. Or equal.
  2. Cleavage Membrane: Asphalt felt, ASTM D 226, Type I (No. 15); or polyethylene sheeting, ASTM D 4397, 4.0 mils thick.
- M. Latex-Portland Cement Mortar (Thin Set): ANSI A118.4.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Ardex Engineered Cements.
    - b. Bostik, Inc.
    - c. Custom Building Products.
    - d. Laticrete International, Inc.
    - e. MAPEI Corporation.
    - f. Summitville Tiles, Inc.
    - g. TEC; a subsidiary of H. B. Fuller Company.
    - h. Or equal.
  2. Provide prepackaged, dry-mortar mix containing dry, redispersible, vinyl acetate or acrylic additive to which only water must be added at Project site.
  3. For wall applications, provide mortar that complies with requirements for nonsagging mortar in addition to the other requirements in ANSI A118.4.

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

- N. Polymer-Modified Tile Grout: ANSI A118.7.
  - 1. Type: Acrylic resin or styrene-butadiene rubber in liquid-latex form for addition to prepackaged dry-grout mix.
    - a. Unsanded grout mixture for joints 1/8 inch (3.2 mm) and narrower.
    - b. Sanded grout mixture for joints 1/8 inch (3.2 mm) and wider.
- O. Joint Grout, Epoxy Type: Provide chemical resistant, water cleanable, tile grouting epoxy, conforming to ANSI A118.3, as follows:
  - 1. Colors: A selection of at least fourteen standard colors plus black, white, and natural must be available for Designer's selection.
- P. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.
- Q. Grout Sealer: Manufacturer's standard silicone product for sealing grout joints that does not change color or appearance of grout.

## 2.3 ELASTOMERIC SEALANTS

- A. General: Provide manufacturer's standard chemically curing, elastomeric sealants of base polymer and characteristics indicate. Comply with applicable requirements in Section 07 9200 – Joint Sealants.
  - 1. Use sealants that have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- B. Colors: Provide colors of exposed sealants to match colors of grout in tile adjoining sealed joints, unless otherwise indicated.
- C. One-Part, Mildew-Resistant Silicone Sealant: ASTM C 920; Type S; Grade NS; Class 25; Uses NT, G, A, and, as applicable to nonporous joint substrates indicated, O; formulated with fungicide, intended for sealing interior ceramic tile joints and other nonporous substrates that are subject to in-service exposures of high humidity and extreme temperatures.
  - 1. Available Products:
    - a. Custom Building Products; 100% Commercial Silicone Caulk.
    - b. Dow Corning Corporation; Dow Corning 786.
    - c. GE Silicones; Sanitary 1700.
    - d. Pecora Corporation; Pecora 898 Sanitary Silicone Sealant.
    - e. Tremco, Inc.; Tremsil 600 White.
    - f. Or equal.
- D. Multipart, Pourable Urethane Sealant for Use T: ASTM C 920; Type M; Grade P; Class 25; Uses T, M, A, and, as applicable to joint substrates indicated, O.
  - 1. Available Products:
    - a. Bostik; Chem-Calk 550.
    - b. Pecora Corporation; NR-200 Urexpan.
    - c. Tremco, Inc.; Vulkem 245.
    - d. Tremco, Inc.; THC-900.
    - e. Or equal.

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

## 2.4 MIXING MORTARS AND GROUT

- A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.
- B. Add materials, water, and additives in accurate proportions.
- C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.
  - 1. Verify that substrates for setting tile are firm; dry; clean; free of oil, waxy films, and curing compounds; and within flatness tolerances required by referenced ANSI A108 Series of tile installation standards for installations indicated.
  - 2. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed before installing tile.
  - 3. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Designer.
  - 4. Verify flatness of floor is within limits specified in Section 03 3000 – Cast-In-Place Concrete and is suitable for type of tile to be installed.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Remove coatings, including curing compounds and other substances that contain soap, wax, oil, or silicone, that are incompatible with tile-setting materials.



- B. Remove existing mortar bed down to existing stable substrate as required by manufacturer.*

- C. Provide concrete substrates for tile floors that comply with flatness tolerances specified in referenced ANSI A108 Series of tile installation standards.
  - 1. Fill cracks, holes, and depressions with trowelable leveling and patching compound according to tile-setting material manufacturer's written instructions. Use product specifically recommended by tile-setting material manufacturer.
  - 2. Remove protrusions, bumps, and ridges by sanding or grinding.
- D. Blending: For tile exhibiting color variations within ranges selected during Sample submittals, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

### 3.3 INSTALLATION, GENERAL

- A. ANSI Tile Installation Standards: Comply with parts of ANSI A108 Series "Specifications for Installation of Ceramic Tile" that apply to types of setting and grouting materials and to methods indicated in ceramic tile installation schedules.
- B. TCNA Installation Guidelines: TCNA's "Handbook for Ceramic, Glass, and Stone Tile Installation." Comply with TCA installation methods indicated in ceramic tile installation schedules.
- C. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions, unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
- D. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
- E. Jointing Pattern: Lay tile in grid pattern, unless otherwise indicated. Align joints when adjoining tiles on floor, base, walls, and trim are same size. Lay out tile work and center tile fields in both directions in each space or on each wall area. Adjust to minimize tile cutting. Provide uniform joint widths, unless otherwise indicated.
  - 1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so joints between sheets are not apparent in finished work.
- F. Lay out tile wainscots to next full tile beyond dimensions indicated.
- G. Expansion Joints: Locate expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.
  - 1. Locate joints in tile surfaces directly above joints in concrete substrates.
  - 2. Prepare joints and apply sealants to comply with requirements in Section 079200 - JOINT SEALANTS.
- H. Grout tile to comply with requirements of the following tile installation standards:
  - 1. For ceramic tile grouts (sand-portland cement; dry-set, commercial portland cement; and latex-portland cement grouts), comply with ANSI A108.10.
  - 2. For chemical-resistant epoxy grouts, comply with ANSI A108.6.
- I. At showers, tubs, and where indicated, install cementitious backer units and treat joints to comply with ANSI A108.11 and manufacturer's written instructions for type of application indicated.

### 3.4 WATERPROOFING AND CRACK-SUPPRESSION MEMBRANE INSTALLATION

- A. Install waterproofing to comply with ANSI A108.13 and waterproofing manufacturer's written instructions to produce waterproof membrane of uniform thickness bonded securely to substrate.
- B. Install crack-suppression membrane to comply with manufacturer's written instructions to produce membrane of uniform thickness bonded securely to substrate.

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

- C. Do not install tile over waterproofing until waterproofing has cured and been tested to determine that it is watertight.

### 3.5 FLOOR TILE INSTALLATION

- A. General: Install tile to comply with requirements in the Floor Tile Installation Schedule, including those referencing TCA installation methods and ANSI A108 Series of tile installation standards.
  - 1. For installations indicated below, follow procedures in ANSI A108 Series tile installation standards for providing 95 percent mortar coverage.
- B. Stone Thresholds: Install stone thresholds at locations indicated; set in same type of setting bed as abutting field tile, unless otherwise indicated.
  - 1. Set thresholds in latex-portland cement mortar for locations where mortar bed would otherwise be exposed above adjacent nontile floor finish.
- C. Metal Edge Strips: Install at locations indicated or where exposed edge of tile flooring meets carpet, wood, or other flooring that finishes flush with top of tile.

### 3.6 WALL TILE INSTALLATION

- A. Install types of tile designated for wall installations to comply with requirements in the Wall Tile Installation Schedule, including those referencing TCA installation methods and ANSI setting-bed standards. Do not install with cut edges exposed.

### 3.7 CLEANING AND PROTECTING

- A. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
  - 1. Remove grout residue from tile as soon as possible.
  - 2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions, but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.
  - 3. Remove temporary protective coating by method recommended by coating manufacturer that is acceptable to tile and grout manufacturer. Trap and remove coating to prevent it from clogging drains.
- B. When recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear.
- C. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed. After seven days, cover areas subject to construction traffic with heavy cardboard.
- D. Before final inspection, remove protective coverings and rinse neutral cleaner from tile surfaces.

END OF SECTION

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

SECTION 09 6723  
RESINOUS FLOORING

## PART 1 - GENERAL

## 1.1 GENERAL REQUIREMENTS

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

## 1.2 DESCRIPTION OF WORK

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

1. Prepare surfaces to receive resinous flooring and integral base onto walls.
2. Fluid-Applied resinous waterproof flooring, and resinous waterproof base extended 6" above floor at floor-to-wall intersections.
3. Moisture Mitigating Primer.
4. Osmotic and Hydrostatic Pressure floor testing.

- B. Alternates: Not Applicable.

- C. Items To Be Installed Only: Not Applicable.

- D. Items To Be Furnished Only: Not Applicable.

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

1. Section 03 3000 – Cast-In-Place Concrete for concrete floor work.
2. Section 03 3930 – Gravity Feed Crack Repair for repairs to floor cracks.
3. Section 07 9200 – Joint Sealants for sealing joints between fluid-applied flooring and adjacent construction and fixtures.



4. *Section 09 6110 – Vapor Mitigation at slabs for vapor mitigation where required prior to finish floor installation.*

5. Section 22 0001 – Plumbing (Filed Sub-Bid required) for recessed plumbing floor drains and troughs.

## 1.3 REFERENCE STANDARDS

- A. ASTM D570 - Standard Test Method for Water Absorption of Plastics; 1998 (Reapproved 2010).
- B. ASTM D638 - Standard Test Method for Tensile Properties of Plastics; 2010.
- C. ASTM D695 - Standard Test Method for Compressive Properties of Rigid Plastics; 2010.
- D. ASTM D905 - Standard Test Method for Strength Properties of Adhesive Bonds in Shear by Compression Loading; 2008 (Reapproved 2013).

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

- E. ASTM D4060 - Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser; 2010.
- F. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials; 2013.
- G. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2011.
- H. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride; 2011.

#### 1.4 SUBMITTALS

- A. See Section 01 3300 – Submittal Procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns and colors available.
- C. Samples: Submit two samples, 12 x 12 inch in size illustrating color and pattern for each floor material for each color specified.
- D. Manufacturer's Installation Instructions: Indicate special procedures.
- E. Maintenance Data: Include maintenance procedures, recommended maintenance materials, procedures for stain removal, repairing surface, and suggested schedule for cleaning.
- F. Maintenance Materials: Furnish the following for User Agency use in maintenance of project.
  - 1. See Section 01 6000 – Product Requirements, for additional provisions.
  - 2. Extra Flooring Material: 2 gallons of each color installed.

#### 1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum ten years documented experience.
- B. Applicator Qualifications: Company specializing in performing work of this section with minimum 5 years' experience.
- C. Supervisor Qualifications: Trained by product manufacturer, under direct full time supervision of manufacturer's own foreman.
- D. Pre-Installation Conference
  - 1. General Contractor shall arrange a meeting not less than thirty days prior to starting work.
  - 2. Attendance
    - a. General Contractor
    - b. Architect/Owner's Representative
    - c. Manufacturer/Installer's Representative

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Material shall be stored in a dry, enclosed area protected from exposure to moisture. Temperature of storage area shall be maintained between 60 and 85°F/16 and 30°C.
- B. Store materials for three days prior to installation in area of installation to achieve temperature stability.
- C. Material shall be delivered to job site and checked by flooring contractor for completeness and shipping damage prior to job start.
- D. All materials used shall be factory pre-weighed and pre-packaged in shingle, easy to manage batches to eliminate on site mixing errors. No on site weighing or volumetric measurements shall be permitted.

#### 1.7 FIELD CONDITIONS

- A. Store materials in area of installation for minimum period of 24 hours prior to installation.
- B. Maintain ambient temperature required by manufacturer 72 hours prior to, during, and 24 hours after installation of materials.
- C. Concrete substrate shall be properly cured. A vapor barrier must be present for concrete subfloors on or below grade. Otherwise, an osmotic pressure resistant grout may be required based on ASTM F 2170 test results higher than 85% RH prior to the installation of resinous flooring.
- D. Utilities, including electric, water, heat (air temperature between 60 and 85°F/16 and 30°C) and finished lighting to be supplied by General Contractor.
- E. Job area to be free of other trades during, and for a period of 24 hours, after floor installation.
- F. Protection of finished floor from damage by subsequent trades shall be the responsibility of the General Contractor.

#### 1.8 WARRANTY

- A. Manufacturer shall furnish a single, written warranty covering both material and workmanship for a period of one (1) full year from date of installation.



### PART 2 - PRODUCTS

*2.1 Available Products: Subject to compliance with requirements, products that may be incorporated into the work include the following:*

- A. Sherwin-Williams HPF Poly-Crete SLB and aliphatic resinous topcoat seamless flooring system: (Basis of Design)*
- B. Stonhard Stonclad UR with Stonkote HT4 Topcoat.*
- C. Dex-O-Tex Cheminart K with Posi-Tred-O Topcoat.*
- D. Or equal*

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

## 2.2 Flooring:

- A. *Sherwin-Williams HPF, Poly-Crete SLB and aliphatic resinous topcoat seamless flooring system*
1. *System Materials:*
    - a. *Topping: Sherwin-Williams HPF, Poly-Crete SL Resin, SL Hardener and SL Aggregate*
    - b. *Broadcast aggregate: Sherwin-Williams HPF Flintshot quartz aggregate*
    - c. *Topcoat: Sherwin-Williams HPF, pigmented Accelera EXT resin and Hardener*
  2. *Patch Materials*
    - a. *Shallow Fill and Patching: Sherwin-Williams HPF. Poly-Crete MD (up to 1/4" inch)*
    - b. *Deep Fill and Sloping Material (Over 1/4 inch): Sherwin-Williams HPF Poly-Crete WR or Cemlack*

## 2.3 Physical Properties

| A. Topping   |                                                        | Poly-Crete SL                      |
|--------------|--------------------------------------------------------|------------------------------------|
| 1.           | Percent Reactive                                       | 100%                               |
| 2.           | VOC                                                    | 0 g/L                              |
| 3.           | Bond Strength to Concrete ASTM D 4541                  | 400 psi, substrates fails          |
| 4.           | Compressive Strength, ASTM C 579                       | 9,000 psi                          |
| 5.           | Tensile Strength, ASTM D 638                           | 2,175 psi                          |
| 6.           | Flexural Strength, ASTM D 790                          | 5,076 psi                          |
| 7.           | Impact Resistance @ 125 mils, MIL D-3134, 160 inch lbs | No visible damage or deterioration |
| B Topcoat(s) |                                                        | ACCELERA                           |
| 1.           | Percent Solids                                         | 100 %                              |
| 2.           | VOC                                                    | 0 g/L                              |
| 3.           | Bond Strength to Concrete ASTM D 4541                  | 400 psi, substrates fails          |
| 4.           | Hardness, Shore D ASTM D2240                           | 70                                 |
| 5.           | Compressive Strength, ASTM C579                        | 18,000 psi                         |
| 6.           | Tensile Strength, ASTM D638                            | 2,600 psi                          |
| 7.           | Abrasion Resistance, ASTM D4060                        | 27 mg loss                         |
|              | C-17 Wheel, 1,000 gm load, 1,000 cycles                |                                    |
| 8.           | Potlife @ 70 F                                         | 7 – 10 minutes                     |
| 9.           | Gloss (ASTM D523) 60°                                  | 90                                 |
| 10.          | Coefficient of Friction (ASTM D2047)                   | 0.8                                |

- A. Color: As selected by the Designer from the approved manufacturer's complete selection of standard colors.
- B. Slip resistance: Texture of finished flooring system to be Texture 2/3. Provide Texture as part of submittal.

## 2.4 JOINT SEALANT MATERIALS

- A. Provide joint sealants as produced by the approved resinous flooring system manufacturer for the type of service and joint condition indicated.

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Verify that sub-floor surfaces are smooth and flat or pitched to floor drains at shower areas and within the tolerances specified for that type of work and are ready to receive flooring.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive flooring.
- C. Verify that sub-floor surfaces are dust-free and free of substances that could impair bonding of materials to sub-floor surfaces.
- D. Verify that concrete sub-floor surfaces are ready for flooring installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within limits recommended by flooring materials manufacturer.

#### 3.2 PREPARATION

- A. Concrete Substrate: preparation shall be by mechanical means and include use of a sacrifice or shot blast machine for removal of bond inhibiting materials such as curing compounds or paint laitance.
-  B. Remove sub-floor ridges and bumps. Fill low spots, cracks, joints, holes, and other defects with sub-floor filler *per manufacturers recommendations*.
- C. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Grind irregularities above the surface level. Prohibit traffic until filler is cured.
- D. Vacuum clean substrate.
- E. Apply primer to surfaces required by flooring manufacturer.
- F. Provide chases in concrete below doors for smooth and level transitions to adjacent flooring systems.



- G. At all perimeter locations not adjacent to wall or curb, a minimum ¼ inch key cut shall be made to properly seat the system to provide smooth transition. The detail cut shall also apply to drain perimeters and expansion joint edges.*

#### 3.3 INSTALLATION – FLOORING

- A. General: Apply each component of resinous flooring system in compliance with manufacturer's directions to produce a uniform monolithic wearing surface of thickness indicated, uninterrupted except at divider strips, sawn joints or other types of joints (if any), indicated or required.
- B. Primer: Mix and apply primer over properly prepared substrate with strict adherence to manufacturer's installation procedures and coverage rates. Coordinate timing of primer application with application of troweled mortar to ensure optimum adhesion between resinous flooring materials and substrate.
- C. Troweled Mortar: Mix mortar material according to manufacturer's recommended procedures. Uniformly spread mortar over substrate using manufacturer's specially designed screed box adjusted to manufacturer's recommended height. Hand and power trowel mixed material over freshly primed substrate using steel finishing trowels and specially designed power trowel blades where applicable. Form integral cove base with a one (1) inch radius to specified height.

City of Worcester  
1407A Main Street Worcester MA 01603

October 05, 2026

- D. Primer: Mix and apply primer over properly cured and prepared mortar with strict adherence to manufacturer's installation procedures and coverage rates. Broadcast silica to refusal into wet primer.
- E. Top Coat: Vacuum the cured floor surface to remove un-bonded silica. Mix and apply coating with strict adherence to manufacturer's installation procedures and coverage rates.
- F. Finish to smooth level surface.

### 3.4 FIELD QUALITY CONTROL

- A. The right is reserved to invoke the following material testing procedure at any time, and any number of times during period of flooring application.
- B. The Owner will engage service of an independent testing laboratory to sample materials being used on the job site. Samples of material will be taken, identified and sealed, and certified in presence of Contractor.
- C. Testing laboratory will perform tests for any of characteristics specified, using applicable testing procedures referenced herein, or if none referenced, in manufacturer's product data.
- D. If test results show materials being used do not comply with specified requirements, Contractor may be directed by Owner to stop work; remove non-complying materials; pay for testing; reapply flooring materials to properly prepared surfaces which had previously been coated with unacceptable materials.

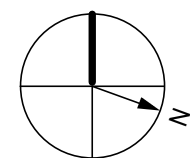
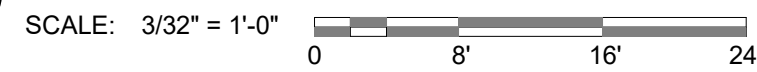
### 3.5 CURING, PROTECTION AND CLEANING

- A. Cure resinous flooring materials in compliance with manufacturer's directions, taking care to prevent contamination during stages of application and prior to completion of curing process. Close area of application for a minimum of 48 hours.
- B. Protect resinous flooring materials from damage and wear during construction operation. Where temporary covering is required for this purpose, comply with manufacturer's recommendations for protective materials and method of application. General Contractor is responsible for protection and cleaning of surfaces after final coats.
- C. Cleaning: Remove temporary covering and clean resinous flooring just prior to final inspection. Use cleaning materials and procedures recommended by resinous flooring manufacturer.
- D. Barricade area to protect flooring until cured.

END OF SECTION

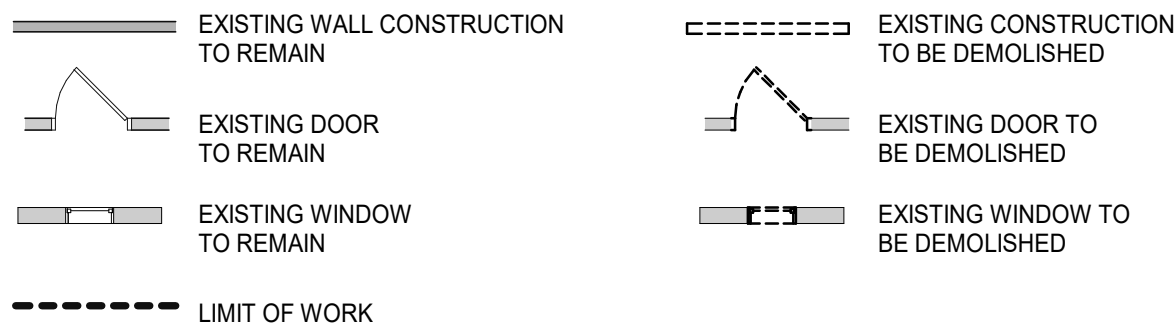
PLOTTED ON: 10/5/2026 7:32:24 AM

SCALE:  $\frac{3}{32}'' = 1'-0''$



| NUMBER   | DESCRIPTION                                              |
|----------|----------------------------------------------------------|
| 02.08.17 | REMOVE DOOR LEAVES - SEE DOOR SCHEDULE FOR NEW DOOR TYPE |
| 02.09.16 | REMOVE EXISTING FLOOR AS NEEDED TO PERFORM WORK.         |

- ## DEMOLITION FLOOR PLAN LEGEND



**ADA RENOVATIONS**

**NEW CITIZEN'S CENTER**

**1407A MAIN STREET  
WORCESTER, MA 01603**

[illegible]

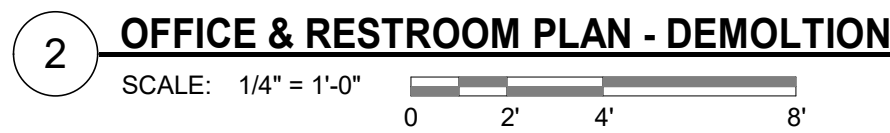
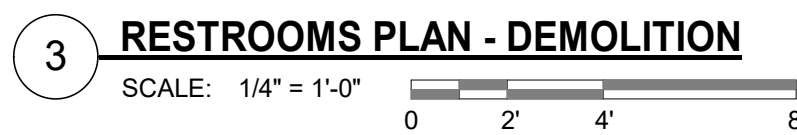
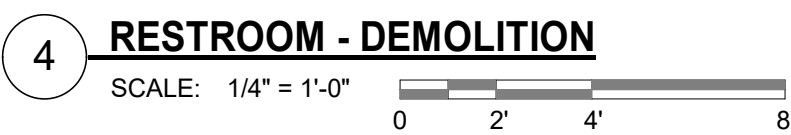
|                     |
|---------------------|
| PROJECT NO: 2430.05 |
| DATE: 08/19/2026    |
| SCALE: AS NOTED     |
| DRAWN BY: JG / AR   |
| CHECKED BY: TP / MB |

### FIRST FLOOR PLAN - DEMOLITION

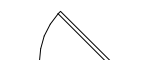
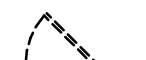
# AD-110

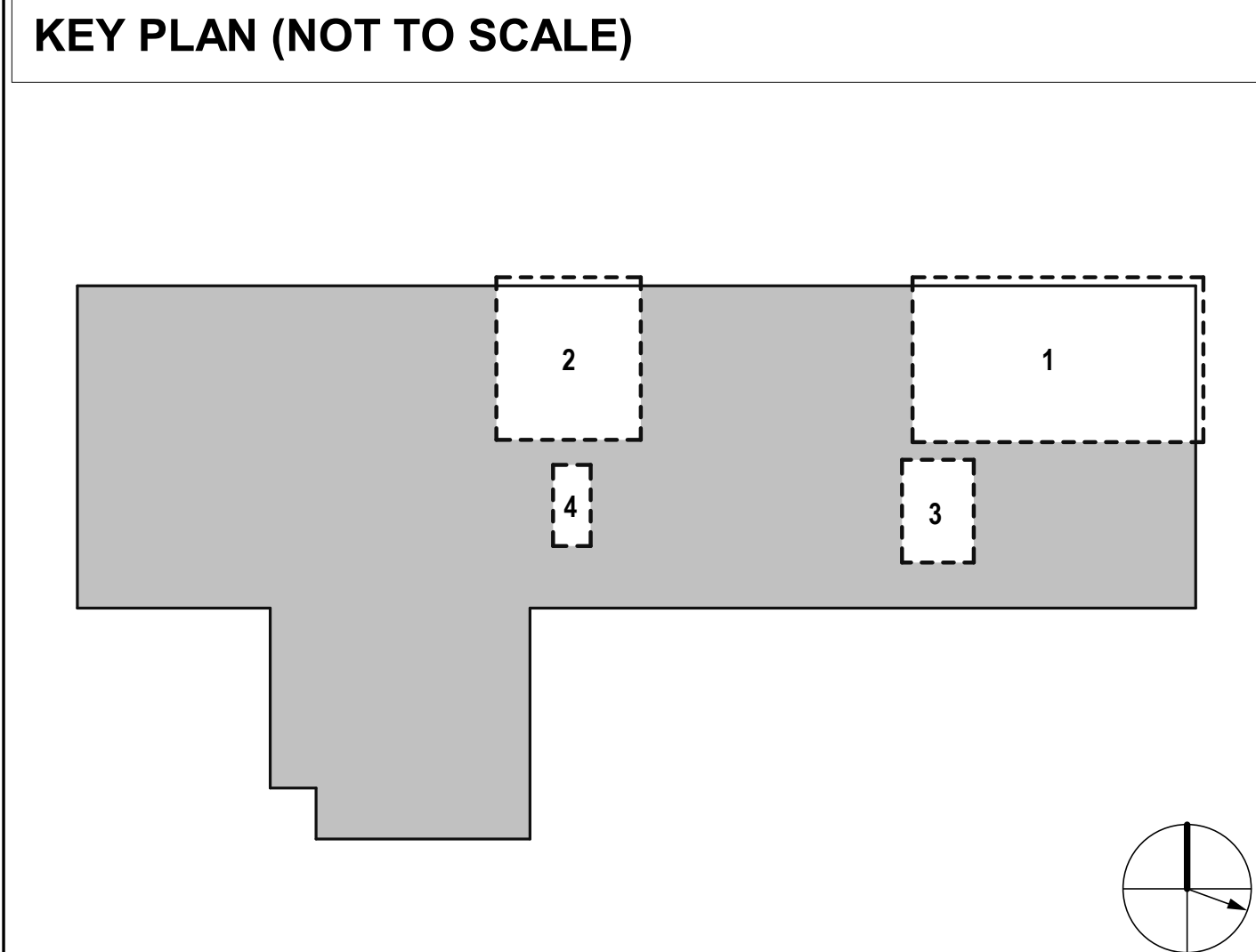
© Copyright 2024 Habeeb & Associates Architects

PLOTTED ON: 10/5/2026 7:32:25 AM



## DEMOLITION FLOOR PLAN LEGEND

|                                                                                     |                                      |                                                                                     |                                          |
|-------------------------------------------------------------------------------------|--------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------|
|  | EXISTING WALL CONSTRUCTION TO REMAIN |  | EXISTING CONSTRUCTION TO BE DEMOLISHED   |
|  | EXISTING DOOR TO REMAIN              |  | EXISTING DOOR AND FRAME TO BE DEMOLISHED |
|  | EXISTING WINDOW TO REMAIN            |  | EXISTING WINDOW TO BE DEMOLISHED         |
|  | LIMIT OF WORK                        |                                                                                     |                                          |
|  | EXISTING TO REMAIN                   |                                                                                     |                                          |



ADA RENOVATIONS

**NEW CITIZEN'S CENTER**

1407A MAIN STREET  
WORCESTER, MA 01603

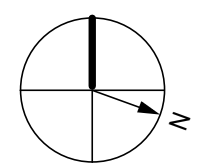
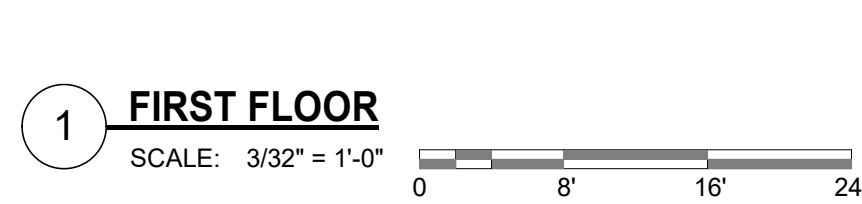
[illegible]

|                     |
|---------------------|
| PROJECT NO: 2430.05 |
| DATE: 08/19/2026    |
| SCALE: AS NOTED     |
| DRAWN BY: JG / AR   |
| CHECKED BY: TP / MB |

### ENLARGED FIRST FLOOR PLANS - DEMOLITION

# AD-410

PLOTTED ON: 10/5/2026 7:32:26 AM



# FLOOR PLAN GENERAL NOTES

---

1. REFER TO DWG. G-002 FOR LIST OF TYPICAL ABBREVIATIONS, ARCHITECTURAL GRAPHIC SYMBOLS, AND GENERAL NOTES.
2. REFER TO DWG G-010 FOR BUILDING CODE SUMMARY AND FIRE SAFETY PLANS FOR LOCATIONS OF FIRE-RESISTANCE RATED PARTITIONS.
3. REFER TO DWG G-020 FOR PARTITION TYPES FIRE-STOP SYSTEM DETAILS OF FIRE-RESISTANCE RATED PARTITIONS.
4. ALL DIMENSIONS ARE TO FACE OR CENTERLINE OF STRUCTURE (FOUNDATION, COLUMN, ETC) UNLESS OTHERWISE NOTED (U.O.N). DIMENSIONS TO INTERIOR PARTITIONS ARE TO FACE OF PARTITION. OTHER DIMENSIONS NOTED AS CLEARANCE (C.L.C.) FIN. SHALL BE DIMED TO BE FINISHED FACE.
5. THE CONTRACTOR SHALL PROVIDE AND INSTALL STIFFENERS, BRACING, BLOCKING, BACK-UP PLATES AND SUPPORTING BRACKETS NOT DRAWN OR SPECIFIED BUT REQUIRED FOR PROPER INSTALLATION OF ALL WALL-MOUNTED CASEWORK, TOILET ACCESSORIES AND EQUIPMENT.
6. PROVIDE MINIMUM 4-INCH CLEARANCE FROM FACE OF DOOR JAMB TO FACE OF ADJACENT WALL, UNLESS OTHERWISE NOTED.

**H&A**  
150 LONGWATER DR  
NORWELL, MA 02061  
43 HARVARD ST  
WORCESTER, MA 01609  
781.871.8804  
habeeb@arch.com

**ADA RENOVATIONS**

**NEW CITIZEN'S CENTER**

**1407A MAIN STREET  
WORCESTER, MA 01603**

[illegible]

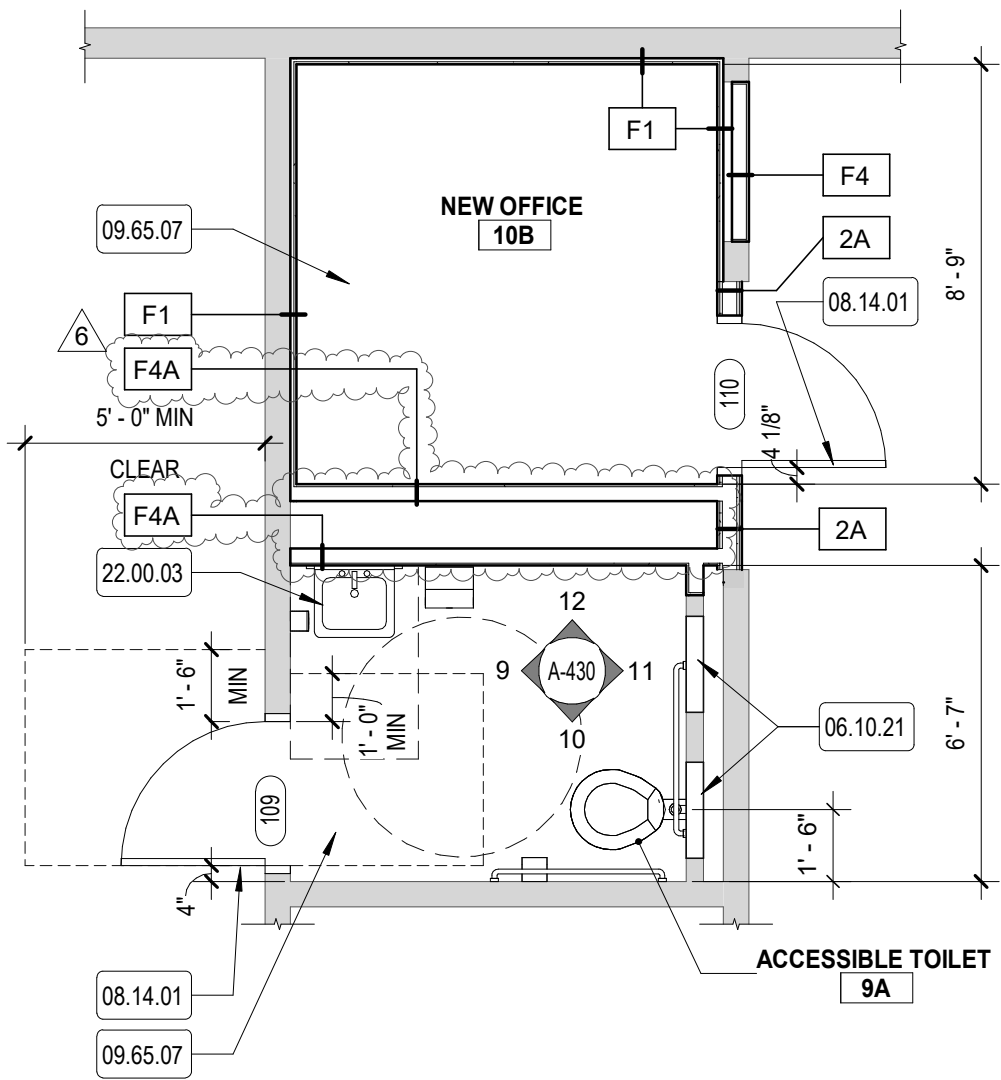
|                     |
|---------------------|
| PROJECT NO: 2430.05 |
| DATE: 08/19/2026    |
| SCALE: AS NOTED     |
| DRAWN BY: JG / AR   |
| CHECKED BY: TP / MB |

### FIRST FLOOR PLAN

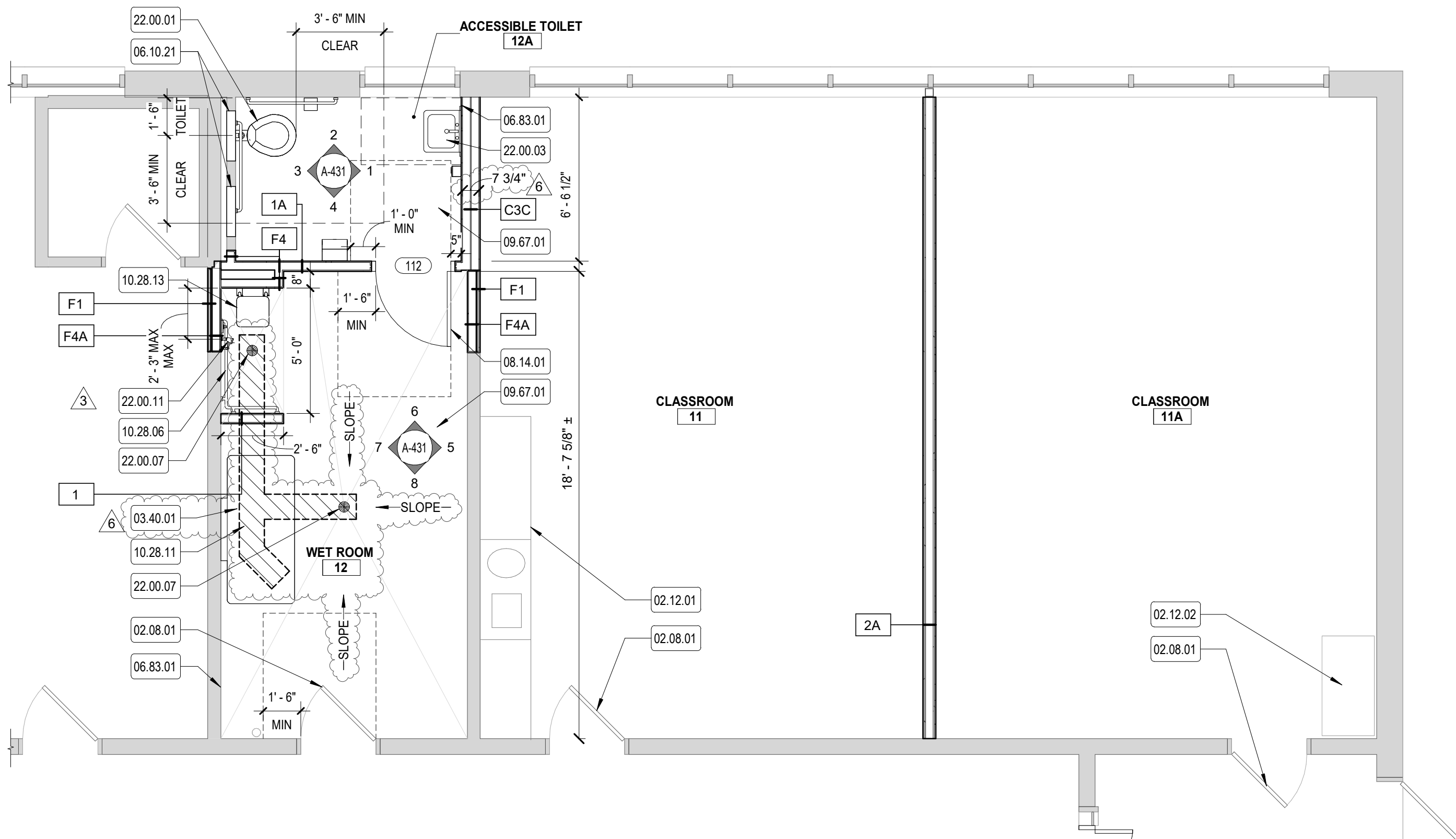
# A-110

This Border is intended for a 22" x 34" sheet. If printed sheet size differs, refer to graphic bar scales only.

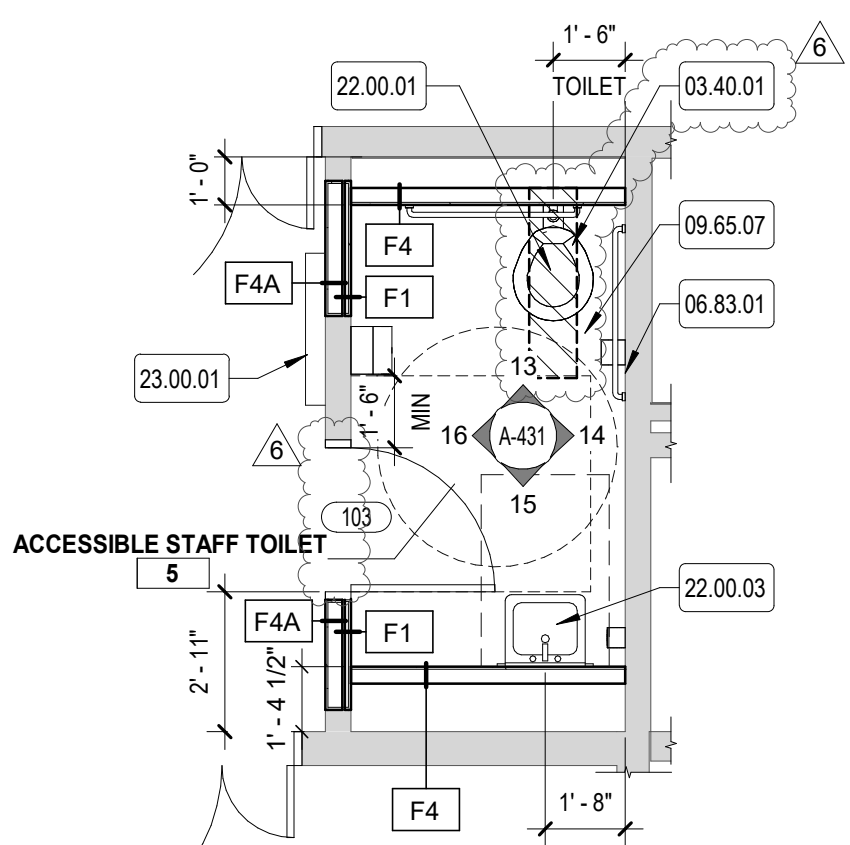
PLOTTED ON: 10/5/2026 7:32:27 AM



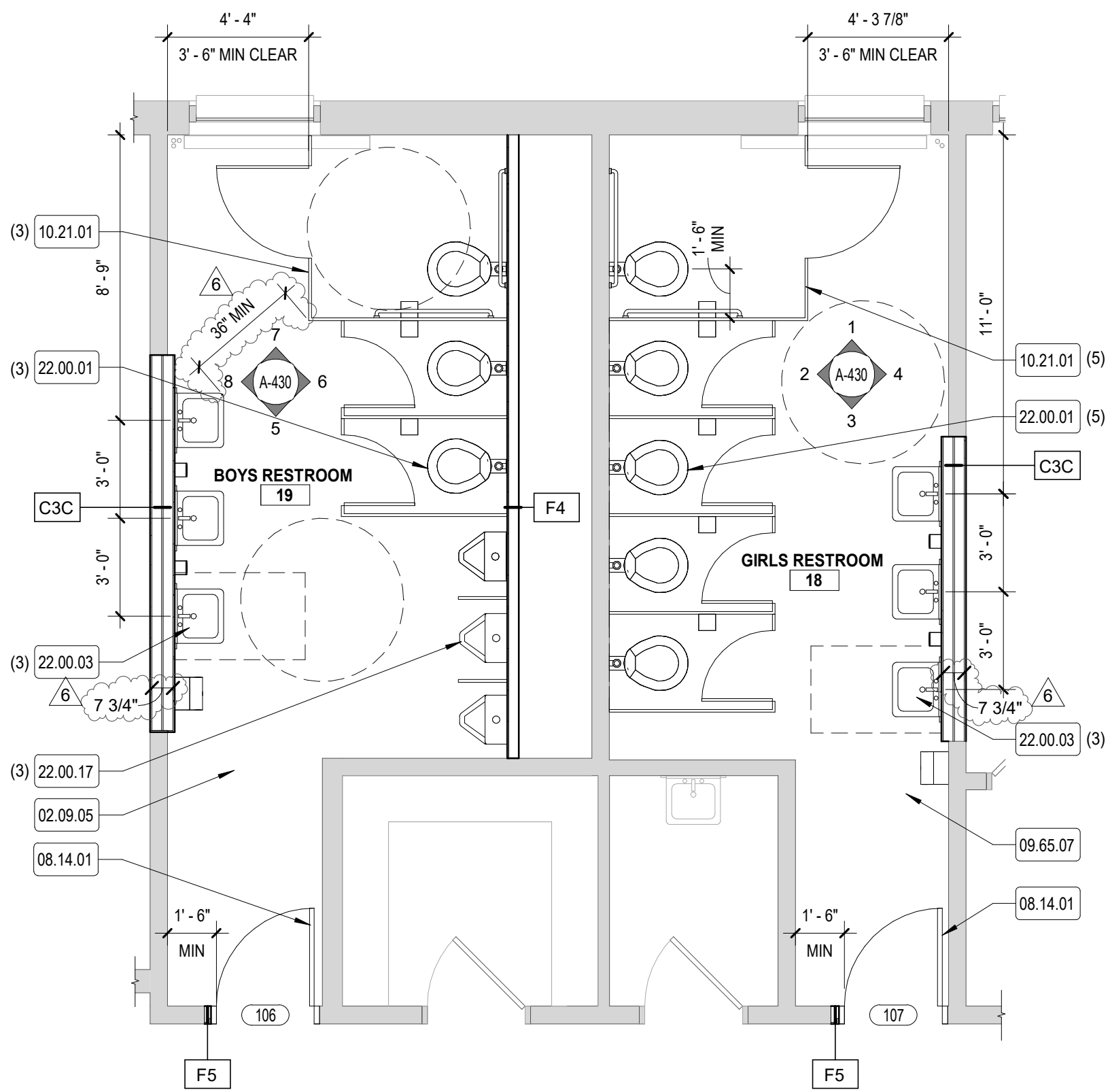
2 OFFICE & RESTROOM ENLARGED PLAN  
SCALE: 1/4" = 1'-0"



1 CLASSROOM & WET ROOM ENLARGED PLAN  
SCALE: 1/4" = 1'-0"



4 RESTROOM ENLARGED PLAN  
SCALE: 1/4" = 1'-0"



3 RESTROOMS ENLARGED PLAN  
SCALE: 1/4" = 1'-0"

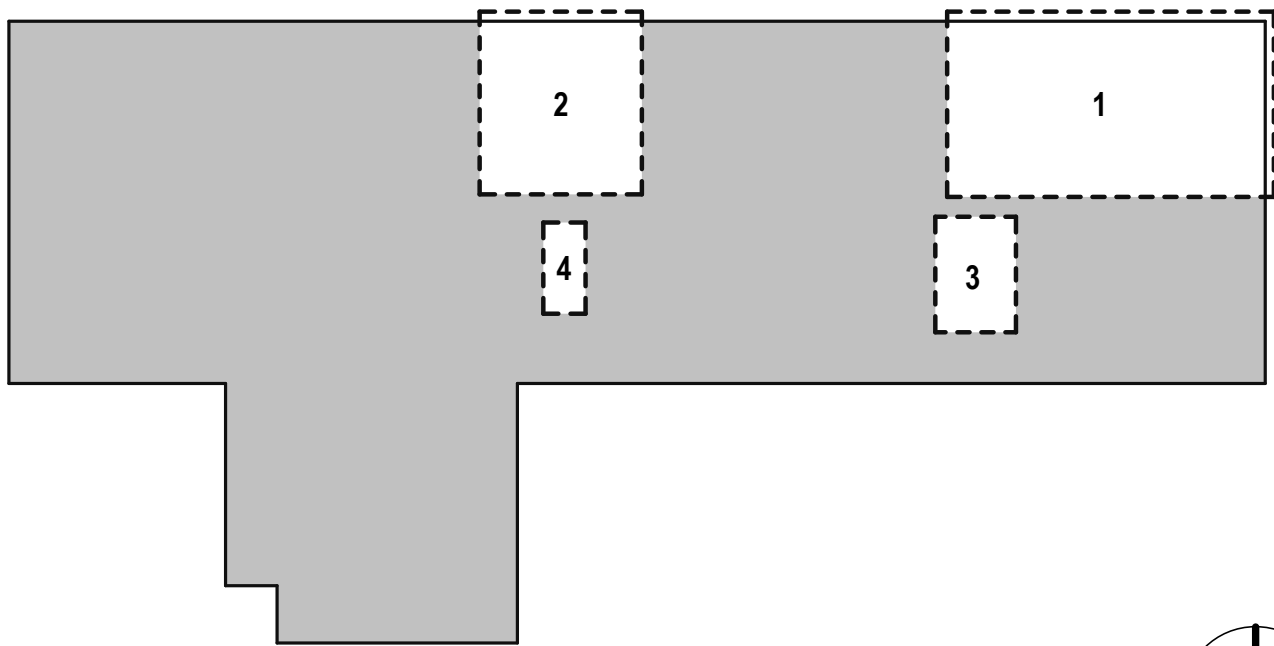
## KEYNOTE LEGEND

| NUMBER   | DESCRIPTION                                        |
|----------|----------------------------------------------------|
| 02.08.01 | EXISTING DOOR AND FRAME TO REMAIN                  |
| 02.09.05 | EXISTING FLOOR TO REMAIN                           |
| 02.12.01 | EXISTING BUILT-IN CABINET AND COUNTER TO REMAIN    |
| 02.12.02 | EXISTING CABINET TO REMAIN                         |
| 03.40.01 | CONCRETE INFILL FLOOR TO PATCH TRENCHING           |
| 06.10.21 | WOOD PANEL WALL INFILL, MATCH EXISTING, TYP.       |
| 06.83.01 | FIBERGLASS REINFORCED PANEL                        |
| 08.14.01 | WOOD DOOR, SEE DOOR SCHEDULE                       |
| 09.65.07 | VCT FLOORING, REFER TO FINISH PLANS                |
| 09.67.01 | POURED EPOXY FLOORING                              |
| 10.21.01 | TOILET PARTITIONS, REFER TO SPECS.                 |
| 10.28.06 | GRAB BAR                                           |
| 10.28.11 | ADULT-SIZED CHANGING STATION                       |
| 10.28.13 | WALL MOUNTED SHOWER SEAT                           |
| 22.00.01 | WALL MOUNTED TOILET, REFER TO PLUMBING BY [221]    |
| 22.00.03 | WALL MOUNTED LAVATORY, REFER TO PLUMBING BY [221]  |
| 22.00.07 | FLOOR DRAIN, REFER TO PLUMBING BY [221]            |
| 22.00.11 | WALL MOUNTED SHOWER HEAD, REFER TO PLUMBING, [221] |
| 22.00.17 | WALL MOUNTED URINAL, REFER TO PLUMBING BY [221]    |
| 23.00.01 | MECHANICAL UNIT, REFER TO MECHANICAL BY [231]      |

## FLOOR PLAN LEGEND

|                                      |  |                                                                                  |
|--------------------------------------|--|----------------------------------------------------------------------------------|
| EXISTING WALL CONSTRUCTION TO REMAIN |  | INDICATES PARTITION TYPE REFER TO G-020 SERIES                                   |
| NEW WALL CONSTRUCTION                |  |                                                                                  |
| EXISTING DOOR TO REMAIN              |  |                                                                                  |
| NEW DOOR                             |  | DOOR NUMBER:<br>REFER TO A-800 SERIES DOOR SCHEDULE AND FRAME/PANEL TYPES        |
| EXISTING WINDOW TO REMAIN            |  | WINDOW UNIT TYPE:<br>REFER TO A-810 SERIES WINDOW SCHEDULE AND FRAME/PANEL TYPES |
| LIMIT OF WORK                        |  |                                                                                  |
| SPOT ELEVATION                       |  | 100'-0"                                                                          |

## KEY PLAN (NOT TO SCALE)



HABEEB & ASSOCIATES  
ARCHITECTS

H&A  
150 LONGWATER DR  
NORWELL, MA 02061  
43 HARVARD ST  
WORCESTER, MA 01609  
781.871.9804  
habeeb@h-a.com

ADA RENOVATIONS

NEW CITIZEN'S CENTER

1407A MAIN STREET  
WORCESTER, MA 01603

### REVISIONS

| Δ | MM-DD-YYYY | DESCRIPTION |
|---|------------|-------------|
| 3 | 09/24/2026 | ADDENDUM 3  |
| 6 | 10/05/2026 | ADDENDUM 6  |

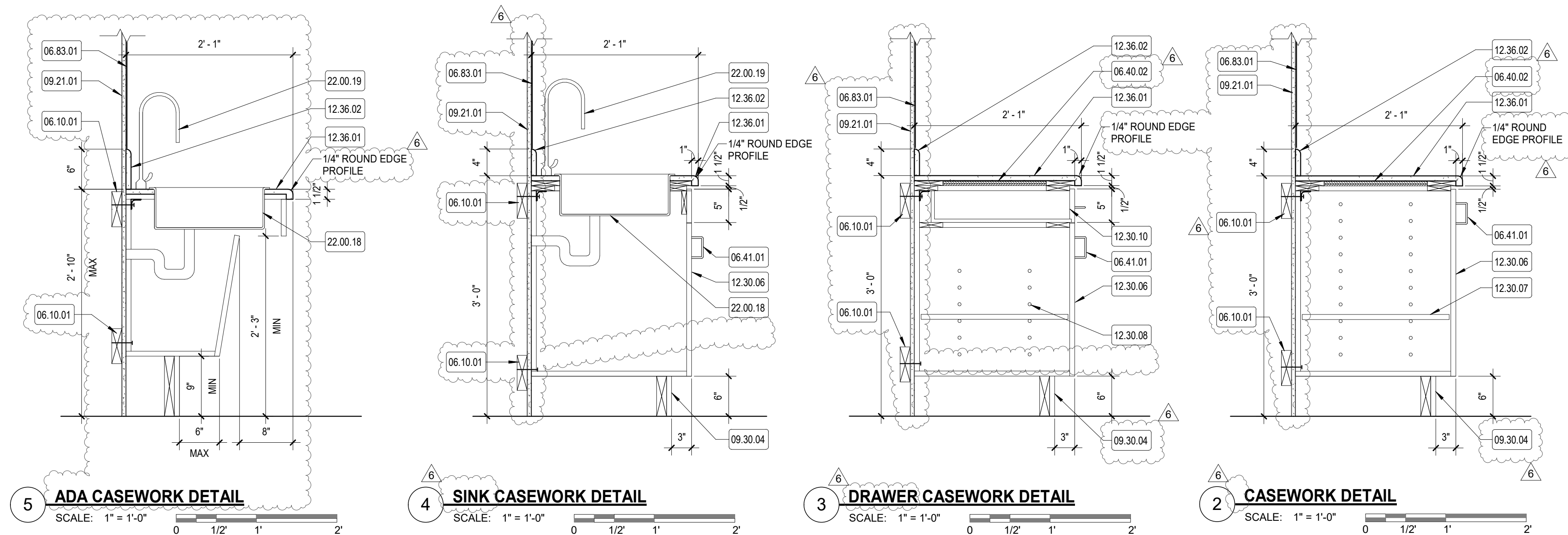
PROJECT NO: 2430.05  
DATE: 08/19/2026  
SCALE: AS NOTED  
DRAWN BY: JG / AR  
CHECKED BY: TP / MB

ENLARGED FIRST  
FLOOR PLANS

A-410



This Border is intended for a 22" x 34" sheet. If printed sheet size differs, refer to graphic bar scales only.



| KEYNOTE LEGEND |                                                   |
|----------------|---------------------------------------------------|
| NUMBER         | DESCRIPTION                                       |
| 06.10.01       | WOOD BLOCKING; 2x UNLESS OTHERWISE NOTED          |
| 06.40.02       | 3/4" MDF CORE                                     |
| 06.41.01       | PULL                                              |
| 06.83.01       | FIBERGLASS REINFORCED PANEL                       |
| 09.21.01       | GYPSUM WALLBOARD (GB)                             |
| 09.30.04       | QUARRY TILE COVE BASE                             |
| 09.90.01       | PAINT FINISH REFER TO FINISH PLANS                |
| 11.31.01       | REFRIGERATOR, OWNER SUPPLIED & OWNER INSTALLED    |
| 11.31.02       | ELECTRIC RANGE, OWNER SUPPLIED & OWNER INSTALLED  |
| 11.31.03       | WASHER & DRYER, OWNER SUPPLIED & OWNER INSTALLED  |
| 11.31.04       | RANGE HOOD, OWNER SUPPLIED & GC INSTALLED         |
| 12.30.01       | BASE 15" CASEWORK                                 |
| 12.30.02       | BASE 18" CASEWORK                                 |
| 12.30.03       | BASE 36" SINK CASEWORK                            |
| 12.30.04       | BASE 30" ADA SINK CASEWORK                        |
| 12.30.05       | BASE 18" ADA CASEWORK                             |
| 12.30.06       | CASEWORK DOOR                                     |
| 12.30.07       | CASEWORK SHELVING                                 |
| 12.30.08       | ADJUSTABLE SHELF SUPPORT CLIPS                    |
| 12.30.10       | CASEWORK DRAWER                                   |
| 12.36.01       | LAMINATE COUNTERTOP                               |
| 12.36.02       | LAMINATE BACKSPLASH                               |
| 22.00.18       | DROP-IN SINK, REFER TO PLUMBING BY [221]          |
| 22.00.19       | SINGLE HANDLED FAUCET, REFER TO PLUMBING BY [221] |
| 22.00.21       | LIGHT FIXTURE, REFER TO ELECTRICAL BY [261]       |

[illegible]

## KITCHEN ELEVATIONS & DETAILS

**ADA RENOVATIONS**

**NEW CITIZEN'S CENTER**

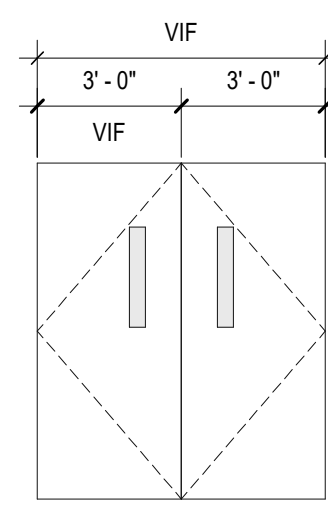
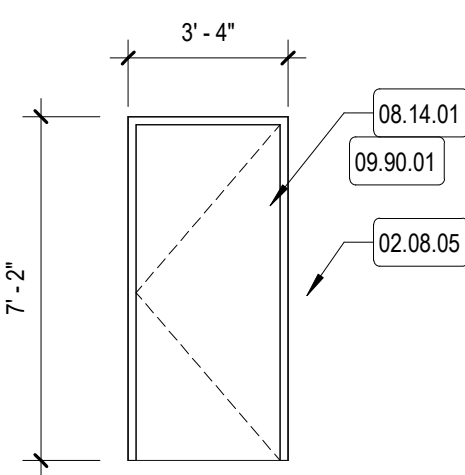
**1407A MAIN STREET  
WORCESTER, MA 01603**

**H&A**  
150 LONGWATER DR  
NORWELL, MA 02061  
43 HARVARD ST  
WORCESTER, MA 01609  
781.871.9804  
habeebarchi.com

PLOTTED ON: 10/5/2026 7:32:28 AM

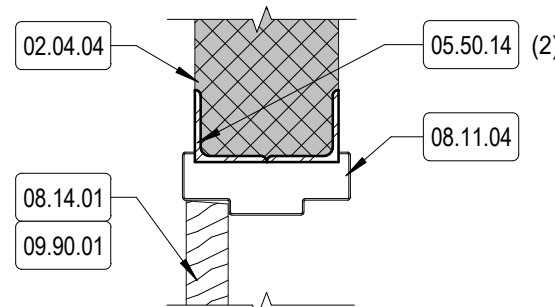
er

er



DN  
DOUBLE  
NARROW LITE

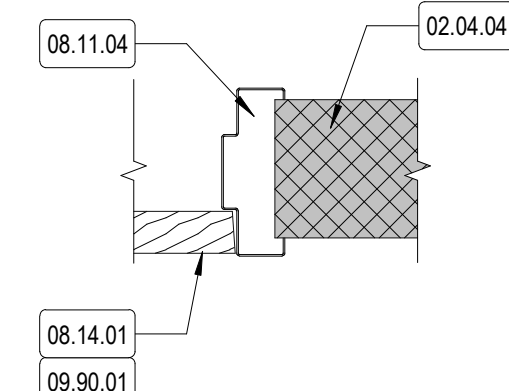
SCALE: 1/4" = 1'-0"



SCALE: 1 1/2" = 1'-0"

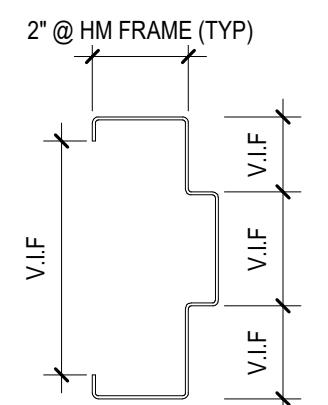
SCALE: 1 1/2" = 1'-0"

Figure 1 is a schematic representation of the experimental design. It shows a horizontal timeline from 0 to 2 minutes. The timeline is divided into alternating white and grey bars. A white bar at the start is labeled '0' and '1''.



SCALE: 1 1/2" = 1'-0"

SCALE: 1 1/2" = 1'-0"



SCALE: 1 1/2" = 1' 0"

SCALE:  $1\frac{1}{2}'' = 1'-0''$

SCALE: 2" = 41.0'

SCALE: 3" = 1'-0"

0 3" 6" 1'

SCALE: 1 1/2" = 1'-0"

0 1' 2'

SCALE: 1/4" = 1'-0"

SCALE:  $1\frac{1}{2}'' = 1'-0''$



0 1' 2

## KEYNOTE LEGEND

| NUMBER   | DESCRIPTION                           |
|----------|---------------------------------------|
| 02.04.04 | EXISTING CMU WALL TO REMAIN           |
| 02.08.05 | EXISTING HOLLOW METAL FRAME TO REMAIN |
| 02.08.08 | EXISTING GLAZING TO REMAIN            |
| 05.50.14 | L3x3x1/4 LLV                          |
| 08.11.04 | HOLLOW METAL FRAME                    |
| 08.14.01 | WOOD DOOR, SEE DOOR SCHEDULE          |
| 09.21.01 | GYPSUM WALLBOARD (GB)                 |
| 09.21.14 | SOUND ATTENUATION BLANKET             |
| 09.21.16 | DOUBLE METAL STUD AT HEAD, TYP        |
| 09.90.01 | PAINT FINISH REFER TO FINISH PLANS    |
| 09.90.09 | INTERIOR CAULKING, BOTH SIDES.        |

[illegible]

|                     |
|---------------------|
| PROJECT NO: 2430.05 |
| DATE: 08/19/2026    |
| SCALE: AS NOTED     |
| DRAWN BY: Author    |
| CHECKED BY: Checker |

**DOOR SCHEDULE**

**A-601**

H&A | HABEEB & ASSOCIATES  
ARCHITECTS

**ADA RENOVATIONS**

**NEW CITIZEN'S CENTER**

**1407A MAIN STREET  
WORCESTER, MA 01603**

© Copyright 2024 Habeeb & Associates Architects

---

[illegible]

|                     |
|---------------------|
| PROJECT NO: 2430.05 |
| DATE: 08/19/2026    |
| SCALE: AS NOTED     |
| DRAWN BY: Author    |
| CHECKED BY: Checker |

## FINISH PLANS & DETAILS

**A-710**

---