

**PROJECT MANUAL AND
SPECIFICATIONS**

**Collins Middle School
Renovations**

**29 Highland Avenue
Salem, MA**

**Addendum 1
August 27, 2021**

Architect

D/R/E/A/M
COLLABORATIVE

ARCHITECTURE POWERED BY DIVERSITY

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PROJECT MANUAL AND SPECIFICATIONS

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SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Sections include the following:
 - 1. Division 01 Section "Summary" for limitations on utility interruptions, work restrictions and use of site.
 - 2. Division 01 Section "Submittal Procedures" for procedures for submitting copies of implementation and termination schedule and utility reports.
 - 3. Division 01 Section "Execution" for progress cleaning requirements.
 - 4. Division 01 Section "Indoor Air Quality Requirements."
 - 5. Divisions 02 through 33 Sections for temporary heat, ventilation, and humidity requirements for products in those Sections.

1.3 USE CHARGES

- A. General: Cost or use charges for temporary facilities shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect, occupants of Project, testing agencies, and authorities having jurisdiction.
- B. Water Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- C. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.4 QUALITY ASSURANCE

- A. General: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction, including but no limited to the following:
 - 1. Massachusetts State Building Code and referenced standards.
 - 2. Health and safety regulations.
 - 3. Utility company regulations.
 - 4. Police and Fire Department rules and regulations.
 - 5. Environmental Protection Agency regulations.
- B. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
 - 1. Provide temporary lighting and receptacles to comply with OSHA standards.

TEMPORARY FACILITIES AND CONTROLS

- C. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.5 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 PRODUCTS

2.1 2.2 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
- B. Electrical Power Cords: Provide grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas where construction activities are in progress.
- C. HVAC Equipment: Provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
 - 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
 - 2. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- D. Air-Filtration Units: Primary and secondary HEPA-filter-equipped portable units with four-stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.

PART 3 EXECUTION

3.1 SUPPORT FACILITIES INSTALLATION

- A. Parking: Use designated areas of Owner's existing parking areas for construction personnel.
- B. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
 - 1. Identification Signs: Provide Project identification sign as indicated on Drawings.
 - 2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
 - a. Provide temporary, directional signs for construction personnel and visitors.
 - 3. Maintain and touchup signs so they are legible at all times.
- C. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F (27 deg C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Separate, salvage, recycle and dispose of materials in accordance with the Commonwealth of Massachusetts "Waste Ban" 310 CMR 19.017.
 - 1. Comply with Division 01 Section "Execution" for progress cleaning requirements.
 - 2. The Contractor shall provide sufficient quantity of dumpsters at strategic locations within

the Contract limit lines for collection of waste from the work of all subcontractors on site.

3. Do not pass materials through open windows, or through window openings when any portion of the window remains in the opening.

D. Staging and Scaffolding: Where staging and scaffolding is required, the General Contractor shall provide the entire installation.

1. Staging shall be of approved design, erected and removed by experienced stage builders and shall have all accident prevention devices required by State and local laws.

3.2 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Security Enclosure and Lockup: Coordinate with Owner to provide a secure work area to prevent unauthorized entrance, vandalism, theft, and similar violations of security.

B. Protection: Protect the Work at all times from damages. Provide all pumps, equipment and enclosures to ensure this protection.

1. Protect the building and the site from damage, loss or liability due to theft or vandalism when the work is not in progress at night, weekends, or holidays.
2. Exercise precaution for the protection of persons and property at all times. Observe the provisions of applicable laws and construction codes. Take additional safety and health measures, or cause such measures to be taken as reasonably necessary. Maintain guards on machinery, equipment and other hazards as set forth in the safety provisions of the Manual of Accident Prevention in Construction, published by the Associated General Contractors of America, to the extent that such provisions are not in contravention of applicable laws.
3. From damage arising from Contractor negligence and from failure to adhere to Contract Documents, costs shall be borne by Contractor to repair all damages.

C. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241 and the Salem Fire Department requirements.

1. Prohibit smoking anywhere on site in accordance with MGL.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

3.3 OPERATION, TERMINATION, AND REMOVAL

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

B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may

have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor, unless otherwise indicated.
2. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

END OF SECTION

SECTION 08 14 07
COMMERCIAL WOOD DOORS
(PART OF TRADE BID FOR 08 80 00 AS APPLICABLE)

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Interior standard wood veneer flush wood doors.
- B. Related section include the following:
 - 1. Division 08 Section "Hollow Metal Doors and Frames."
 - 2. Division 08 Section: "Door hardware."
 - 3. Division 08 Section: "Aluminum Framed Entrances and Storefront."
 - 4. Division 08 Section: "Glazing."

1.3 ACTION SUBMITTALS

- A. Product Data: Each type of door and finish.
 - 1. Core and edge construction.
 - 2. Glazed openings.
 - 3. Finishes.
- B. Shop Drawings and Schedule:
 - 1. Use same unit designations used in Contract Documents.
 - 2. Hardware preparation.
 - 3. Glazed openings.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance data.
- B. Manufacturer warranties transferrable to Owner.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Package factory-finished doors individually in manufacturer's standard plastic bags, stretch wrap, or cardboard cartons.
- B. Store doors inside building in clean, dry location.
- C. Mark each door on top rail with opening number used on Shop Drawings.

1.6 COORDINATION

- A. Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weather tight, wet work in spaces is complete and dry, and HVAC system is operating and maintaining temperature between 60 and 90 deg F and relative humidity at occupancy levels during remainder of construction period.

1.7 WARRANTY

- A. Standard manufacturer warranties.
 - 1. Failures include, but are not limited to, the following:
 - a. Warping (bow, cup, or twist) more than 1/4 inch (6 mm) in 42-by-84-inch (1065-by-2130-mm) section.
 - b. Telegraphing of core construction in face veneers exceeding 0.01 inch in 3-inch (0.25 mm in 76-mm) span.
 - 2. Solid Core Doors: Limited lifetime warranty.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design: Products of Cendura Series by Masonite Architectural are specified to indicate requirements for quality and appearance.
 - 1. Subject to compliance with requirements, equivalent products of the following manufacturers will be acceptable.
 - 1). TruDoor
 - 2). Oshkosh
 - b. Source Control: Supply all wood doors from a single manufacturer.

2.2 MANUFACTURING STANDARD

- A. Interior Wood Doors: Window & Door Manufacturers Association publication ANSI/WDMA I.S. 1A "Industry Standard for Interior Architectural Wood Flush Doors".

2.3 INTERIOR SOLID CORE STANDARD VENEER FLUSH WOOD DOORS FOR TRANSPARENT FINISH

- A. Solid Core Standard Veneer Flush Wood Doors with Glazed Lites <insert drawing designation>:
 - 1. WDMA Performance Level: Extra Heavy Duty
 - 2. Faces:
 - a. Veneer Grade: A.
 - b. Veneer Species: Match adjacent existing doors
 - c. Veneer cut: Match adjacent existing doors
 - d. Veneer Face Match: Running match.
 - 3. Vertical Edges: Mill option softwood or low-density hardwood.
 - 4. Horizontal Edges: Structural composite lumber.
 - 5. Core: Structural composite lumber
 - 6. Construction: Five plies. Stiles and rails are bonded to core, and then entire unit is abrasive planed before veneering.
 - 7. Thickness: 1 ¾ inch. Factory Glazing: Refer to Section 08 8000 "Glazing" for glass view panels in flush wood doors. Factory install glass as required. Fill glazing bead nail holes in factory finished doors.
 - 8. Wood Glazing Accessories: Solid wood of same species as face veneer in standard profile selected by Architect.
 - a. Bead Profile: Straight Lip.

2.4 FABRICATION

- A. Factory Fitting: Fit to frame openings with clearances specified in WDMA I.S. 1A.
- B. Undercut: Maximum 3/8 inch (10 mm) above thresholds.
- C. Factory Machining: Machine doors for hardware that is not surface applied.
- D. Verify dimensions for hardware mortises in metal frames before machining.
- E. Openings:
 - 1. Cut and trim openings and install glazing at factory.
 - 2. Cut openings and install louvers at factory.

2.5 FINISHES

- A. Finish Grade: Match grade of door.
- B. Transparent: WDMA TR-8, UV-Cured Acrylated Polyester/Urethane.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine doors and substrates, with Installer present, for suitable conditions where wood stile and rail doors and fire-rated wood door frames will be installed.
 - 1. Verify that installed frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
 - a. Reject doors with defects.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Hardware: For installation, see Division 08 Section "Door Hardware."
- B. Install wood doors to comply with manufacturer's written instructions, WDMA I.S.6, "Industry Standard for Wood Stile and Rail Doors," and other requirements specified.
- C. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

3.3 ADJUSTING

- A. Operation: Rehang or replace doors that do not swing or operate freely.
- B. Finished Doors: Replace doors that are damaged or do not comply with requirements. Doors may be repaired or refinished if Work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION

SECTION 08 41 13
ALUMINUM FRAMED ENTRANCES AND STOREFRONTS
(PART OF TRADE BID FOR 08 80 00)

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section shall be included in filed sub-bid for Glazing.
- B. This section includes the following:
 - 1. Entrances and Storefront Systems complete with reinforcing, fasteners, anchors, and attachment devices
 - 2. Accessories necessary to complete work.
- C. Related section include the following:
 - 1. Section 08 14 17 – Commercial Wood Doors
 - 2. Section 08 71 00 - Door Hardware
 - 3. Section 08 80 00 – Glazing

1.3 SYSTEM REQUIREMENTS

- A. Design Requirements:
 - 1. Drawings are diagrammatic and do not purport to identify nor solve problems of thermal or structural movement, glazing, anchorage or moisture disposal.
 - 2. Requirements shown by details are intended to establish basic dimension of units, sight lines and profiles of members.
 - 3. Provide concealed fastening.
 - 4. Provide entrance and storefront systems, including necessary modifications, to meet specified requirements and maintaining visual design concepts.
 - 5. Attachment considerations are to take into account site peculiarities and expansion and contraction movements so there is no possibility of loosening, weakening or fracturing connection between units and building structure or between units themselves.
 - 6. Anchors, fasteners and braces shall be structurally stressed not more than 50% of allowable stress when maximum loads are applied.
 - 7. Provide for expansion and contraction without detriment to appearance or performance.
 - 8. Assemblies shall be free from rattles, wind whistles and noise due to thermal and structural movement and wind pressure.

1.4 ACTION SUBMITTALS

- A. Product Data:
 - 1. Submit manufacturer's descriptive literature and product specifications.
 - 2. Include information for factory finishes, hardware, accessories and other required components.
 - 3. Include color charts for finish indicating manufacturer's standard colors available for

selection.

B. Shop Drawings:

1. Submit shop drawings covering fabrication, installation and finish of specified systems.
2. Include following:
 - a. Fully dimensioned plans and elevations with detail coordination keys.
 - b. Locations of exposed fasteners and joints.
3. Provide detailed drawings of:
 - a. Composite members.
 - b. Joint connections for framing systems and for entrance doors.
 - c. Anchorage.
 - d. System reinforcements.
 - e. Expansion and contraction provisions.
 - f. Hardware, including locations, mounting heights, reinforcements and special installation provisions.
 - g. Glazing methods and accessories.
 - h. Internal sealant requirements as recommended by sealant manufacturer.

C. Samples for Verification:

1. Submit samples indicating quality of finish, in required colors, on alloys used for work, in sizes as standard with manufacturer.
2. Where normal texture or color variations are expected, include additional samples illustrating range of variation.

D. Fabrication Sample: Of each vertical-to-horizontal intersection of aluminum-framed systems, made from 12-inch lengths of full-size components and showing details of the following:

1. Joinery, including concealed welds.
2. Anchorage.
3. Expansion provisions.
4. Glazing.

E. Test Reports:

1. Standard Systems: Submit certified copies of previous test reports substantiating performance of system in lieu of re-testing. Include other supportive data as necessary.

1.5 QUALITY ASSURANCE

A. Single Source Responsibility:

1. To ensure quality of appearance and performance, obtain materials for each system from either a single manufacturer or from manufacturer approved by each system manufacturer.

B. Installer Qualifications: Certified in writing by Contractor as qualified for installation of specified systems.

C. Perform Work in accordance with AAMA SFM-1 and manufacturer's written instructions.

1.6 DELIVERY, STORAGE AND HANDLING

A. Protect finished surfaces as necessary to prevent damage.

B. Do not use adhesive papers or sprayed coatings that become firmly bonded when exposed to sun.

- C. Do not leave coating residue on any surfaces.
- D. Replace damaged units.

1.7 WARRANTY

- A. Provide written manufacturer's warranty, executed by company official, warranting against defects in materials and products for 2 years from date of Substantial Completion.
- B. Provide written installer's warranty, warranting work to be watertight, free from defective materials, defective workmanship, glass breakage due to defective design, and agreeing to replace components that fail within 2 years from ship date.
 - 1. Warranty shall cover following:
 - a. Completed installation will remain free from rattles, wind whistles and noise due to thermal and structural movement and wind pressure.
 - b. System is structurally sound and free from distortion.
 - c. Glass and glazing gaskets will not break or "pop" from frames due to design wind, expansion or contraction movement.
 - d. Glazing sealants and gaskets will remain free from abnormal deterioration or dislocation due to sunlight, weather or oxidation.
 - e. .

PART 2 PRODUCTS

2.1 MANUFACTURERS AND PRODUCTS

- A. Subject to compliance with requirements indicated, provide products by one of the following:
 - 1. USA Aluminum, Series 250
 - 2. YKK AP, YES20
 - 3. Boyd Aluminum, System B350
- B. Storefront Framing System:
 - 1. Description: Center set, flush glazed; jambs continuous; head, sill, and jamb attached by screws into rough opening

2.2 MATERIALS

- A. Extrusions: ASTM B 221 (ASTM B 221M), 6063-T5 Aluminum Alloy.
- B. Aluminum Sheet:
 - 1. Painted Finish: ASTM B 209 (ASTM B 209M), 3003-H14 Aluminum Alloy, 0.080" (1.95 mm) minimum thickness.

2.3 GLAZING SYSTEMS

- A. Glazing: As specified in Division 08 Section "Glazing."
- B. Glazing Gaskets: Manufacturer's standard compression types; replaceable, molded or extruded, of profile and hardness required to maintain watertight seal.
- C. Spacers and Setting Blocks: Manufacturer's standard elastomeric type.
- D. Bond-Breaker Tape: Manufacturer's standard TFE-fluorocarbon or polyethylene material to which sealants will not develop adhesion.

2.4 ACCESSORIES

A. Manufacturer's Standard Accessories:

1. Fasteners: Zinc plated steel concealed fasteners; Hardened aluminum alloys or AISI 300 series stainless steel exposed fasteners, countersunk, finish to match aluminum color. 2. Sealant: Non-skinning type, AAMA 803.3.

2.5 FABRICATION

- A. Shop Assembly: Fabricate and assemble units with joints only at intersection of aluminum members with uniform hairline joints; rigidly secure, and sealed in accordance with manufacturer's recommendations.
- B. Hardware: Drill and cut to template for hardware. Reinforce frames and door stiles to receive hardware in accordance with manufacturer's recommendations.
- C. Welding: Conceal welds on aluminum members in accordance with AWS recommendations or methods recommended by manufacturer. Members showing welding bloom or discoloration on finish or material distortion will be rejected.
- D. .

PART 3 EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS / RECOMMENDATIONS

- A. Compliance: Comply with manufacturer's product data, including product technical bulletins, installation instructions, and product carton instructions.

3.2 EXAMINATION

- A. Site Verification of Conditions: Verify conditions (which have been previously installed under other sections) are acceptable for product installation in accordance with manufacturer's instructions.
 1. Verify location of preset anchors, perimeter fasteners, and block-outs are in accordance with shop drawings.

3.3 PREPARATION

- A. Adjacent Surfaces Protection: Protect adjacent work areas and finish surfaces from damage during product installation.
 1. Aluminum Surface Protection: Protect aluminum surfaces from contact with lime, mortar, cement, acids, and other harmful contaminants.

3.4 INSTALLATION

- A. General: Install manufacturer's system in accordance with shop drawings, and within specified tolerances.
- B. Protect aluminum members in contact with masonry, steel, concrete, or dissimilar materials using nylon pads or bituminous coating.
 1. Shim and brace aluminum system before anchoring to structure.

3.5 FIELD QUALITY CONTROL

Manufacturer's Field Services: Upon request, provide manufacturer's field service consisting of site visit for inspection of product installation in accordance with manufacturer's instructions.

3.6 ADJUSTING AND CLEANING

- A. Adjusting: Adjust swing doors for operation in accordance with manufacturer's recommendations.
- B. Cleaning: The General Contractor shall clean installed products in accordance with manufacturer's instructions prior to owner's acceptance, and remove construction debris from project site. Legally dispose of debris.
- C. Protection: The General Contractor shall protect the installed product's finish surfaces from damage during construction

END OF SECTION

SECTION 08 56 19
INTERIOR SLIDING PASS WINDOWS
(PART OF TRADE BID FOR 08 80 00)

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section shall be included in filed sub-bid for Glazing.
- B. This section includes the following:
 - 1. Frameless interior pass-thru sliding service windows as indicated in drawings and in sections.
- C. Related section include the following:
 - 1. Division 08 Section: "Aluminum Framed Entrances and Storefront" as part of Glazing filed sub-bid.
 - 2. Division 08 Section: "Glazing" as part of Glazing filed sub-bid.

1.3 ACTION SUBMITTALS

- A. Shop Drawings: Submit for fabrication and installation of windows. Include details, elevations and installation requirement of finish hardware and cleaning.
- B. Product Data: Submit Manufacturer's technical product data substantiating that products comply, and installation instructions.
- C. Samples: Exposed finishes. 4" (102 mm) piece of each color.

1.4 DELIVERY STORAGE AND HANDLING

- A. Deliver windows crated to provide protection during transit and job storage.
- B. Inspect windows upon delivery for damage. Unless minor defects can be made to meet the Architect's specifications and satisfaction, damaged parts should be removed and replaced.
- C. Store windows at building site under cover in dry location.
- D. Protect products from damage during handling and construction operations.

1.5 WARRANTY

- A. Warranty: All material and workmanship shall be warranted against defects for a period of one (1) year from the original date of purchase.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Header: Shall be constructed of 6063-T5 extruded aluminum. Window rolls on top-hung ball bearing rollers. Overall size is to be in accordance with the contract drawings.
- B. Glazing: The glazing is to be ¼" (6 mm) in thickness.
- C. Options: Keyed lock, fixed sidelite header insert, recessed bottom track.
- D. Models: **Sharyn XO**. X = sliding panel, O = fixed panel, as viewed from clerks side.

2.2 PRODUCTS GENERAL

- A. Basis of design: Design is based on Sharyn Series Frameless Interior Pass-Thru Window manufactured by:

C.R. Laurence Co., Inc. (800) 421-6144 Ext. 7760
transaction@cr Laurence.com

2.3 PASS WINDOWS

- A. Pass Window Units: Factory fabricated, glazed unit; horizontal sliding type.
- B. Header: Extruded aluminum.
- C. Glass: Safety type specified in Section 08 80 00, GLAZING.
- D. Hardware: Manufacturer's standard double track header, rollers, guides, push button lock.

PART 3 EXECUTION

3.1 PREPARATION

- A. Examine and verify substrate suitability for product installation.
- B. Verify rough opening is properly sized and located.
- C. Protect existing construction and completed work from damage.
- D. Apply barrier coating to aluminum surfaces in contact with dissimilar metals and cementitious materials to minimum 0.7 mm (30 mils) dry film thickness.

3.2 INSTALLATION

- A. Install window in accordance with manufacturer's printed instructions and recommendations. Repair damaged units as directed (if approved by the manufacturer and the architect) or replace with new units.

3.3 CLEANING

- A. Clean frame and glazing surfaces after installation, complying with requirements contained in the manufacturer's instructions. Remove excess glazing sealant compounds, dirt or other substances.

3.4 PROTECTION

- A. Institute protective measures required throughout the remainder of the construction period to ensure that all the windows do not incur any damage or deterioration, other than normal weathering, at the time of acceptance.

END OF SECTION

SECTION 08 71 00

DOOR HARDWARE

(PART OF TRADE BID FOR 08 80 00 AS APPLICABLE)

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:
 - 1. Commercial door hardware for swinging doors.
- B. Related section include the following:
 - 1. Division 08 Section "Hollow Metal Doors and Frames."

1.3 ACTION SUBMITTALS

- A. Product Data: Include construction and installation details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Samples for Verification: For exposed door hardware of each type, in specified finish, full size. Tag with full description for coordination with the door hardware sets. Submit Samples before, or concurrent with, submission of the final door hardware sets.
 - 1. Samples will be returned to Contractor. Units that are acceptable and remain undamaged through submittal, review, and field comparison process may, after final check of operation, be incorporated into the Work, within limitations of keying requirements.
- C. Qualification Data: For Architectural Hardware Consultant.
- D. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for locks, latches, delayed-egress locks, and closers.
- E. Maintenance Data: For each type of door hardware to include in maintenance manuals. Include the following:
 - 1. Final hardware schedule, as-built.
 - 2. Keying schedule.
 - 3. Product cut sheets for each item installed.
 - 4. Parts list and numbers for each item installed. informational submittals
 - 5. Maintenance information for each item installed.
 - 6. Name, address and phone number of local representative of each item installed.
- F. Warranty: Special warranty specified in this Section.
- G. Other Action Submittals:
 - 1. Door Hardware Sets: Prepared by or under the supervision of the Architectural Hardware Consultant, detailing fabrication and assembly of door hardware, as well as procedures

and diagrams. Coordinate the final door hardware sets with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

- a. Format: Use same scheduling sequence and format and use same door numbers as in the Contract Documents.
 - b. Content: Include the following information:
 - 1). Identification number, location, hand, fire rating, and material of each door and frame.
 - 2). Type, style, function, size, quantity, and finish of each door hardware item. Include description and function of each lockset and exit device.
 - 3). Complete designations of every item required for each door or opening including name and manufacturer.
 - 4). Fastenings and other pertinent information.
 - 5). Location of each door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 - 6). Explanation of abbreviations, symbols, and codes contained in schedule.
 - 7). Mounting locations for door hardware.
 - 8). Door and frame sizes and materials.
 - 9). List of related door devices specified in other Sections for each door and frame.
 - 10). Name, address and phone number of local representative of each item installed.
 - c. Submittal Sequence: Submit the final door hardware sets at earliest possible date, particularly where approval of the door hardware sets must precede fabrication of other work that is critical in 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 sets.
2. Keying Schedule: Prepared by or under the supervision of Architectural Hardware Consultant and following Keying Conference, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers trained and approved by lock manufacturer.
 1. Installer's responsibilities include supplying and installing door hardware and providing a qualified Architectural Hardware Consultant available during the course of the Work to consult with Contractor, Architect, and Owner about door hardware and keying.
 2. Installer shall have warehousing facilities in Project's vicinity.
 3. Scheduling Responsibility: Preparation of door hardware and keying schedules. delivery storage and handling
- B. Architectural Hardware Consultant Qualifications: A person who is currently certified by DHI 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.
- C. Source Limitations: Obtain each type and variety of door hardware from a single manufacturer, unless otherwise indicated.
- D. Regulatory Requirements: Comply with applicable provisions in AAB and 2010 ADA Standards.
 1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf.
 2. Comply with the following maximum opening-force requirements: a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf applied perpendicular to door.
 3. Adjust door closer sweep periods 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.

- E. Keying Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." In addition to Owner, Contractor, and Architect, conference participants shall also include Installer's Architectural Hardware Consultant and Owner's security consultant. 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.

- F. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." In addition to Owner, Contractor, and Architect, a representative of each major hardware category shall be present to instruct installers on the proper installation and adjustment of door hardware. Review methods and procedures related to installation of door hardware including, but not limited to, the following:
 - 1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 2. 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 sets, and include basic installation instructions, templates, and necessary fasteners with each item or package.
 - 1. Each item to be individually packaged in manufacturer's original container.

1.6 COORDINATION

- A. Templates: Distribute door hardware 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.

- B. Existing Openings: Where new 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 for proper operation.

1.7 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures including excessive deflection, cracking, or breakage.
 - b. Faulty operation of operators and door hardware.
 - c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.
 - 2. Warranty Period: One year from date of Substantial Completion, except as follows:

- a. Manual Closers: 10 years from date of Substantial Completion.
- b. Hinges: Lifetime.

1.8 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish two complete sets of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware. Furnish two extra fasteners of each type and finish installed.
- B. Maintenance Service: Beginning at Substantial Completion, provide six months' full maintenance by skilled employees of door hardware Installer. Include quarterly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper door hardware operation. Provide parts and supplies same as those used in the manufacture and installation of original products.

PART 2 PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

- A. General: Provide door hardware for each door to comply with requirements in this Section, door hardware sets indicated in door and frame schedule, and door hardware sets indicated in Part 3 "Door Hardware Sets" Article.
 - 1. Door Hardware Sets: Provide quantity, item, size, finish or color indicated.
- B. Designations: Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of door hardware are indicated in Part 3 "Door Hardware Sets" Article. Products are identified by descriptive titles corresponding to requirements specified in Part 2.

2.2 HINGES

- A. Hinges: ANSI/BHMA A156.1 certified butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.
 - 1. Quantity: Provide the following hinge quantity:
 - a. Three Hinges: For doors with heights 61 to 90 inches.
 - 2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
 - a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
 - b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.
 - 3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:
 - a. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.
 - 4. Hinge Options: Comply with the following:
 - a. Non-removable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.
 - 5. Manufacturers:
 - a. Bommer Industries (BO).
 - b. Hager Companies (HA).
 - c. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK).
 - 6. Mounting: Full mortise (butts).
 - 7. Bearing Material: Ball bearing.
 - 8. Grade: Grade 1 (heavy weight).
 - 9. Base and Pin Metal:
 - a. Interior Hinges: Steel with steel pin.

10. Pins: Non-rising loose, unless otherwise indicated.
11. Tips: Flat button.
12. Corners: Square.

2.3 MECHANICAL LOCKS AND LATCHES

- A. Cylindrical Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.2, Series 4000, Grade 1 certified cylindrical (bored) locksets furnished in the functions as specified in the Hardware Sets. Lock chassis fabricated of heavy gauge steel, zinc dichromate plated, with through-bolted application. Locks are to be non-handed and fully field reversible.
 1. Basis of Design Product: Subject to compliance with requirements, provide **Schlage Commercial Lock Division, an Allegion Company; L9457 Series.** or approved equal
- B. Functions: As indicated in door hardware schedule.
- C. Lock Throw: Comply with testing requirements for length of bolts required for labeled fire doors, and as follows:
 1. Bored Locks: Minimum 1/2-inch latchbolt throw.
- D. Lock Backset: 2-3/4 inches.
- E. Lock Trim:
 1. Levers: Stainless steel; cast or forged and through-bolted with a 2-piece spindle.
 - a. Basis of design: Schlage Standard 17B
 2. Escutcheons (Roses): Wrought.
 3. Lockset Design: As selected by Architect from manufacturer's full range.
- F. Strikes: Manufacturer's standard strike with strike box for each latchbolt or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, and as follows:
 1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
- G. Finish Coating: Manufacturer's standard silver-based antimicrobial compound as an integral part of the finish coating.

2.4 LOCK CYLINDERS

- A. Lock Cylinders: Tumbler type, constructed from brass or bronze, stainless steel, or nickel silver.
- B. Cylinders: Manufacturer's standard tumbler type, constructed from brass or bronze, stainless steel, or nickel silver, and complying with the following:
 1. Number of Pins: Six.
 2. Mortise Type: Threaded cylinders with rings and straight or clover-type cam.
 3. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
 - a. High-Security Grade: BHMA A156.5, Grade 1A, listed and labeled as complying with pick and drill-resistant testing requirements in UL 437 (Suffix A).
- C. Permanent Cores: Manufacturer's standard; finish face to match lockset; complying with the following:
 1. Interchangeable Cores: Core insert, removable by use of a special key; usable with other manufacturers' cylinders, employing "restricted keyway."

- D. Manufacturer: Same manufacturer as for locks and latches.

2.5 KEYING

- A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, Appendix A. Incorporate decisions made in keying conference, and as follows:
 - 1. Existing System: Master key or grand master key locks to Owner's existing system.
- B. Keys: Nickel silver.
 - 1. Quantity: In addition to one extra key blank for each lock, provide the following:
 - a. Cylinder Change Keys: Three.
 - b. Master Keys: Five.
 - c. Grand Master Keys: Five.

2.6 MECHANICAL STOPS AND HOLDERS

- A. Wall Mounted Stops: BHMA A156.16; polished cast brass, bronze, or aluminum base metal.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Hager Companies.
 - b. IVES Hardware; an Allegion Company.
 - c. Rockwood Manufacturing Company.
 - d. Trimco.
 - 2. Provide floor stops for doors. Do not mount floor stops where they will impede traffic.
- B. Dome-Type Floor Stop: Grade 1; with minimum 1-inch high bumper for doors without threshold and 1-3/8-inch high bumper for doors with threshold; provide with extruded aluminum riser for carpet installations.

2.7 LOCK AND LATCH STRIKES

- A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:
 - 1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
- B. Standards: Comply with the following:
 - 1. Strikes for Mortise Locks and Latches: BHMA A156.13.
 - 2. Strikes for Bored Locks and Latches: BHMA A156.2.
 - 3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
 - 4. Dustproof Strikes: BHMA A156.16.

2.8 ARCHITECTURAL SEALS

- A. General: Provide sound gasketing on interior doors.
- B. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.
- C. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

D. Manufacturers:

1. National Guard Products (NG).
2. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE).
3. Reese Enterprises, Inc. (RE).

2.9 METAL KICK PLATES

- A. General: Provide metal kick plates on doors
- B. Material: .125" Stainless Steel
- C. Standards: Comply with ANSI J102
- D. Countersunk holes

2.10 FABRICATION

- A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.11 FINISHES

- A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.
- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware
- C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

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

3.2 PREPARATION

- A. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

- A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.
 1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.

- B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
 - 1. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
 - 2. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
 - 3. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.
- C. Retrofitting: Install door hardware to comply with manufacturer's published templates and 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 specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
- D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."
- E. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

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.

3.5 CLEANING AND PROTECTION

- A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.
- B. Clean adjacent surfaces soiled by door hardware installation.
- C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.6 DOOR HARDWARE SETS

- A. Wood doors at Faculty Room and Human Resources offices:
 - 1 ½ Pair Full Mortise Butts
 - 1 Lockset, office function
 - 1 Floor Stop
 - Sound Gasketing
 - 1 Kickplate

END OF SECTION

SECTION 08 80 00

GLAZING

(PART OF TRADE BID AS APPLICABLE)

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes glazing for the following products and applications, including those specified in other Sections where glazing requirements are specified by reference to this Section:

- 1. Commercial wood doors
- 2. Aluminum framed entrances and storefronts as a part of Glazing filed sub-bid.

- B. Related Sections include the following:

- 1. Division 08 Section "Hollow Metal Doors and Frames" for installing glazing in hollow metal doors and frames.
- 2. Division 08 Section "Aluminum-Framed Entrances and Storefronts."

1.3 ACTION SUBMITTALS

- A. Product Data: For each glass product and glazing material indicated.
- B. Samples: For each product in the form of 12-inchesquare Samples for glass
- C. Glazing Schedule: Use same designations indicated on Drawings for glazed openings in preparing a schedule listing glass types and thicknesses for each size opening and location.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For installers.
- B. Preconstruction Adhesion and Compatibility Test Report: From glazing sealant manufacturer indicating glazing sealants were tested for adhesion to glass and glazing channel substrates and for compatibility with glass and other glazing materials.
- C. Product Test Reports: For each of the following types of glazing products:
 - 1. Coated float glass.
 - 2. Glazing sealants.
- D. Warranties: Special warranties specified in this Section..

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed glazing similar in material, design, and extent to that indicated for this Project; whose work has resulted in glass installations with a record of successful in-service performance; and who employs glass installers for this Project who are certified under the National Glass Association's Certified Glass

Installer Program.

- B. Source Limitations for Glass: Obtain the following through one source from a single manufacturer for each glass type: clear float glass.
- C. Source Limitations for Glazing Accessories: Obtain glazing accessories through one source from a single manufacturer for each product and installation method indicated.
- D. Glass Product Testing: Obtain glass test results for product test reports in "Submittals" Article from a qualified testing agency based on testing glass products.
 - 1. Glass Testing Agency Qualifications: An independent testing agency with the experience and capability to conduct the testing indicated, as documented according to ASTM E 548.
- E. Elastomeric Glazing Sealant Product Testing: Obtain sealant test results for product test reports in "Submittals" Article from a qualified testing agency based on testing current sealant formulations within a 36-month period.
 - 1. Sealant Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated, as documented according to ASTM E 548.
 - 2. Test elastomeric glazing sealants for compliance with requirements specified by reference to ASTM C 920, and where applicable, to other standard test methods.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Protect glazing materials according to manufacturer's written instructions and as needed to prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.

1.7 COORDINATION

- A. Templates: Distribute door hardware 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.
- B. Existing Openings: Where new 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 for proper operation.

PART 2 PRODUCTS

2.1 GLASS PRODUCTS

- A. Fully Tempered Float Glass (Clear): ASTM C 1048, Kind FT (fully tempered), Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear), Quality-Q3.
 - 1. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed unless otherwise indicated.
- B. Ultraclear Float Glass: ASTM C1036, Type I, Class I (clear), Quality-Q3; and with visible light transmission of not less than 91 percent.
 - 1. Basis-of-Design Product: Subject to compliance with requirements provide Vitro

- Architectural Glass; Starphire or one of the following:
- a. Guardian Industries Corporation; UltraClear.
 - b. Viracon; Acuity.

2.2 GLAZING TAPES

- A. Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based elastomeric tape with a solids content of 100 percent; nonstaining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; packaged on rolls with a release paper backing; and complying with ASTM C 1281 and AAMA 800 for products indicated below:
1. AAMA 804.3 tape, where indicated.
 2. AAMA 806.3 tape, for glazing applications in which tape is subject to continuous pressure.
 3. AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure.
- B. Expanded Cellular Glazing Tapes: Closed-cell, PVC foam tapes; factory coated with adhesive on both surfaces; packaged on rolls with release liner protecting adhesive; and complying with AAMA 800 for the following types:
1. Type 1, for glazing applications in which tape acts as the primary sealant.

2.3 MISCELLANEOUS GLAZING MATERIALS

- A. General: Provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.
- B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.
- C. Setting Blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, plus or minus 5.
- D. Spacers: Elastomeric blocks or continuous extrusions with a Shore, Type A durometer hardness required by glass manufacturer to maintain glass lites in place for installation indicated.
- E. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).
- F. Cylindrical Glazing Sealant Backing: ASTM C 1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.
- G. Perimeter Insulation for Fire-Resistive Glazing: Identical to product used in test assembly to obtain fire-resistance rating.

2.4 FABRICATION OF GLAZING UNITS

- A. Fabricate glazing units in sizes required to glaze openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing publications, to comply with system performance requirements.
- B. Clean-cut or flat-grind vertical edges of butt-glazed monolithic lites in a manner that produces square edges with slight kerfs at junctions with outdoor and indoor faces.

Grind smooth and polish exposed glass edges and corners.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine framing glazing, with Installer present, for compliance with the following:
 - 1. Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.
 - 2. Presence and functioning of weep system.
 - 3. Minimum required face or edge clearances.
 - 4. Effective sealing between joints of glass-framing members.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.

3.3 GLAZING, GENERAL

- A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.
- B. Glazing channel dimensions provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances. Adjust as required by Project conditions during installation.
- C. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.
- D. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction sealant-substrate testing.
- E. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.
- F. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.
- G. Provide spacers for glass lites where length plus width is larger than 50 inches as follows:
 - 1. Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.
 - 2. Provide 1/8-inch minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.
- H. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.

- I. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.

3.4 TAPE GLAZING

- A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.
- B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.
- C. Cover vertical framing joints by applying tapes to heads and sills first and then to jambs. Cover horizontal framing joints by applying tapes to jambs and then to heads and sills.
- D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.
- E. Do not remove release paper from tape until just before each glazing unit is installed.
- F. Apply heel bead of elastomeric sealant.
- G. Center glass lites in openings on setting blocks and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.
- H. Apply cap bead of elastomeric sealant over exposed edge of tape.

3.5 CLEANING AND PROTECTION

- A. Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels, and clean surfaces.
- B. Protect glass from contact with contaminating substances resulting from construction operations, including weld splatter. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended by glass manufacturer.
- C. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains; remove as recommended in writing by glass manufacturer.
- D. Remove and replace glass that is broken, chipped, cracked, or abraded or that is damaged from natural causes, accidents, and vandalism, during construction period.
- E. Wash glass on both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended in writing by glass manufacturer.

3.6 MONOLITHIC FLOAT-GLASS UNITS

- A. Glass Type 1 (Interior): Clear fully tempered float glass.
 1. Thickness: 6.0 mm (1/4 inch).
 2. Provide safety glazing labeling.

3.7 INSULATING-GLASS UNITS

- A. Glass Type: Insulating-Glass Units for use in interior aluminum framed entrances and

storefronts.

1. Overall Unit Thickness and Thickness of Each Lite: 1-inch unit thickness and 1/4-inch each lite.
2. Interspace Content: Air.
3. Indoor Lite: Ultraclear fully tempered float glass.
4. Provide safety glazing labeling.

END OF SECTION

SECTION 09 50 00
ACOUSTICAL CEILINGS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:
 - 1. Acoustical ceiling panels
 - 2. Exposed grid suspension system
 - 3. Wire hangers, fasteners, main runners, cross tees, and wall angle moldings
 - 4. Perimeter TrimAction

1.3 SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Layout and details of acoustical ceilings show locations of items that are to be coordinated with, or supported by the ceilings.

1.4 QUALITY ASSURANCE

- A. Single-Source Responsibility: Provide acoustical panel units and grid components by a single manufacturer.
 - 1. Fire Performance Characteristics: Identify acoustical ceiling components with appropriate markings of applicable testing and inspecting organization.
 - 2. Surface Burning Characteristics: As follows, tested per ASTM E 84 and complying with ASTM E 1264 Classification.
 - 3. Fire Resistance: As follows tested per ASTM E119 and listed in the appropriate floor or roof design in the Underwriters Laboratories Fire Resistance Directory
- B. Acoustical Panels: As with other architectural features located at the ceiling, may obstruct or skew the planned fire sprinkler water distribution pattern through possibly delay or accelerate the activation of the sprinkler or fire detection systems by channeling heat from a fire either toward or away from the device. Designers and installers are advised to consult a fire protection engineer, NFPA 13, or their local codes for guidance where automatic fire detection and suppression systems are present.
- C. Coordination of Work: Coordinate acoustical ceiling work with installers of related work including, but not limited to building insulation, gypsum board, light fixtures, mechanical systems, electrical systems, and sprinklers..

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver acoustical ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.
- B. Before installing acoustical ceiling units, permit them to reach room temperature and a stabilized

moisture content.

- C. Handle acoustical ceiling units carefully to avoid chipping edges or damaged units in any way.

1.6 WARRANTY

- A. Acoustical Panel: Submit a written warranty executed by the manufacturer, agreeing to repair or replace panels that fail within the warranty period. Failures include, but are not limited to the following:

- 1. Acoustical Panels: Sagging and warping
- 2. Grid System: Rusting and manufacturer's defects

- B. Warranty Period:

- 1. Acoustical panels: Ten (10) years from date of substantial completion
- 2. Suspension: Ten (10) years from date of substantial completion
- 3. Ceiling System: Thirty (30) years from date of substantial completion

- C. The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

1.7 MAINTENANCE

- A. Extra Materials: Deliver extra materials to Owner. Furnish extra materials described below that match products installed. Packaged with protective covering for storage and identified with appropriate labels.

- 1. Acoustical Ceiling Units: Furnish quality of full-size units equal to 5.0 percent of amount installed.
- 2. Exposed Suspension System Components: Furnish quantity of each exposed suspension component equal to 2.0 percent of amount installed.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Ceiling Panels:

- 1. Armstrong World Industries, Inc.

- B. Suspension Systems:

- 1. Armstrong World Industries, Inc.

- C. Perimeter Systems

- 1. Armstrong World Industries, Inc.

2.2 ACOUSTICAL CEILING UNITS

- A. Acoustical Panels Type AP

- 1. Surface Texture: Medium
- 2. Composition: Mineral Fiber
- 3. Color: White
- 4. Size: 24 in x 48 in or 24 in x 24 in, as indicated in drawings.
- 5. Edge Profile: Square Lay-In 15/16 in for interface with PRELUDE ML 15/16" Exposed Tee

- grid.
6. Noise Reduction Coefficient(NRC): ASTM C 423; Classified with UL label on product carton 0.50
 7. Ceiling Attenuation Class (CAC) : ASTM C 1414; Classified with UL label on product carton 35
 8. Sabin:N/A
 9. Articulation Class (AC):
 10. Flame Spread: ASTM E 1264; Class A (UL)
 11. Light Reflectance (LR) White Panel: ASTM E 1477; 0.87
 12. Dimensional Stability: HumiGuard Plus
 13. Acceptable Product: ARMATUFF, 860 as manufactured by Armstrong World Industries

2.3 METAL SUSPENSION SYSTEMS

A. Components:

1. Main beams and cross tees, base metal and end detail, fabricated from commercial quality hot dipped galvanized steel complying with ASTM A 653. Main beams and cross tees are double-web steel construction with type exposed flange design. Exposed surfaces chemically cleansed, capping prefinished galvanized steel in baked polyester paint. Main beams and cross tees shall have rotary stitching.
 - a. Structural Classification: ASTM C 635 Heavy Duty duty
 - b. Color: White and match the actual color of the selected ceiling tile, unless noted otherwise.
 - c. Sustainability: Environmental Product Declaration (EPD), Health Product Declaration (HPD)
 - d. Acceptable Product: PRELUDE ML 15/16" Exposed Tee as manufactured by Armstrong World Industries

B. Attachment Devices: Size for five times design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.

C. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft annealed, with a yield stress load of at least time three design load, but not less than 12 gauge.

D. Edge Moldings and Trim:

1. 7809 12ft Hemmed Angle Molding

E. Accessories:

1. 7904 15/16" Flush Act. to Drywall Transition Molding

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not proceed with installation until all wet work such as concrete, terrazzo, plastering and painting has been completed and thoroughly dried out, unless expressly permitted by manufacturer's printed recommendations.

3.2 PREPARATION

- A. Coordinate panel layout with mechanical and electrical fixtures.
- B. Coordination: Furnish layouts for preset inserts, clips, and other ceiling anchors whose installation is specified in other sections.

3.3 INSTALLATION, GENERAL

- A. Follow manufacturer installation instructions.
- B. Install suspension system and panels in accordance with the manufacturer's instructions, and in compliance with ASTM C 636 and with the authorities having jurisdiction.
- C. Suspend main beam from overhead construction with hanger wires spaced 4'-0" on center along the length of the main runner. Install hanger wires plumb and straight.
- D. Install wall moldings at intersection of suspended ceiling and vertical surfaces. Miter corners where wall moldings intersect or install corner caps.
- E. For reveal edge panels: Cut and reveal or rabbet edges of ceiling panels at border areas and vertical surfaces.
- F. Install acoustical panels in coordination with suspended system, with edges resting on flanges of main runner and cross tees. Cut and fit panels neatly against abutting surfaces. Support edges by wall moldings.

3.4 ADJUSTING AND CLEANING

- A. Replace damaged and broken panels.
- B. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch up of minor finish damage. Remove any ceiling products that cannot be successfully cleaned and or repaired. Replace with attic stock or new product to eliminate evidence of damage.
- C. Before disposing of ceilings, contact the Armstrong Recycling Center at 877-276-7876, select option #1 then #8 to review with a consultant the condition and location of building where the ceilings will be removed. The consultant will verify the condition of the material and that it meets the Armstrong requirements for recycling. The Armstrong consultant will provide assistance to facilitate the recycle of the ceiling.

END OF SECTION

SECTION 09 65 19
SOLID VINYL TILE FLOORING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Resilient Solid Vinyl Tiles/Plank Flooring.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Initial Selection: For each type of product indicated.
- C. Samples for Verification: For each type of product indicated, in manufacturer's standard-size samples of each resilient product color, texture, and pattern required.

1.4 QUALITY ASSURANCE

- A. Installation Qualification: Contractors for floor covering installation should be experienced in managing commercial flooring projects and provide professional installers, qualified to install the various flooring materials specified.

1.5 PROJECT CONDITIONS

- A. Install resilient products after other finishing operations, including painting, have been completed.
- B. Maintain ambient temperatures within range recommended by manufacturer, but not less than 65 deg F (18 deg C) or more than 85 deg F (29 deg C) in spaces to receive resilient products during the following time periods:
 - 1. 48 hours before installation.
 - 2. During installation.
 - 3. 48 hours after installation.
- C. Maintain the ambient relative humidity between 40% and 60% during installation.

PART 2 PRODUCTS

2.1 IQ HOMOGENEOUS RESILIENT TILE FLOORING <INSERT DRAWING DESIGNATION>

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Tarkett; iQ ; or approved equal.
- B. Tile Standard: ASTM F 1700, Class 1, Type A, Smooth surface

SOLID VINYL TILE FLOORING

- C. Thickness/Wearlayer: 0.080 inch.
- D. For size specify: 24 inches by 24 inches
- E. Colors and Patterns: Coordinate color with Architect to match site sample.
- F. Test data:
 - 1. Total thickness (ASTM F386): 0.080 inches (2 mm)
 - 2. Flexibility (ASTM F137): Passes
 - 3. Chemical Resistance (ASTM f925): Passes
 - 4. Static Load Limit (ASTM F970): 250 psi, $\leq 0.005''$
 - 5. Resistance to Heat (ASTM F1514): $\Delta E \leq 8$
 - 6. Resistance to Light (ASTM F1515): $\Delta E \leq 8$
 - 7. Size, Tolerance (ASTM F2055): Passes
 - 8. Static Coefficient of Friction (ASTM D 2047): ≥ 0.5 SCOF
 - 9. Flammability (ASTM E648, Critical Radiant Flux): Class 1 (≥ 0.45 W/cm²)
 - 10. Limited Commercial Warranty: 10 years

2.2 INSTALLATION MATERIALS

- A. Trowelable Leveling and Patching Compounds: Latex-modified, Portland cement based or blended hydraulic-cement-based formulation.
- B. Adhesives: As recommended by manufacturer to meet site conditions
 - 1. Tarkett 926 Resilient Flooring Adhesive

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the work.
- B. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Prepare substrates according to Tarkett written instructions to ensure proper adhesion of Resilient Flooring.
 - 1. Prepare concrete substrates in accordance with ASTM F 710.
 - a. Concrete floors must be free of dust, solvent, paint, wax, oil, grease, residual adhesive, adhesive removers, film-forming curing compounds, silicate penetrating curing compounds, sealing, hardening or parting compounds, alkaline salts, excessive carbonation or laitence, mold, mildew, and other foreign materials that may affect dissipation rate of moisture from the concrete, discoloration or adhesive bonding.
 - b. Mechanically remove contamination on the substrate that may cause damage to the resilient flooring material. Permanent and non-permanent markers, pens, crayons, paint, etc., must not be used to write on the back of the flooring material or used to mark the substrate as they could bleed through and stain the flooring material.

- c. Perform moisture testing as recommended by manufacturer. Proceed with installation only after substrates have been tested and meet the minimum requirements from the manufacturer in accordance with ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride or ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
 - d. A pH test for alkalinity must be conducted on the concrete floor prior to installation with results between 7 and 9. If the test results are not within the acceptable range, then installation must not proceed until the problem has been corrected.
- B. Fill cracks, holes, depressions and irregularities in the substrate with good quality Portland cement based underlayment leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.
- C. Floor covering shall not be installed over expansion joints.
- D. Do not install resilient products until they are same temperature as the space where they are to be installed.
- 1. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.
- E. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation.

3.3 RESILIENT TILE FLOORING INSTALLATION

- A. Comply with manufacturer's written instructions for installing resilient TILE flooring.
- B. Resilient TILE Flooring:
- 1. Install with adhesive specified for the site conditions and follow adhesive label for proper use.
 - 2. Install rolls in sequential order following roll numbers on the labels.
 - 3. Reverse non-pattern TILES as referenced in the manufacturer's Instructions.
 - 4. Roll the flooring in both directions using a 100 pound three-section roller.
 - 5. Vinyl TILE flooring must be welded.

Note: It is recommended to heat weld seams to provide a more sterile and water tight seam.

3.4 CLEANING AND PROTECTION

- A. Comply with manufacturer's written instructions for cleaning and protection of resilient products.
- B. Perform the following operations immediately after completing resilient product installation:
- 1. Remove adhesive and other blemishes from exposed surfaces.
 - 2. Sweep and vacuum surfaces thoroughly.
 - 3. Damp-mop surfaces to remove marks and soil.
- C. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.
- 1. No traffic for 24 hours after installation.
 - 2. No heavy traffic, rolling loads, or furniture placement for 72 hours after installation.
- D. Wait 72 hours after installation before performing initial cleaning.

SOLID VINYL TILE FLOORING

- E. A regular maintenance program must be started after the initial cleaning.

END OF SECTION

SECTION 10 59 10

ALUMINUM COUNTER SUPPORT BRACKETS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following: Wall mounted, heavy duty, welded aluminum brackets for supporting counter tops.

1.3 ACTION SUBMITTALS

- A. Provide in accordance with Section 01 33 00 - Submittal Procedures:
 - 1. Product data for support brackets.
 - 2. Shop drawings indicating dimensions and installation details.
 - 3. Installation instructions.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Basis of design: Rangine Corporation, 330 Reservoir Street, Needham, Massachusetts 02494; 800-826-6006; www.rakks.com.
- B. Requests to use equivalent products of other manufacturers shall be submitted in accordance with Section 01 25 00 - Product Substitution Procedures.

2.2 MATERIALS

- A. Material: Fabricate components from extruded aluminum sections complying with ASTM B221, 6063-T5 alloy and temper.
- B. Factory applied finishes: Exposed aluminum surfaces shall be free of scratches and other serious blemishes and be factory finished with aluminum mill finish.

2.3 WELDED ALUMINUM BRACKETS

- A. Type: Support brackets fabricated by welding miter cut extruded aluminum sections, grinding and deburring sharp edges and welds, drilling holes for field attachment, and factory finishing.
- B. Surface mounted counter brackets: L-shaped bracket fabricated from aluminum T sections designed for supporting 24 inches deep.
- C. Load capacity per bracket: 450 pounds.

PART 3 EXECUTION

3.1 COORDINATION

- A. Coordinate provision of support brackets with design and fabrication of counter tops to be

supported to ensure compatibility of dimensions and load capacity.

- B. Coordinate requirements for stud spacing, blocking, and auxiliary structural supports to ensure adequate means for installation and anchorage of support brackets.

3.2 INSTALLATION

- A. Install support brackets in accordance with reviewed shop drawings and manufacturer's installation instructions.
- B. Install brackets at locations and heights indicated on Drawings. Verify locations in field with Architect.
- C. Install brackets rigidly to blocking so that they are secure, plumb, and aligned.
- D. Install with fasteners of type, size, and quantity as supplied or recommended by bracket manufacturer for type of application and substrate.

END OF SECTION