



City of Worcester MASSACHUSETTS

Worcester Senior Center Entrance Door Replacement

128 Providence Street, Worcester, Massachusetts 01604

Specifications

August 20, 2026

OWNER

City of Worcester, MA
City Hall, 455 Main Street, Worcester, MA 01608

DESIGNER

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108 Grove Street, Suite 300, Worcester, MA 01605

Prepared by:



JOB #2506

PROJECT MANUAL AND SPECIFICATIONS

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BY OWNER

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SECTION 01 01 00

SUMMARY OF WORK

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

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

1.02 DESCRIPTION

A. SCOPE OF THE WORK

1. The Senior Center is an existing four-story brick building. The front portion was constructed in or about 1923, the rear four-story portion was added in/about 1954, and the very rear one-story section was renovated in 1998 as the senior center. The building is on the MACRIS List # WOR.2378, and application was applied for by the city for a demolition delay waiver, which will be issued prior to the work beginning.
2. The Senior Center occupies the entire first floor and part of the second floor. The second and third floors are occupied by various tenants. The fourth floor is unoccupied. The building will remain completely occupied throughout the construction. The work must be phased and coordinated by this Contractor in conjunction with the occupancy. All stairs and exits shall be maintained at all times by this contractor during the building's normally occupied hours, 7:00 am-5:00 pm, (Custodial staff is in the building from 6:30 AM through 5:30 PM) Monday through Friday.
4. The Owner will maintain security and control of the building and shall lock and unlock the building during the normal work hours between the hours of 6:30 am and 5:30 pm. Should the Contractor wish to work beyond these hours, on Saturdays or on holidays, they shall arrange for the Custodian to open and be present.
5. The Door contractor may be the General Contractor.
6. The Contractor must be fully mobilized and have begun the work within 5 days after contract and be complete all work no later than XX XX, XXXX, with final billing and payment made before XX XX, XXXX, as part of the Grant requirements. Within 5 days after award of Contract, the Contractor shall provide a detailed construction work plan and schedule for review, and acceptance by the Owner, and upon work commencing shall meet with the Owner's representative on a weekly basis to review activities, restrictions and resolve any issues. Schedule shall include the installation and maintenance of all fences and protective measures, phasing of each area, materials loading and all key items required through the project's completion.

7. The area adjacent to the building at the parking lot is available for the Contractor to install a dumpster and for storage of materials. Contractor general parking and vehicle access is allowed on the grounds during occupied hours, at locations at the far end of the parking lot as designated.
8. The Contractor must install and maintain a temporary barrier around hoisting and storage areas, and suitable overhead protection as required.
9. The 1923 building roof is unsafe at the interior of balconies; Contractor to establish barriers to so there is no travel at these areas.
10. The Project Work consists of:
 - a. Removal of the existing entrance doors, front and rear lobbies including existing caulking and preparation of the existing openings and surrounding substrate and installation of new entrance doors, caulking and sealants.
 - b. Provide all required weather protection.
 - c. Install, maintain and remove all temporary facilities, temporary toilets, controls, temporary access, temporary lighting and power connections as required for the work. Power is available to the Contractor only as it is presently available on site.
 - d. Installation and removal of all temporary protectives required for the work.
 - e. Removal and cleanup at all areas of the work.
 - f. Contractor shall provide all work indicated on drawings, A0-Cover Sheet, A1-Plans, RCP's & Door Schedule, and A2-Elevations. There is a Matterport link of the existing area for general review. Contractor to visit the site to review.
 - g. Work shall also include all work specified herein and as typically required or inferred for work of this scope and as required for a complete installation.

1.03 QUALITY ASSURANCE

- A. Requirements of Regulatory Agencies; perform demolition work in accordance with applicable rules, regulations, codes, and ordinances of local, state and federal authorities.
- B. Obtain and pay for necessary building permits, licenses and certificates and give notices as required during the performance of the Work.
- C. Shop drawings shall be submitted electronically, and the contractor shall maintain a log of all shop drawings and approvals. Provide 2 copies of shop drawings and literature for the owner. Review with facilities.
- D. Provide all Closeout documents including final acceptance, warranties, guaranties and bonds.

PART 3 - EXECUTION

3.01 PREPARATION AND PROTECTION

- A. The building will be occupied at all times during this contract. Work may be performed during occupied hours; disruptive work must be kept to a minimum and be scheduled in advance.
- B. The contractor to coordinate the work for the entrances, adding temporary signage to other building exits. This work to be done in stages, the front entrance done and completed, then the rear entrance thereafter.
- C. Provide, erect and maintain, platforms, lights, barriers, weather protection, warning signs and other items as required for the protection of the workers engaged in demolition and construction operations. The Owner will endeavor to work with the contractor in the access/entrance to the building. Temporary entrance will be required for clients and staff.
- D. Provide fire protection in accordance with local fire department requirements.
- E. Do not close or obstruct the parking lot, driveways or sidewalks without the proper permit. Conduct operations with minimum traffic interference.
- F. Do not obstruct any exits or access to the building at any time.
- G. Make such explorations and probes as are necessary to ascertain any required protective measures before proceeding with demolition and removal work.
- H. Provide and maintain temporary protection of the existing structure designated to remain where demolition and removal work is being done, connections made, materials handled or equipment moved, including but not limited to the installation of the new diagonal truss members.
- I. Remove from the Owner's property and legally dispose of materials or items demolished.
- J. Do not overload any floors, roofs or structure with storage, materials, staging and shoring loads.
- K. Vacuum/broom clean all areas work and site at the completion of operations. Clean up daily all areas of operation.

3.02 EXISTING CONDITIONS PHOTOGRAPHS

Refer to the drawings for link to the Matterport 3d model of the existing conditions. This is for general review only; contractors are to review the actual site and conditions.

End of Section

SECTION 01 01 50

CONTROL OF SITE WORK AND MATERIALS

PART 1 GENERAL

1.01 GENERAL PROVISIONS

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

1.02 SCOPE

- A. This section is intended to provide information on topics which are not necessarily mentioned elsewhere in the Contract Documents as follows:

1. Hauling, Handling and Storage of Materials
2. Maintenance of Neighborhood Traffic
3. Care and Protection of Property
5. Rejected Materials and Defective Work
6. Sanitary Regulations
7. Safety and Health Regulations
8. Site Investigation
9. Hazardous Waste
10. Local and Regional Regulatory Permits and Approvals
11. Parking for workers' vehicles and work areas

1.03 HAULING, HANDLING AND STORAGE OF MATERIALS

- A. The Contractor shall, at his own expense, handle and haul all materials furnished by him and shall remove any of his surplus materials at the completion of the work.
- B. The Contractor shall provide suitable and adequate storage for equipment and materials furnished by him that are liable to injury and shall be responsible for any loss of or damage to any equipment or materials by theft, breakage, or otherwise.
- C. All materials and equipment to be incorporated in the Work shall be placed so as not to injure any part of the Work or existing facilities and so that free access can be had at all times to all parts of the Work and to all public utility installations in the vicinity of the work. Materials and equipment shall be kept neatly piled and compactly stored in such location as will cause a minimum of inconvenience to public travel and adjoining owners, tenants and occupants.

- D. The Contractor shall be responsible for all damages to the work under construction during its progress and until final completion and acceptance even though partial payments have been made under the Contract.

1.04 MAINTENANCE OF TRAFFIC

- A. Unless permission to close the street is received in writing from the City of Worcester, all construction work shall be conducted so that the existing pre-construction patterns of vehicular and pedestrian traffic may be maintained at all times.
- B. Should the Chief of Police deem it necessary, uniformed officers will be assigned to direct traffic. The Contractor shall make all arrangements in obtaining and compensating uniformed officers required during the construction of work in the public streets.
- C. The Contractor shall at his own expense, as directed by the Police Traffic Control/Safety Officer, provide and erect acceptable barricades, barrier fences, traffic signs, and all other traffic devices not specifically covered in a bid item, to protect the work from traffic, pedestrians, and animals. He shall provide sufficient temporary lighting such as lanterns/flashers (electric battery operated) or other approved illuminated traffic signs and devices to afford adequate protection to the traveling public, at no additional cost to the Owner.
- E. The intent of policing is to ensure public safety by direction of traffic. Police officers are not to serve as watchmen to protect the Contractor's equipment and materials.
- F. Nothing contained herein shall be construed as relieving the Contractor of any of his responsibilities for protection of persons and property under the terms of the Contract.

1.05 CARE AND PROTECTION OF PROPERTY AND TREE PROTECTION

- A. The Contractor shall be responsible for the preservation of all public and private property, and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the Contractor, such property shall be promptly restored by the Contractor, at his expense, to a condition similar or equal to that existing before the damage was done, to the satisfaction of the Owner.

1.06 USE OF PREMISES

- A. The right of possession of the premises and the improvements made thereon by the contractor shall remain at all times with the Owner. The Contractor's right to entry and the use thereof arises solely from the permission granted by the Owner under the Contract Documents.
- B. The Contractor shall maintain any and all access into the buildings at all times for the duration of the project.
- C. The owner will dedicate a few parking spaces at the rear lot for the contractors use for dumpster and materials storage.

1.07 PROTECTION AND RELOCATION OF EXISTING STRUCTURES AND UTILITIES

- A. All existing buildings, utilities, pipes, poles, wires fences, curbs, property line markers and other structures which the City decides must be preserved in place without being temporarily or permanently relocated, shall be carefully supported and protected from damage by the contractor. Should such property be damaged, it shall be restored by the Contractor, at no additional cost to the Owner.
- B. Services to buildings shall be maintained, and all costs or charges resulting from damage thereto shall be paid by Contractor.
- C. On paved surfaces the Contractor shall not use or operate any power-operated equipment with treads or wheels which are shaped so as to cut or otherwise damage such surfaces.
- D. All property damaged by the Contractor's operations shall be restored to a condition at least equal to that in which it was found immediately before work was begun and to the satisfaction of the Owner. Suitable materials and methods shall be used for such restoration.
- E. Restoration of existing property and structures shall be carried out as promptly as practicable and shall not be left until the end of the construction period.

1.08 REJECTED MATERIALS AND DEFECTIVE WORK

- A. Materials furnished by the Contractor and condemned by the Architect as unsuitable or not in conformity with the specifications shall forthwith be removed from the work by the Contractor and shall not be made use of elsewhere in the work.
- B. Any errors, defects or omissions in the execution of the work or in the materials furnished by the Contractor, even though they may have been passed or overlooked or have appeared after the completion of the work, discovered at any time before the final payment is made hereunder, shall be forthwith rectified and made good by and at the expense of the Contractor and in a manner satisfactory to the Architect.
- C. The Contractor shall reimburse the Owner for any expense, losses or damages incurred in consequence of any defect, error, omission or act of the Contractor or his employees, as determined by the Architect, occurring previous to the final payment.

1.09 SANITARY REGULATIONS

- A. Sanitary conveniences for the use of all persons employed on the work, properly screened from public observation, shall be provided in sufficient numbers in such manner and at such locations as may be approved. The contents shall be removed and disposed of in a satisfactory manner as the occasion requires. The Contractor shall rigorously prohibit the committance of nuisances within, on or about the work. Any employees found violating these provisions shall be discharged and not again employed on the work without the written consent of the Architect. The sanitary conveniences specified above shall be the obligation and responsibility of the Contractor.

1.10 SAFETY AND HEALTH REGULATIONS

- A. This project is subject to the Safety and Health regulations of the U.S. Department of Labor set forth in 29 CFR, Part 1926, and to the Massachusetts Department of Labor and Industries, Division of Industrial Safety "Rules and Regulations for the Prevention of Accidents in Construction Operations (454 CMR 10.0 et. seq.)." Contractors shall be familiar with the requirements of these regulations.

1.11 SITE INVESTIGATION

- A. The Contractor acknowledges that he has satisfied himself as to the conditions existing at the site of the work, the type of equipment required to perform this work, the quality and quantity of the materials furnished insofar as this information is reasonably ascertainable from an inspection of the site, as well as from information presented by the drawings and specifications made a part of this contract. Any failure of the Contractor to acquaint himself with available information will not relieve him from the responsibility for estimating properly the difficulty or cost of successfully performing the work. The Owner or Architect and Sub-Consultants assume no responsibility for any conclusion or interpretation made by the Contractor on the basis of the information made available by the Owner.

1.12 HAZARDOUS WASTE

- A. Should the Contractor, while performing work under this contract, uncover hazardous materials, as defined in Massachusetts Hazardous Waste Regulations 310 CMR 30.00, he shall immediately notify the Owner. The Contractor is not, and has no authority to act as, a handler, generator, operator or disposer of hazardous or toxic substances found or identified at the site, and the Owner shall undertake all such functions.

1.13 PERMITS

- A. The Contractor shall obtain and pay for all permits required, as defined under the Contract Documents.
- B. The Contractor shall perform the work in accordance with the Contract Documents, and any applicable municipal requirements; the Contractor shall pay for any additional fees required for these permits, such as inspection fees.

PART 2 PRODUCTS - Not Used.

PART 3 EXECUTION - Not Used.

End of Section

SECTION 01 23 00

ALTERNATES

PART 1 GENERAL

1.01 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 0 AND 1 - GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.

1.02 DESCRIPTION OF WORK

- A. Definition: "Alternates" are alternate products, materials, equipment, systems, methods, units of work or major elements of the construction, which may, at the Owner's option and under the terms established by the Contract or Agreement, be selected for the work in lieu of the corresponding requirements of the Contract Documents.
- B. Alternate Requirements: A Schedule of Add Alternates is included at the end of this Section. Each alternate is defined using abbreviated language, recognizing that the Contract Documents define the requirements. Coordinate related work to ensure that work affected by each alternate is complete and properly interfaced with work of each selected alternate.
- C. Provide written proposals for each add alternate on the Form for Bid for Owner's consideration. Each proposal amount shall include the entire cost of the alternate portion of the work including overhead, profit, taxes, insurance, and other costs including cost of interfacing and coordinating the alternate with related and adjacent work.
- D. The Contractor and Subcontractors shall be responsible for examining the scope of each Alternate generally defined herein and for recognizing modifications to the work caused by the Alternates and including the cost thereof in the bid price.
- E. The Owner will accept or reject each Add Alternate at the time of Contract Award.
- F. The Alternates will be accepted by their numerical order.

1.03 DESCRIPTION OF ALTERNATES

Alternate No. 1	Aluminum Framing System Provide and install Aluminum Framing System as indicated in the drawings and specifications.
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PART 2 PRODUCTS – Not Used.

PART 3 EXECUTION – Not Used.

End of Section

SECTION 08 41 13

ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary conditions and Division 0 and 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. The work of this Section consists of Aluminum Framed Storefronts where shown on the Drawings, as specified herein, and for a complete and proper installation. Work includes, but is not limited to the following:
- B. Furnish and install the following:
 - 1. Demolition, disposal and preparation of the existing systems being replaced
 - 2. Prefinished interior and exterior aluminum entrance doors.
 - 3. Prefinished aluminum formed brake-metal work, closures, flashing as indicated on the Drawings and similar items, in conjunction with aluminum entrance and storefront framing.
 - 4. Metal to metal sealing of aluminum assemblies.
 - 5. Shimming and fasteners required for installation.
 - 6. All glass and glazing materials as indicated on the Drawings.
 - 7. Caulking and sealants.
 - 8. All temporary barriers, safety installations
 - 9. Building must be always maintained as secure
 - 10. Demolition, disposal and preparation of the existing aluminum storefront frame being replaced at Door X02 (Alternate No. 1)
 - 11. Prefinished aluminum framing system of the types specified herein, all required integral steel reinforcing, bracing members, deflection heads, sub-sills and related accessories for the framing systems, and all angles, clips, and other items required to anchor the system to the building structure, and any prefinished aluminum formed brake-metal closures, flashings, full perimeter backer rod and sealant, or other components necessary for weathertight construction (Alternate No. 1).
- C. Alternates

Special attention is called to the fact that it shall be the responsibility of all the General and Subcontractors to thoroughly examine all the alternates and evaluate for themselves as to whether or not these alternates in any way affect their respective sections. In the event that a contractor feels that any alternate(s) do reflect a cost difference, additional or a deduction, in his bid proposal, then he shall so stipulate this sum and/or sums under the proper alternate(s) as provided for in the bid proposals. Failure to do so will in no way relieve the hereinbefore stated contractors of their responsibilities regardless of what alternate(s) are selected and no extra cost will be charged to the Owner. Refer to ALTERNATES in Section 012300 for list and description of Alternates.

D. Install the following furnished under the designated Sections:

1. Hardware furnished under Section 08 71 00 – DOOR HARDWARE.

1.3 RELATED REQUIREMENTS

A. Section 08 71 00- DOOR HARDWARE: Furnishing finish hardware for the work of this Section.

1.4 PERFORMANCE REQUIREMENTS

A. General Performance: Aluminum-framed entrance system shall withstand the effects of the following performance requirements without failure due to defective manufacture, fabrication, installation, or other defects in construction.

B. Aluminum Framed Entrance Performance Requirements:

1. Wind Loads: Provide entrance system; include anchorage, capable of withstanding wind load design pressures of 30 lbs./sq. ft. inward and 35 lbs./sq. ft. outward.
2. Air Infiltration: For single acting offset pivot or butt hung entrances in the closed and locked position, the test specimen shall be in accordance with ASTM E283 at a pressure differential of 1.57 psf (75 PA) for single and pair of doors. A single 3'-0" x 7'-0" (915 mm x 2134 mm) entrance door and frame shall not exceed 1.0 cfm/ft².

1.5 ADMINISTRATIVE REQUIREMENTS

A. Coordination:

1. General: Coordinate the work of this Section with the respective trades responsible for installing interfacing and adjoining work for proper sequence of installation, and ensure that the work performed hereunder is acceptable to such trades for installation of their work.
2. Arrange keying, and schedule delivery of keys, with Owner.

B. Sequencing:

1. Field Measurements
 - a. Take field measurements before preparation of shop drawings and fabrication, where possible, to ensure proper fitting of Work.
 - b. Allow for adjustments within specified tolerances wherever taking of field measurements before fabrication might delay Work.

1.6 SUBMITTALS

A. Information and Review Submittals: Submit the following:

1. Literature: Manufacturer's product data sheets, specifications, fabrication methods, finishes, performance data, and installation instructions for each item furnished hereunder.

- a. Provide additional information for glazing and sealant products; including chemical, functional, and environmental characteristics, size limitations, special application requirements.
2. Sample Warranties: Provide sample copies of manufacturers' actual warranties for all materials to be furnished under this Section, clearly defining all terms, conditions, and time periods for the coverage thereof.
3. Certifications:
 - a. Sealed glass unit manufacturer's certificate indicating conformance with standards specified herein.
4. Shop drawings:
 - a. 1/4-inch scale elevations and plans
 - 1) Indicate all types and thickness of glass.
5. Selection samples:
 - a. Custom color as required to match existing finish and appearance.

1.7 QUALITY ASSURANCE

- A. Installer, with a minimum of 5 years documented experience demonstrating previously successful work of the type specified herein, and approved by product manufacturer.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Protect pre-finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings which bond when exposed to sunlight or weather.
- B. Store framing and glazing materials in manner to keep them dry, protected from weather, direct sunlight, surface contamination, corrosion and damage from construction traffic and other causes.

1.9 ENVIRONMENTAL REQUIREMENTS

- A. Do not install sealant when ambient temperature is less than 40 degrees Fahrenheit.
- B. Maintain this minimum temperature during and 48 hours after installation of sealant.

1.10 FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated on shop drawings.

1.11 SEQUENCING AND SCHEDULING

- A. Coordinate the work of this Section with the respective trades responsible for installing interfacing work, and ensure that the work performed hereunder is acceptable to such trades for the installation of their work.

- B. Do not order or deliver any materials until all submittals, required hereunder, have been received and approved by the Architect.
- C. Arrange keying, and schedule delivery of keys, with Owner.

1.12 WARRANTY

- A. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty
 - 1. Warranty Period: (2) years from Date of Substantial Completion of the project, provided however that the Limited Warranty shall begin in no event later than (6) months from the date of shipment by manufacturer.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer: To establish a standard of quality, design and function desired, Drawings and specifications have been based on Kawneer Manufacturing Company, Norcross, GA.
- B. Subject to compliance with the requirements specified herein, manufacturers offering products which may be incorporated in the work include the following, or approved equal:
 - 1. Kawneer Manufacturing Company, Norcross, GA
 - 2. EFCO Corp., Monett, MO
 - 3. YKK AP America Inc., Austell, GA

2.2 ENTRANCE DOORS

- A. Aluminum doors shall be thermally broken extruded aluminum, pre-glazed, single acting, hinged doors, wide stile-and-rail type. Subject to compliance with the requirements specified herein, products may be incorporated in the work include the following:
 - 1. Kawneer model "500 Insulclad" door
 - 2. EFCO model "D502 (TS) ThermaStile" door
 - 3. YKK model "50XT Megatherm" door
- B. Entrance doors:
 - 1. Wall thickness of stile and rail extrusions shall not be less than 0.125 inches.
 - 2. Wall thickness of glazing stops shall not be less than 0.050 inches.
 - 3. Thickness of door: 2 inches.
 - 4. Width of door stiles and rails: As indicated on the Drawings
 - 5. Glazing gaskets shall be either EPDM elastomeric extrusions or a thermoplastic elastomer

6. Provide adjustable glass jacks to help center the glass in the door opening.
7. Fabricate doors with hairline joints at corners of stiles and rails; provide heavy concealed reinforcement brackets secured with screws and welded.

2.3 MATERIALS

- A. Aluminum Extrusions: Alloy and temper recommended by aluminum-framed entrance door manufacturer for strength, corrosion resistance, and application of required finish and not less than 0.090" (2.3 mm) wall thickness at any location for the main frame and door leaf members.
- B. Fasteners: Aluminum, nonmagnetic stainless steel or other materials to be non-corrosive and compatible with aluminum-framed entrance door members, trim hardware, anchors, and other components.
- C. Anchors, Clips, and Accessories: Aluminum, nonmagnetic stainless steel or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions or other suitable zinc coating; provide sufficient strength to withstand design pressure indicated.
- D. Reinforcing Members: Aluminum, nonmagnetic stainless steel or nickel/chrome-plated steel complying with ASTM B 456 for Type SC 3 severe service conditions, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions or other suitable zinc coating; provide sufficient strength to withstand design pressure indicated.
 1. Weather Seals: Provide weather stripping with integral barrier fin or fins of semi-rigid, polypropylene sheet or polypropylene-coated material. Comply with AAMA 701/702.

2.4 FABRICATION

- A. Fabricate aluminum-framed entrance doors in sizes indicated. Include a complete system for assembling components and anchoring doors.
- B. Fabricate aluminum-framed glass doors that are reglazable without dismantling perimeter framing.
 1. Door construction shall consist of mechanical clip fastening, SIGMA deep penetration plug welds and 1-1/8" (29 mm) long fillet welds inside and outside of all four corners. Glazing stops shall be hook-in type with EPDM glazing gaskets reinforced with non-stretchable cord.
 2. Accurately fit and secure joints and corners. Make joints hairline in appearance.
 3. Prepare components with internal reinforcement for door hardware.
 4. Arrange fasteners and attachments to conceal from view.
- C. Weather-stripping: Provide weather-stripping locked into extruded grooves in door panels or frames as indicated on manufacturer's drawings and details.

2.5 ALUMINUM FINISHES

- A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
- B. Factory Finishing
 1. Match existing

2.6 HARDWARE

- A. Hardware shall be furnished under Section 08 71 00 – DOOR HARDWARE, conforming to governing laws and building codes.
 - 1. Install all reinforcing required and prepare doors for finished hardware specified.
- B. Thresholds, weatherstripping and door sweeps as recommended by door manufacturer.

2.7 GLASS AND GLAZING MATERIALS, TYPES AND LOCATIONS

- A. Insulated Glazing Unit
 - 1. Replacement insulated “Low-E” argon insulated clear glazing unit, thickness to match existing unit to be replaced, as indicated in the Drawings.
 - 2. Performance Requirements: Glass units shall have equal to or greater performance than the following:
 - a. Visible transmittance: 70 percent
 - b. Solar Heat Gain Coefficient (SHGC): 0.39
 - c. Light to Solar Gain (LSG): 1.79
 - d. Reflectance (Visible Out): 11 percent
 - e. Reflectance (Visible In): 12 percent
 - f. U Value (Winter/Summer): 0.24/.022
 - 3. Location: Entry 001 (North Elevation) and all new aluminum doors
- B. Tempered/Laminated Safety Glazing
 - 1. Replacement tempered/laminated clear safety glazing with 0.030 inch thick PVB layer, nominal overall thickness to match existing unit to be replaced, as indicated in the Drawings
 - 2. Location: Overhead exterior glazed canopy adjacent to Entry 001 (South Elevation), as shown in reflected ceiling plan
 - a. Re-use existing mounting method/hardware to the greatest extent possible

2.8 ALUMINUM FRAMING SYSTEM (**ALTERNATE NO. 1**)

- A. Aluminum framing system: Integrated flush glazed with thermal break. Vertical and horizontal framing members shall have screw spline construction with a nominal face width and a total depth match the existing frame to be replaced.
 - 1. Products provided by the manufacturers listed in Paragraph 2.1.B.
 - 2. Materials
 - a. Extruded Aluminum: ANSI/ASTM B221; G.S. 10A alloy, T-5 temper
 - b. Sheet Aluminum: ASTM B209; alloy for forming and finishing
 - c. Sheet Steel: ANSI/ASTM A446; galvanized
 - d. Steel Sections: ANSI/ASTM A36; shapes to suit mullion sections
 - e. Stainless Steel Sheet: ASTM A 240/A240M, Type 302/304, dead soft, fully annealed; with smooth flat surface and having 2D Finish (dull, cold rolled) having a minimum thickness as specified for the applications indicated

3. Framing Materials

- a. Provide and install all miscellaneous formed aluminum work in conjunction with the aluminum framework as detailed and to complete the work including but not limited to sills, mullion covers, closures, flashings.
- b. Sill extensions (attached to sill mullion covers) shall be custom extruded aluminum.
- c. Aluminum sections shall be of sizes and profiles indicated on the approved shop drawing details; shall present straight, sharply defined lines and arises; and shall be free from defects impairing strength, durability, or appearance.
- d. Formed flashings and closures shall be of aluminum alloy/temper 5005-H34, minimum of 0.04 inch thick, complying with ASTM B 209.
 - 1) Provide and install all miscellaneous formed aluminum work in conjunction with the aluminum framework as detailed and to complete the work including but not limited to sills, mullion covers, closures, flashings.
- e. All anchors and fasteners, including screws, nuts, bolts, rivets, and other fastening devices shall be of tempered aluminum or non-magnetic type 302/304 stainless steel, compatible with the aluminum frame members. All such devices shall be of suitable type and adequate capacity for each intended purpose. The aluminum work shall generally be constructed and erected without use of exposed fasteners. However, where exposed, the fasteners shall be finished to match the finish of the surrounding aluminum.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Inspect all surfaces and verify that they are in proper condition to receive the work of this Section.
- B. Beginning of installation means acceptance of existing project conditions.
- C. Verify wall openings and adjoining air and vapor seal materials are ready to receive work of this Section.
- D. Before proceeding with installation work, inspect all project conditions and all work of other trades to assure that all such conditions and work are suitable to satisfactorily receive the work of this Section and notify the Architect in writing of any which are not. Do not proceed further until corrective work has been completed or waived.

3.2 INSTALLATION

- A. Comply with Drawings, Shop Drawings, and manufacturer's written instructions for installing aluminum-framed entrance doors, hardware, accessories, and other components.
- B. Install aluminum-framed entrance doors level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.
- C. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

3.3 FIELD QUALITY CONTROL

- A. Manufacturer's Field Services: Upon Owner's written request, provide periodic site visit by manufacturer's field service representative.

3.4 ADJUSTING, CLEANING AND PROTECTION

- A. Clean aluminum surfaces immediately after installing aluminum-framed entrance doors. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.
- B. Clean glass immediately after installation. Comply with glass manufacturer's written recommendations for final cleaning and maintenance. Remove nonpermanent labels, and clean surfaces.
- C. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.

End of Section

SECTION 08 71 00

DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary conditions and Division 0 and 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. The work of this Section includes:

- 1. Furnishing and installation of all mechanical and electrical finish hardware necessary for all doors, and hardware as specified herein and as enumerated in hardware sets and as indicated and required by actual conditions at the building. The hardware shall include the furnishing of all necessary screws, bolts, expansion shields, drop plates, and all other devices necessary for the proper application of the hardware. Installation shall include field modification and preparation of existing doors and/or frames for new hardware being installed. Provide necessary fillers, Dutchmen, reinforcements, and fasteners for mounting new hardware and to cover existing door/frame preps.

- B. Alternates

Special attention is called to the fact that it shall be the responsibility of all the General and Subcontractors to thoroughly examine all the alternates and evaluate for themselves as to whether or not these alternates in any way affect their respective sections. In the event that a contractor feels that any alternate(s) do reflect a cost difference, additional or a deduction, in his bid proposal, then he shall so stipulate this sum and/or sums under the proper alternate(s) as provided for in the bid proposals. Failure to do so will in no way relieve the hereinbefore stated contractors of their responsibilities regardless of what alternate(s) are selected and no extra cost will be charged to the Owner. Refer to ALTER-NATES in Section 012300 for list and description of Alternates.

1.3 RELATED REQUIREMENTS

- A. Section 08 41 13 – ALUMINUM FRAMED ENTRANCES AND STOREFRONTS

1.4 REFERENCES

- A. Applicable state and local building codes and standards
- B. Fire/Life Safety

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- 1. NFPA – National Fire Protection Association
 - a. NFPA 70 – National Electrical Code
 - b. NFPA 80 – Standard for Fire Doors and Fire Windows
 - c. NFPA 101 – Life Safety Code
 - d. NFPA 105 – Smoke and Draft Control Door Assemblies
 - C. UL – Underwriters Laboratories
 - 1. UL 10B – Fire Test of Door Assemblies
 - 2. UL 10C – Standard for Fire Doors and Fire Windows
 - 3. UL 1784 – Air Leakage Tests of Door Assemblies
 - 4. UL 305 – Panic Hardware
 - D. Accessibility
 - 1. ADA – Americans with Disabilities Act
 - 2. Massachusetts Architectural Access Board – 521 CMR
 - E. DHI – Door Hardware Institute
 - 1. Sequence and Format for the Hardware Schedule
 - 2. Recommended Locations for Builders Hardware
 - F. ANSI – American National Standards Institute
 - 1. ANSI/BHMA A156.1 – A156.29, and ANSI A156.31 – Standards for Hardware and Specialties

1.5 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. General: Coordinate the work of this Section with the respective trades responsible for installing interfacing and adjoining work for proper sequence of installation, and ensure that the work performed hereunder is acceptable to such trades for installation of their work.
 - 2. Arrange keying, and schedule delivery of keys, with Owner.
- B. Sequencing:
 - 1. Field Measurements
 - a. Take field measurements before preparation of shop drawings and fabrication, where possible, to ensure proper fitting of Work.
 - b. Allow for adjustments within specified tolerances wherever taking of field measurements before fabrication might delay Work.

1.6 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 requirements. Prior to submittal, field verify existing doors and/or frames receiving new hardware and/or existing conditions receiving new openings. Verify new hardware is compatible with the existing door/frame preparation and/or existing conditions. Advise architect within the submittal package of incompatibility or issues.
- B. Catalog Cuts: Product data including manufacturers' technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
- C. Final Hardware Schedule Content: Submit schedule with hardware sets in vertical format as illustrated by the Sequence of Format for the Hardware Schedule as published by the Door and Hardware Institute. Indicate complete designations of each item required for each door opening. Include the following information:
 - 1. Door Index; include door number, heading number, and Architects hardware set number.
 - 2. Opening Lock Function Spreadsheet; list locking device and function for each opening.
 - 3. Type, style, function, size and finish of each hardware item.
 - 4. Name and manufacturer of each item.
 - 5. Fastenings and other pertinent information.
 - 6. Location of each hardware set cross-referenced to indications on Drawings.
 - 7. Explanation of all abbreviations, symbols, and codes contained in schedule.
 - 8. Mounting locations for hardware.
 - 9. Door and frame sizes and materials.
 - 10. Name and phone number for the local manufacturer's representative for each product.
 - 11. Operational Description of openings with any electrified hardware (locks, exits, electromagnetic locks, electric strikes, automatic operators, door position switches, magnetic holders or closer/holder units, and/or access control components). Operational description should include how the door will operate on egress, ingress, and/or fire/smoke alarm connection.
- D. Key Schedule: After a keying meeting between representatives of the Owner, Architect, hardware supplier, and, if requested, the representative for the lock manufacturer, provide a keying schedule, listing the levels of keying, as well as an explanation of the key system's function, the key symbols used, and the door numbers controlled. Utilize ANSI A156.28 "Recommended Practices for Keying Systems" as a guideline for nomenclature, definition, and approach for selecting the optimal keying system.

- E. Samples: If requested by the Architect, submit production sample or sample installations as requested of each type of exposed hardware unit in the finish indicated, and tagged with a full description for coordination with the schedule.
 - 1. Samples will be returned to the supplier in like-new condition. Units that are acceptable to the Architect may, after final check of operations, be incorporated into the Work, within limitations of key coordination requirements.
- F. Templates: After final approval of the hardware schedule, provide templates for doors, frames, and other work specified to be factory prepared for the installation of door hardware.
- G. Riser and Wiring Diagrams: After final approval of the hardware schedule, submit riser and wiring diagrams as required for the proper installation of complete electrical, electromechanical, and electromagnetic products.
- H. Operations and Maintenance Data: Provide in accordance with Division 1 and include the following:
 - 1. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
 - 2. Catalog pages for each product.
 - 3. Name, address, and phone number of local representative for each manufacturer.
 - 4. Parts listed for each product.
 - 5. Copy of final approved hardware schedule, edited to reflect "As Installed"
 - 6. Copy of final keying schedule.
 - 7. As installed "Wiring Diagrams" for each opening connected to power, both low voltage and 110 volts.
 - 8. One (1) complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.
 - 9. Copy of warranties including appropriate reference numbers for manufacturers to identify the project.
- I. Certificates of Compliance: Upon request of Architect or Authority Having Jurisdiction certificates of compliance for fire-rated hardware and installation instructions shall be made available.

1.7 QUALITY ASSURANCE

- A. Substitutions: Products are to be those specified to ensure a uniform basis of acceptable materials. Requests for substitutions must be made in accordance with Division 1 requirements. If proposing a substitute product, submit product data for the proposed item with product data for the specified item and indicate basis for substitution and savings to be

made. Provide sample if requested. Certain products have been selected for their unique characteristics and particular project suitability.

1. Items listed as "no substitute" shall be provided exactly as listed.
 2. Items listed with no substitute manufacturers listed have been requested by the Owner or Architect to match existing for continuity and/or future performance and maintenance standards or because there is no known equal product.
 3. If no other products are listed in a category, then "no substitute" is implied.
- B. Supplier Qualifications: A recognized architectural hardware supplier, with warehousing facilities in the Project's vicinity, that has a record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that provides a certified Architectural Hardware Consultant (AHC) available to the Owner, Architect, and Contractor, at reasonable times during the course of the Work for consultation.
- C. Single Source Responsibility: Obtain each type of hardware (latch and locksets, hinges, exit devices, closers, etc.) from a single manufacturer.
- D. Fire-Rated Openings: Provide door hardware for fire-rated openings that complies with NFPA Standard No. 80 and requirements of authorities having jurisdiction. Provide only items of door hardware that are listed and are identical to products tested by Underwriters Laboratories, Intertek Testing Services, or other testing and inspecting organizations acceptable to the authorities having jurisdiction for use on types and sizes of doors indicated in compliance with requirements of fire-rated door and door frame labels.
- E. Electronic Security Hardware: When electrified hardware is included in the hardware specification, the hardware supplier must employ an individual knowledgeable in electrified components and systems, who is capable of producing wiring diagrams and consulting as needed. Coordinate installation of the electronic security hardware with the Architect and electrical engineers and provide installation and technical data to the Architect and other related subcontractors. Upon completion of electronic security hardware installation, inspect and verify that all components are working properly.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Tag each item or package separately with identification related to the final hardware schedule, and include installation instructions with each item or package.
- B. Each article of hardware shall be individually packaged in manufacturer's original packaging.
- C. Contractor will provide secure lock-up for door hardware delivered to the Project, but not yet installed. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.
- D. Items damaged in shipment shall be replaced promptly and with proper material and paid for by whoever did the damage or caused the damage to occur.
- E. Hardware shall be handled in a manner to avoid damage, marring, or scratching. Irregularities that occur to the hardware after it has been delivered to the Project shall be

corrected, replaced, or repaired by the Contractor. Hardware shall be protected against malfunction due to paint, solvent, cleanser, or any chemical agent.

- F. No direct shipments will be allowed unless approved by the Contractor.

1.9 WARRANTY

- A. Provide manufacturer's warranties as specified in Division 1 and as follows:
1. Exit Devices: 3 years, except electrified devices, 1 year
 2. Other hardware: 1 year
- B. No liability is to be assumed where damage or faulty operation is due to improper installation, improper use, or abuse.
- C. Products judged to be defective during the warranty period shall be replaced or repaired in accordance with the manufacturer's warranty, at no additional cost to the Owner.

1.10 MAINTENANCE

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

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. The Awarding Authority has determined that certain products should be selected for their unique characteristics and particular suitability to ensure continuity of existing and future performance and maintenance standards.
- B. Approval of manufacturers other than those listed shall be in accordance with paragraph 1.7.A.
- C. Note that even though an acceptable substitute manufacturer may be listed, the product must provide all the functions and features of the specified product or it will not be approved.

Item	Scheduled Manufacturer	Acceptable Substitute
Continuous Hinges	Ives (IVE)	Best, Makar
Electric Power Transfer	Von Duprin (VON)	Dormakaba, Sargent
Exit Devices	Von Duprin (VON)	Best, Sargent
Power Supplies	Von Duprin (VON)	Dormakaba, Sargent
Electro-Mechanical Automatic Operators	LCN (LCN)	Besam, Dormakaba
Door Trim	Ives (IVE)	Trimco, Rockwood

Overhead Stops	Glynn-Johnson (GLY)	Dormakaba, Sargent
Thresholds & Weatherstrip	Zero (ZER)	National Guard, Reese
Door Contacts	Schlage Electronics (SCE)	GE, Sargent
Cylinders & Keying	Yale (YAL)	No Substitute

- D. 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.
- E. 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 Architect's approval.

2.2 MATERIALS

A. Fasteners

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

B. Continuous Hinges

1. Provide aluminum geared continuous hinges conforming to ANSI A156.25, Grade 2.
2. Provide aluminum geared continuous hinges, where specified in the hardware sets, fabricated from 6063-T6 aluminum, with 0.25-inch diameter Teflon coated stainless steel hinge pin.
3. Provide split nylon bearings at each hinge knuckle for quiet, smooth, self-lubricating operation.
4. Hinges shall be capable of supporting door weights up to 450 pounds and shall be successfully tested for 1,500,000 cycles.
5. On fire-rated doors, provide aluminum geared continuous hinges that are classified for use on rated doors by a testing agency acceptable to the authority having jurisdiction.

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6. Provide aluminum geared continuous hinges with electrified option where specified. Provide with sufficient number and gage of concealed wires to accommodate electric function of specified hardware.
 7. Install hinges with fasteners supplied by manufacturer. Hole pattern shall be symmetrically patterned.
 8. Acceptable manufacturers and/or products: Ives, Best, Makar
- C. Electric Power Transfer
1. Provide power transfer sufficient for number and gage of wires to accommodate electric function of specified hardware.
 2. Electric power transfer is to be located per manufacturer's template and UL requirements, unless interference with operation of door or other hardware items.
 3. Acceptable manufacturers and/or products: Von Duprin, Dormakaba, Sargent
- D. Exit Devices
1. Provide exit devices tested to ANSI/BHMA A156.3 Grade 1, and UL listed for Panic Exit and/or Fire Exit Hardware. Cylinders: Refer to 2.4 KEYING.
 2. 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.
 3. Touchpad shall extend a minimum of one half of the door width. Touch-pad finish shall be compatible to exit device finish. Compression springs will be used in devices, latches, and outside trims or controls, tension springs also acceptable.
 4. Devices to incorporate a deadlatching feature for security and/or for future addition of alarm kits and/or other electrical requirements.
 5. Provide manufacturer's standard strikes.
 6. Provide exit devices cut to door width and height. Locate exit devices at a height recommended by the exit device manufacturer, allowable by governing building codes, and approved by the Architect.
 7. 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.
 8. Non-fire-rated exit devices shall have cylinder dogging.
 9. Removable mullion shall be a 2 inches x 3 inches steel tube. Where scheduled, mullion shall be of a type that can be removed by use of a keyed cylinder, which is self-locking when re-installed.

10. 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 reset.
 - a. Lever style will match the lever style of the locksets.
 - b. Lever trim on doors serving rooms considered by the authority having jurisdiction to be hazardous shall have a tactile warning.
11. Exit devices for fire-rated openings shall be UL labeled fire exit hardware.
12. Provide electrical options as scheduled.
13. Acceptable manufacturers and/or products: Von Duprin 99/33 series, Best Apex series, Sargent 80 series with deadlatching.

E. Power Supplies

1. Provide power supplies, recommended and approved by the manufacturer of the electrified locking component, for the operation of electrified locks, electrified exit devices, magnetic locks, electric strikes, and other components requiring a power supply.
2. Provide the appropriate quantity of power supplies necessary for the proper operation of the electrified locking component and/or components as recommended by the manufacturer of the electrified locking components with consideration for each electrified component utilizing the power supply, the location of the power supply, and the approved wiring diagrams. Locate the power supplies as directed by the Architect.
3. Provide a power supply that is regulated and filtered 24 VDC, or as required, and UL class 2 listed.
4. Provide a power supply, where specified, with the internal capability of charging optional sealed backup batteries 24 VDC, or as required, in addition to operating the DC load.
5. Provide a power supply complete requiring only 120VAC to the fused input and shall be supplied in an enclosure.
6. Provide a power supply with emergency release terminals, where required, that allow the release of all devices upon activation of the fire alarm system complete with fire alarm input for initiating "no delay" exiting mode.
7. Acceptable manufacturers and/or products: Von Duprin PS900 series, Dormkaba DKPS series, Sargent 3500 series.

F. Electro-Mechanical Automatic Operators

1. Provide low energy automatic operators that are electro-mechanical design complying with ANSI A156.19 where automatic operators are specified.
2. The operator shall be powered with a DC motor working through reduction gears. Closing shall be spring force. No manual, or chain drive closer will be acceptable. The motor is to be off when the door is in closing mode. The door can be manually operated with the power on or off without damage to the operator. The operator shall include

variable adjustments, including opening and closing speed adjustment. Operator shall be mounted in an aluminum cover.

3. Provide units with manual off/auto/hold-open switch, push and go function to activate power operator, vestibule interface delay, electric lock delay, hold-open delay adjustable from 2 to 30 seconds, and logic terminal to interface with accessories, mats, and sensors.
4. Provide drop plates, brackets, or adapters for arms as required to suit details.
5. Provide hard-wired actuator switches for operation as specified. Actuators shall be weather-resistant type at exterior applications.
6. 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 sets. Cylinders: Refer to 2.4 KEYING.
7. Where automatic door 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 in 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 Architect. Locate the actuators, key switches, and other controls as directed by the Architect.
8. Provide units with inputs for smoke evacuation doors, where specified, which allow doors to power open upon fire alarm activation and hold open indefinitely or until fire alarm is reset, a presence detector input, which prevents a closed door from opening or a door that is fully opened from closing, a hold open toggle input, which allows remote activation for indefinite hold open and close the second time input is activated, vestibule inputs, which allow sequencing operation of two units, and a SPDT relay for interfacing with latching or locking devices.
9. Acceptable manufacturers and/or products: LCN Senior Swing, Besam Swingmaster MP, Dormkaba ED100/ED250 series.

G. Door Trim

1. Provide offset pulls of solid bar stock, diameter and length as scheduled. Where required, mount back to back with push bar.
2. Acceptable manufacturers and/or products: Ives, Trimco, Rockwood

H. Overhead Stops and Overhead Stops/Holders

1. Provide heavy duty concealed mounted overhead stop or overhead stop/holder as specified for exterior and interior vestibule single acting doors.
2. Provide heavy or medium duty and concealed or surface mounted overhead stop or overhead stop/holder for interior doors and at any doors specified. Provide medium duty surface mounted overhead stop for interior doors and at any door that swings more than 140 degrees before striking a wall, open against equipment, casework, sidelights,

and/or where conditions do not allow a wall stop or a floor stop presents a tripping hazard.

3. Where overhead holders are specified provide friction type at doors without a closer and positive type at doors with a closer.
 4. Acceptable manufacturers and/or products: Glynn-Johnson, Dormkaba, Sargent.
- I. Thresholds, Seals, Door Sweeps, Automatic Door Bottoms, and Gasketing
1. Provide thresholds, weatherstripping (including door sweeps, seals, astragals) and gasketing systems (including smoke, sound, and light) as specified and per architectural details. Match finish of other items as closely as possible. Size of thresholds shall be as follows:
 - a. Exterior Saddle Thresholds – 1/2 inch high x jamb width x door width
 - b. Interior Saddle Thresholds – 1/4 inch high x jamb width x door width
 - c. Bumper Seal Thresholds – 1/2 inch high x 5 inches wide x door width
 2. Provide door sweeps, seals, astragals, and auto door bottoms only of type where resilient or flexible seal strip is easily replaceable and readily available.
 3. Acceptable manufacturers and/or products: Zero, National Guard, Reese
- J. Door Contacts
1. Provide recessed or surface mounted type door position switches as specified.
 2. Switches shall be installed as recommended by manufacturers installation instructions and coordinated with other hardware being installed on the opening. Coordinate door and frame preparations with door and frame suppliers. If separate switches are being used with a magnetic locking device provide a minimum of 4 inches between the switch and the magnetic locking device.
3. Acceptable manufacturers and/or products: Schlage Electronics, GE-Interlogix, Sargent

2.3 FINISHES

- A. Finish of all hardware shall be US26D (BHMA 626/652) with the exceptions as follows:
1. Hinges at Exterior Doors: US32D (BHMA 630)
 2. Push Plates, Pulls, and Push Bars: US32D (BHMA 630)
 3. Overhead Stops and Holders: US32D (BHMA 630)

2.4 KEYING

- A. Provide cylinders for the Owner's Existing Yale GC keyway key system conforming to the following requirements:

1. The hardware supplier, accompanied by a qualified factory representative for the manufacturer of the cores and cylinders, shall meet with the Owner and Architect to review keying requirements and lock functions prior to ordering finish hardware.
2. Provide keys as follows:
 - a. Three key blanks per lock and/or cylinder
 - b. Two construction core control keys (if applicable)
 - c. Six construction master keys for each type (Contractor is to provide one set of construction keys to Architect)
3. Deliver all 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.
4. Approved products: Yale GC (Architect/Contractor to confirm with City if Conventional or IC Core).

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Prior to installation of any hardware, examine all doors, frames, walls and related items for conditions that would prevent proper installation of finish hardware. Correct all defects prior to proceeding with installation.

3.2 INSTALLATION

- A. Coordination:
 1. Prior to installation of hardware, schedule and hold a meeting for the purpose of instructing installers on proper installation and adjustment of finish hardware. Representatives of locks, exit devices, closers, automatic operators, and electrified hardware shall conduct training; provide at least 10 days notice to representatives. After training a letter of compliance, indicating when the training was held and who was in attendance, shall be sent to the Architect.
- B. Hardware will be installed by qualified tradesmen, skilled in the application of commercial grade hardware. For technical assistance if necessary, installers may contact the manufacturer's rep for the item in question, as listed in the hardware schedule.
- C. Mount hardware units at heights indicated in "Recommended Locations for Builders Hardware for Standard Steel Doors and Frames" by the Door and Hardware Institute.
- D. Install each hardware item in compliance with the manufacturer's instructions and recommendations, using only the fasteners provided by the manufacturer.
- E. Do not install surface mounted items until finishes have been completed on the substrate. Protect all installed hardware during painting.

- F. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
- G. Operating parts shall move freely and smoothly without binding, sticking, or excessive clearance.
- H. Existing Doors and/or Frames: Remove existing hardware being replaced, tag, and store according to contract documents. Field modify and prepare existing doors and/or frame for new hardware being installed. Provide necessary fillers, Dutchmen, reinforcements, and fasteners for mounting new hardware and to cover existing door/frame preps.
- I. Wire (including low voltage), conduit, junction boxes, and pulling of wire is by Division 26, Electrical. Electrical Contractor shall connect wire to door position switches and run wire to central room or area as directed by the Architect. Wires shall be tested and labeled with the Architects opening number. Connections to/from power supplies to electrified hardware and any connection to fire/smoke alarm system, and/or smoke evacuation system where shown on the drawings, this contractor to retain a licensed electrician to install and tear all devices and equipment under this projects scope.

3.3 ADJUSTING, CLEANING, AND DEMONSTRATING

- A. Adjust and check each operating item of hardware and each door, to insure proper operation or function of every unit. Replace units which cannot be adjusted to operate freely and smoothly.
- B. Where door hardware is installed more than one month prior to acceptance or occupancy of a space or area, return to the installation during the week prior to acceptance or occupancy and make a final check and adjustment of all hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.
- C. Clean adjacent surfaces soiled by hardware installation.
- D. Instruct Owner's personnel in the proper adjustment, lubrication, and maintenance of door hardware and hardware finishes.

3.4 FIELD QUALITY CONTROL

- A. Prior to substantial completion, the installer, accompanied by representatives of the manufacturers of locks, exit devices, closer, and any electrified hardware, shall perform the following work:
 - 1. Examine and re-adjust each item of door hardware as necessary to restore function of doors and hardware to comply with specified requirements.
 - 2. Consult with and instruct Owner's personnel in recommended additions to the maintenance procedures.
 - 3. Replace hardware items that have deteriorated or failed due to faulty design, materials, or installation of hardware units.

4. Prepare a written report of current and predictable problems of substantial nature in the performance of the hardware.
 5. At completion of project, a qualified factory representative for the manufacturers of locksets, closer, exit devices, and access control products shall arrange and hold a training session to instruct the Owner's personnel on the proper maintenance, adjustment, and/or operation of their respective products. After training a letter of compliance, indicating when the training was held and who was in attendance, shall be sent to the Architect.
- B. Clean aluminum surfaces immediately after installing aluminum-framed entrance doors. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.
 - C. Clean glass immediately after installation. Comply with glass manufacturer's written recommendations for final cleaning and maintenance. Remove nonpermanent labels, and clean surfaces.
 - D. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.

3.5 PROTECTION

- A. Provide for the proper protection of complete items of hardware until the Owner accepts the project as complete. Damaged or disfigured hardware shall be replaced or repaired by the responsible party.

3.6 HARDWARE SCHEDULE

- A. Provide hardware for each door to comply with the requirements of Section "Finish Hardware," hardware set numbers indicated in the door schedule, and in the following schedule of hardware sets.
- B. It is intended that the following schedule includes complete items of finish hardware necessary to complete the work. If a discrepancy is found in the schedule, such as a missing item, improper hardware for a frame, door or fire codes, the preamble will be the deciding document.
- C. Locksets, exit devices, and other hardware items are referenced in the Hardware Sets for series, type, and function. Refer to the preamble for special features, options, cylinders/keying, and other requirements.
- D. Hardware Sets

HEADING #01 (EXTERIOR ALUMINUM PAIR WITH ELECTRIC CONCEALED PANIC HARDWARE X AUTO OPERATOR X CARD READER)

For use on Door #(s): X01, X02

PROVIDE EACH PAIR DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	112XY TWP CON	628	IVE
1	EA	ELEC PANIC HARDWARE	SD-RX-QEL-9947-EO	626	VON
1	EA	ELEC PANIC HARDWARE	SD-RX-QEL-9947-TL-OP-376T-ER-ADJ10 24 VDC	626	VON
3	EA	MORTISE CYLINDER	AS REQUIRED	626	SCH
3	EA	PERMANENT CORE	MATCH EXISTING (BY CITY'S LOCKSMITH)	626	YAL
2	EA	OFFSET DOOR PULL	8190-0	630	IVE
1	EA	SURF. AUTO OPERATOR	9563 REG 2	ANCLR	LCN
1	EA	RELAY/DOOR SEQUENCER	8310-845	689	LCN
1	EA	ACTUATOR, TOUCH	8310-852T/8310-818T AS REQUIRED	630	LCN
1	EA	ACTUATOR, TOUCH	8310-855 (VESTIBULE)	630	LCN
1	SET	SEALS	BY ALUMINUM DOOR SUPPLIER		
2	EA	DOOR SWEEP	BY ALUMINUM DOOR SUPPLIER		
1	EA	THRESHOLD	655A-V3 (FIELD VERIFY REQUIRED WIDTH)	A	ZER
1	EA	POWER SUPPLY	PS906 900-2RS 900-2RS 120/240 VAC		VON
1	EA	CARD READER	EXISTING TO REMAIN		

ALL WIRING AND CONNECTIONS BY DIVISION 26.

OPERATIONAL DESCRIPTION:

DOORS NORMALLY CLOSED AND LOCKED. VALID CREDENTIAL TO RETRACT LATCHES, ALLOWING DOORS TO BE PULLED OPEN MANUALLY. MECHANICAL ACCESS BY KEY IN ACTIVE LEAF. FREE EGRESS THROUGH EITHER LEAF BY INSIDE PUSH BARS. LATCHES MAY ALSO BE HELD RETRACTED CONTINUOUSLY BY SIGNAL FROM THE ACCESS SYSTEM, LEAVING THE DOORS IN AN UNLOCKED PUSH/PULL CONDITION AS NEEDED. KEY DOGGING IN EXIT DEVICE TO CREATE UNLOCKED PUSH/PULL CONDITION MANUALLY.

AUTOMATIC OPERATOR TO OPEN BOTH DOORS ON SIGNAL. EXTERIOR ACTUATOR ONLY ENABLED WHEN DOORS ARE ALREADY UNLOCKED BY VALID CREDENTIAL OR SIGNAL FROM ACCESS SYSTEM. INTERIOR AND VESTIBULE ACTUATORS TO OPEN DOORS AT ALL TIMES. EXTERIOR AND INTERIOR OPERATORS TO BE WIRED FOR SEQUENTIAL OPERATION.

NOTE: ONE POWER SUPPLY TO BE SHARED BY 4-DOORS AT EACH ENTRANCE.

HEADING #02 (ALUMINUM PAIR VESTIBULE WITH ELECTRIC CONCEALED PANIC HARDWARE X AUTO OPERATOR)

For use on Door #(s): 001, 019

PROVIDE EACH PAIR DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	112XY TWP CON	628	IVE
1	EA	ELEC PANIC HARDWARE	SD-RX-QEL-9947-EO	626	VON
1	EA	ELEC PANIC HARDWARE	SD-RX-QEL-9947-TL-OP-376T-ER- ADJ10 24 VDC	626	VON
3	EA	MORTISE CYLINDER	AS REQUIRED	626	SCH
3	EA	PERMANENT CORE	MATCH EXISTING (BY CITY'S LOCKSMITH)	626	YAL
2	EA	OFFSET DOOR PULL	8190-0	626	YAL
1	EA	SURF. AUTO OPERATOR	9563 REG 2	ANCLR	LCN
1	EA	ACTUATOR, TOUCH	8310-852T/8310-818T AS REQUIRED	630	LCN
1	SET	SEALS	BY ALUMINUM DOOR SUPPLIER		
1	EA	THRESHOLD	655A-V3 (FIELD VERIFY REQUIRED WIDTH)	A	ZER

ALL WIRING AND CONNECTIONS BY DIVISION 26.

OPERATIONAL DESCRIPTION:

DOORS NORMALLY CLOSED AND LOCKED. MECHANICAL ACCESS BY KEY IN ACTIVE LEAF WHEN DOORS ARE CLOSED AND LOCKED. FREE EGRESS THROUGH EITHER LEAF BY INSIDE PUSH BARS. LATCHES MAY ALSO BE HELD RETRACTED CONTINUOUSLY BY SIGNAL FROM THE ACCESS SYSTEM, LEAVING THE DOORS IN AN UNLOCKED PUSH/PULL CONDITION AS NEEDED. KEY DOGGING IN EXIT DEVICE TO CREATE UNLOCKED PUSH/PULL CONDITION MANUALLY.

AUTOMATIC OPERATOR TO OPEN BOTH DOORS ON SIGNAL. INTERIOR AND VESTIBULE ACTUATORS TO OPEN DOORS AT ALL TIMES. EXTERIOR AND INTERIOR OPERATORS TO BE WIRED FOR SEQUENTIAL OPERATION.

NOTE: POWER SUPPLY SPECIFIED WITH EXTERIOR PAIR CAN POWER ALL 4-DEVICES AT EACH ENTRANCE.

End of Section