CUYAHOGA COMMUNITY COLLEGE

Capital & Construction
700 Carnegie Ave.
Cleveland, OH 44115

Request for Proposal

Campus West Door Replacement
#Project Number – C20227082

ISSUED:
January 10, 2024

PRE-BID MEETING DATE:
January 16, 2024 at 10:30 a.m.
Location: Tri-C District Office, Room 007
700 Carnegie Ave., Cleveland, OH 44115

BID DUE DATE:
January 31, 2024 at 12:00 Noon

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INTRODUCTION

Cuyahoga Community College District (Tri-C) is issuing this Request for Proposal (RFP) and inviting responses for the goods and/or services described in the accompanying specifications according to the terms, conditions, and requirements herein. Vendors responding to this RFP shall be herein called the "Bidder."

1.1 Project Overview

Project includes replacement of select exterior aluminum glazed storefront entrance doors, frames, hardware on the Western Campus located at 11000 Pleasant Valley Road, Parma, OH 44130.

COLLEGE: MISSION, VISION, VALUES, AND HISTORY

Mission

To provide high quality, accessible and affordable educational opportunities and services—including university transfer, technical and lifelong learning programs—that promote individual development and improve the overall quality of life in a multicultural community.

Vision

Cuyahoga Community College will be recognized as an exemplary teaching and learning community that fosters service and student success. The College will be a valued resource and leader in academic quality, cultural enrichment, and economic development characterized by continuous improvement, innovation, and community responsiveness.

Values

To successfully fulfill the mission and vision, Cuyahoga Community College is consciously committed to diversity, integrity, academic excellence, and achievement of individual and institutional goals. We are dedicated to building trust, respect, and confidence among our colleagues, students, and the community.

History

Cuyahoga Community College was established in 1963, as Ohio's first community college. It now serves more than 55,000 credit and non-credit students each year. The College has four (4) traditional campuses. The Metropolitan Campus is located near downtown Cleveland, the Western Campus is located in Parma, the Eastern Campus is located in Highland Hills Village, and the Westshore Campus is located in Westlake. Two (2) Corporate Colleges are located in Westlake and Warrensville Heights; a Workforce Community, and Economic Development Division (WCED) is located at the Manufacturing Technology Center adjacent to the Metro Campus, in addition to a few other training centers; and the Administration Offices are located downtown.

Cuyahoga Community College, Ohio's largest community college, offers associate degrees, certificate programs and the first two years of a baccalaureate degree. Students can choose from nearly 1,000 credit courses in more than 70 career, certificate and university transfer programs. Approximately 80 off-campus credit courses are available at various locations near homes, work sites, and via the internet; and non-credit workforce and professional development courses are also offered.

Cuyahoga Community College offers a quality education and flexible learning options at the lowest tuition in Northeast Ohio. The College also generates spending of about $1.7 billion annually in Northeast Ohio and sustains more than 21,500 jobs. In addition, more than 500,000 Northeast Ohio residents attend college-sponsored cultural, community and sports programs each year. The College is home to the Cuyahoga Community College JazzFest in Cleveland, the nation's premier educational jazz festival, and hosts popular cultural arts programs at Playhouse Square and at campus theatres. More than 1,000,000 county residents have passed through Cuyahoga Community College's doors, representing one in five county residents.

Specific information about Cuyahoga Community College can be obtained at www.tri-c.edu .

1 SUBMITTING YOUR PROPOSAL

Bidders are cautioned to read the information contained in this RFP carefully. Bidders must submit complete responses to all requirements and questions, in the order listed, and in accordance with the instructions specified in this RFP.

The Bid Due Date is: Date January 31, 2024, by 12:00 noon. Proposals must be received at the location set forth below. Late proposals will not be accepted. Tri-C will confirm receipt of hard copies with a date and time stamp. In addition to the delivered hard copies, PDF copies shall be emailed. Both are required to be submitted on time.

Signed proposals in .pdf format are to be submitted to:

Judi.cooper@tri-c.edu

Cuyahoga Community College
Supplier Managed Services (SMS)
700 Carnegie Avenue
Cleveland, OH 44115
Attn: Judi Cooper

2.1 Contacts

Bidders must direct all questions regarding this RFP to Matthew O'Donnell, Owner's Representative at Matthew.ODonnell2@tri-c.edu . The last day for questions is January 24, 2024 at noon.

2.2 Preparation of Proposal

In submitting a proposal or in its performance under an award by Tri-C, the successful Bidder warrants and represents that it is not suspended or debarred by the Federal Government or the State of Ohio.

- Bidders must notify Tri-C promptly of any ambiguity, inconsistency, or errors.
- Tri-C will not provide compensation for any expenses incurred by the Bidder for preparation of the proposal or for product or service demonstrations.
- Alterations, deviations, or modifications must be noted in the submittal package.

- Tri-C will not assume responsibility for errors or misinterpretations resulting from the use of incomplete documents.

- Tri-C may not consider proposals that require or request changes to the terms of this RFP.

- Proposals and any other information submitted in response to this proposal are the property of the Tri-C, and will not be returned.

2.3 Supplier Diversity

Tri-C is committed to diversity and to supporting Greater Cleveland's economy. All suppliers are encouraged to do business with Tri-C. Tri-C encourages all Bidders to exceed the following goals:

a. Supplier Participation: 15% minority, 5% female, 2% veteran, and 6% CSB/SBE/SDBE.
b. Workforce Diversity: 45% local, 15% minority, 7% female, and 2% veteran

3 ADMINISTRATIVE AND CONTRACTUAL INFORMATION

- Tri-C reserves the right to reject any or all proposals received as a result of this RFP, modify specifications proposed, waive any formalities or technicalities, or negotiate separately with any source and in any manner whatsoever.

- Tri-C does not discriminate in admission, access, or treatment in programs and activities, employment policies or practices based on race, creed, sex, color, national or ethnic origin, religion, marital status, age, sexual orientation, Vietnam-era or qualified disabled veteran status, or qualified disability.

3.1 Award of Contract

Tri-C, at its sole discretion, shall decide if an award will result from this RFP. Proposals must be fully responsive to all requirements stated in the RFP to obtain consideration. Tri-C may not consider any proposal not prepared and submitted in accordance with the provisions outlined herein.

In the event a contract is awarded, this RFP and the proposal of the successful Bidder will be included as an addendum to the contractual obligations. Therefore, no information should be submitted which cannot be incorporated into that agreement.

Price alone will not be the sole determining factor in the selection process.

- Tri-C reserves the right to award based on various selection criteria.

- Tri-C is not bound to accept the lowest cost proposal, if in its judgment the lowest cost proposal does not provide the best overall value.

- Portions of the RFP may be awarded separately.

- Tri-C reserves the right to negotiate the final details of the Contract with the successful Bidder.

Pricing

- The Bidder must honor original pricing on all purchase orders up to the effective date of the approval.

- Price changes will be considered only after the initial term. Requests for price increases, prior to this period, may result in cancellation of the contract or specific items in the contract.
- Any price increase granted by Tri-C will be in the form of a written addendum to the original purchase order.
- All Bidders are required to hold discounted pricing for a period of six (6) months from time of submitted bid.

3.2 Delivery of Products and Services

Delivery requirements including inside delivery, and or installation for products and services are to be in coordination with Cuyahoga Community College or its designee, Late deliveries may be assessed a late fee.

- Deliveries of products & services must also be coordinated and scheduled with Tri-C.

3.3 Billing

Invoices must reflect the purchase order number and be submitted to Accounts Payable at:

Cuyahoga Community College
Accounts Payable
P O Box 5229
Cleveland, OH 44101-0229
Or emailed to Tri-C@edmamericas.com

3.4 Contract and License Agreements

Respondents must comply with all State of Ohio and Federal regulations concerning wages, liability insurance, worker's compensation, discrimination, intimidation, and any other applicable regulations.

4 TERMS AND CONDITIONS

Tri-C's Terms and Conditions are accessible on our web site at:
http://www.tri-c.edu/administrative-departments/supplier-managed-services/documents/terms.pdf

4.1 Entire Agreement

The RFP and any resulting Contract shall be the complete and exclusive statement of the agreement between Tri-C and the Bidder and supersedes all prior oral or written agreements.

The terms and conditions of any purchase order, agreements, amendments, modifications, or other documents submitted by either party which conflict with or in any way purport to amend or add to any of the terms and conditions of the Contract are specifically objected to by the other party and shall be of no force or effect; nor shall govern in any way the subject matter hereof, unless set forth in writing and signed by both parties.

4.2 Time of Performance

Bidder agrees to perform all obligations and render services set forth in the Contract, in accordance with the schedules herein and as mutually agreed upon between Tri-C and the Bidder during the term of the Contract.

4.3 Contracts Amendments

The Contract may be amended within the Contract period by mutual consent of both parties. No modification or amendment to the Contract shall become valid unless in writing and signed by both parties. All correspondence regarding modifications or amendments to the Contract must be forwarded to Tri-C's Vice President of Financial Services for prior review and approval.

4.4 Insurance

A. For any Contract which requires the Bidder to provide on-site services, prior to commencement of work, Bidder shall provide Tri-C with Certificates of Insurance in the amounts shown below as a minimum requirement and shall maintain such coverage in effect for the duration of the contract.
The insurer must be rated at least an 'A' by A. M. Best and Company.

Worker's Compensation	Statutory
Employer's Liability	$1,000,000
Comprehensive General Liability	$1,000,000 each occurrence $3,000,000 in the aggregate
Comprehensive Automobile Liability (Any auto, hired auto, non-owned auto) a) Bodily Injury b) Property Damage	 $ 500,000 each occurrence $ 500,000 each occurrence

If any part of the Contract is sublet, similar insurance shall be provided by or on behalf of the subcontractor to cover the subcontractor's operations. The Bidder shall provide evidence of such insurance. In the event a subcontractor is unable to furnish insurance in the limits required under the Contract, the Bidder shall endorse the subcontractor as an additional insured on the Bidder's policies.

The Bidder and Tri-C will include reciprocal "hold harmless" language in the contractual agreement.

B. Bidder shall deliver to Tri-C:

1. Certificates evidencing the existence of all such insurance promptly after the execution and delivery of contract and prior to the continued or additional performance of any services to be performed by the Bidder from or after the date of any agreement or purchase order; and

2. Such Certificates shall name Tri-C and its Board of Trustees as additional insured, with the exception of Workers Compensation and Employers Liability, and shall provide that the policies will not be cancelled until after 30 days unconditional written notice to Tri-C, giving Tri-C the right to pay the premium to maintain coverage.

C. The insurance policies required in this RFP shall be kept in force for the periods specified below:

1. The Bidder shall keep Commercial General Liability Insurance in force until receipt of final payment.

2. Workers' Compensation Insurance shall be kept in force until the Bidder's obligations have been fully performed and accepted by Tri-C in writing.

D. The Bidder shall provide Tri-C a full and complete copy of any insurance policy promptly upon request by Tri-C, and without charge.

4.5 Indemnification

The Bidder agrees to indemnify Tri-C, its officers, agents, employees, and/or subcontractors and hold them harmless from any and all liability (statutory or otherwise), claim, suit, demand, damage, judgment, cost, interest, and expense including but not limited to reasonable attorneys' fees and charges, which the Bidder may incur or pay out, by reason of or resulting from the performance of Bidder; or by any negligent act or omission by Bidder, its officers, agents, employees, and/or subcontractors in connection with any resulting Agreement, other than as may result from the gross negligence or willful misconduct of Tri-C. Furthermore, the indemnification contained herein may not be assigned of subrogated to any third party, whether by operation of law or otherwise.

The indemnities herein shall survive the termination of any agreement or purchase order for any reason whatsoever.

4.6 Other Benefits

It is understood and agreed that no benefits, payments or considerations received by Bidder for the performance of services associated with and pertinent to a resulting Contract shall accrue directly or indirectly to any employees, elected or appointed officers or representatives, persons identified as agents of, or who are by definition an employee of Tri-C.

4.7 Non-Disclosure

The Bidder and Tri-C acknowledge that in the performance of a resultant Contract employees of either parties may come into the possession of proprietary or confidential information owned by or in the possession of the other. Neither party shall use any such information for its own benefit or make such information available to any person, firm, corporation, or other organization regardless of whether directly or indirectly affiliated with the Bidder or Tri-C, unless: (1) required by law; (2) by order of any court or tribunal; (3) such disclosure is necessary for the assertion of a right or defense of an assertion of a right; by one party against the other party hereto; or (4) such information has been acquired from other sources.

4.8 Publicity

The Bidder agrees that it shall not publicize the Contract or disclose, confirm, or deny any details thereof to third parties; use any photographs or video recordings of Tri-C employees; or use Tri-C's name in connection with any sales promotion or publicity event without the prior express written approval of Tri-C.

4.9 Severability

In case any provision hereof, or of any resulting agreement or purchase order, shall, for any reason be held invalid or unenforceable in any respect, such invalidity or unenforceability shall not affect any other provision thereof, and this Contract shall be construed as if such invalid or unenforceable provision had not been included herein.

4.10 Assignment

This agreement is with the Bidder, and Bidder's interest in such agreement, duties hereunder, and/or fees due hereunder may not be assigned or delegated to a third party.

4.11 Observance of College Rules and Regulations

The Bidder agrees that at all times its employees will observe and comply with all regulations of Tri-C, including but not limited to smoking, parking, and security regulations.

5 ADDITIONAL INFORMATION

A. PRICING OF PROPOSAL

Each proposal is to be submitted on the attached Bid Form. Complete all of the relevant blank spaces and requested information. These forms must be properly signed, before scanning and sending to judi.cooper@tri-c.edu as a pdf.

Installation will be performed under direct coordination of the selected Bidder and Cuyahoga Community College.

If you are not able to provide the specified product, please indicate "N/A" (for not applicable). Refer to Paragraph 5.D for Substitutions.

It is requested that Bidders who may have any questions pertaining to these documents, or any concerns that may be in doubt as to the true meaning of any part of the Specification or their proposed contract documents, should submit to Matthew O'Donnell Matthew.ODonnell2@tri-c.edu an email request for an interpretation thereof. The person submitting the request will be responsible for its prompt delivery. Any interpretation of the proposed documents will be made by Addendum duly issued and a copy of such Addendum will be e-mailed to each person receiving a set of pricing documents.

Pricing for the above described work must be submitted on this RFP furnished with the pricing documents.

B. WITHDRAWL OF PROPOSAL

No bidder may withdraw their proposal for a period of (90) days after the date of opening.

C. REJECTION OR ACCEPTANCE OF PRICING PROPOSAL

Cuyahoga Community College reserves the right to reject any or all proposal and any part or parts of any proposal and the right to waive any informalities of any kind.

D. SUBSTITUTIONS

Acceptable substitutions are to be e-mailed to Matthew O'Donnell attention for review Matthew.ODonnell2@tri-c.edu . The alternate shall be included if and only if written approval is received via Tri-C's addendum.

- Proof of equality & a comparison to basis of specification shall be included with each proposed substitution.
- Substitutions are to be delivered to Matthew O'Donnell, no later than January 24, 2024, 12:00 noon.

E. PRODUCT

Workmanship and materials will be warranted for a period of not less than one year from the date of final acceptance by Tri-C. Should defects develop within warranty period, the manufacturer, through the Bidder, shall remedy the defects and reimburse Tri-C for all damage to other work, whether caused by the defects or the work of correcting the same. Warranties extending beyond the one-year period

shall be specifically provided in the Contract and may be fulfilled by the written warranty of the manufacturer.

F. DELIVERY, STORAGE, & HANDLING

The Bidder shall be responsible for the receipt of product and supplies necessary to provide a complete installation. All deliveries shall be scheduled and coordinated with the College. Equipment must be promptly installed after delivery. Exact date is yet to be determined; refer to Section 3.3 for range of dates. All products shall be delivered in good condition and in its original and unopened crating and covering.

G. DESIGN SERVICES

N/A

H. SUBMITTALS

The following items shall be submitted at Bid Time:

1. Completed Bid Form.
2. Certificate of Insurance (Acord Form is acceptable)
3. Updated W-9 Form.
4. Registered, Legal Name of Vendor.
5. Door / Storefront, Security & Access Control manufacturers the bidder will use for this project.
6. Identify any labor constraints and material lead times that may lead to prolonged procurement and or installation.
7. Prior installation references identifying specified manufacturer, scope and contract value.

The following items shall be submitted within 10 days of Contract or Notice of Intent to Award:

8. Shop Drawings to identify all detail of the frames, glazing, gaskets, flashings to adjacent surfaces, hardware, security and access control pathways, security and access control components.
9. Cut sheets / product data of all products included in Bidder's bid package.
10. List of sub-contractors you will use on this project.
11. Sustainability:

a. The Bidder is asked to make all reasonable efforts to reduce packaging. Include a brief description of a waste reduction strategy with your proposal, indicating strategies to be employed. If dumpsters will be used, waste shall be diverted from landfills wherever possible.

I. INSTALLATION

The Bidder will have a full-time installation crew capable of completing the job requirements. Installation will be in accordance with the manufacturer's installation procedures. All systems and components will be installed level, plumb square, and with proper alignment with adjoining walls, furniture or equipment. The equipment will be securely attached to the building when required. The Bidder will be responsible for the removal of all trash and debris associated with the installation of all equipment in this package.

Installation Services: The Bidder (Contractor) shall:

1. Notify the College two (2) weeks prior to installation. Timing of installation shall be coordinated with the College.

2. Conduct an inspection of the building to identify phasing and staging or any restrictions, which might impact installation.

3. Identify appropriate delivery area with Tri-C; use of passenger elevator is predicated on approval of the College. Elevator may not be available for use.

4. Provide all necessary equipment required to transport.

5. Packing materials will be removed from the work area at the end of each day. The site will be left "broom-cleaned" daily.

6. Coordinate with general contractor, building electrician, or subcontractor, i.e., telephone, electrical, etc., to schedule timing of each.

7. Protect all doors, door jambs, walls, and floor finishes from move-in activities.

8. Repair all scratches, tears, and dents that were a result of delivery, handling and installation.

9. All equipment will be final-cleaned after adjustment, leveling, and inspection for damage; notify the College when the area is ready for "punch listing."

10. Contractor to provide on-site field supervisor during full-term of installation. Cost of this person shall be included in the Bidder's bid.

11. Safety
    a. Bidders are to comply with all pertinent sections of CFR 1926 (OSHA) and related codes. Provide required signage, temporary protection, and barricades necessary for the protection of the public. Hard hats, safety glasses, and appropriate work gloves are required to be worn by contractors' labor force at all times.

12. Installation

a. Labor Requirements

1) The Bidder shall base its bid upon the prevailing rates of wages as ascertained by the Ohio Department of Commerce, Wage and Hour Bureau. Comply with ORC Section 4115.03 through 4115.04.
2) Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work in this section.
3) The Owner reserves the right to reject any workmen, supervisor, or staff of the Contractor.

b. Examination

1) Examine Project site 24 hours before first delivery, including loading dock area, elevators, and staging area, to ensure conditions are satisfactory for proper performance of work. Existing damage to building or debris that hinders performance shall immediately be called to the attention of the College's Representative.
    a. Examine substrate and conditions under which work is to be performed.
2) Examine materials or equipment immediately upon delivery and again prior to installation. Reject damaged or defective items.
3) Do not proceed until unsatisfactory conditions have been corrected.

c. Installation of Equipment

1) Provide and install the equipment as shown on the drawings and as specified herein.
2) Comply with manufacturer's installation instructions and recommendations.
3) Provide connection devices, hardware and accessories required for complete installation.
4) Install components. Lock securely into place at heights and dimensions Indicated.

d. Cleaning

1) Remove packing material and debris from Project site and off site at the end of each working day. The job site is to be maintained in a clean, orderly condition and kept free from the accumulation of waste materials and rubbish.
2) Clean equipment of soils marks, dust and fingerprints.

e. Finishes

1) Factory or site finish, color, sheen, and texture shall be uniform.

f. Protection

1) Cover, ventilate, and protect installed goods to protect from damage caused by weather, moisture, heat, staining, dirt, abrasions, or other conditions that may adversely affect appearance or use.
2) Protect against deterioration of finish, warpage, distortion, twisting, opening of joints and seams, delamination, or other injury.
3) Limit exposure to the following:
    a. Excessively high or low temperatures
    b. Excessively high or low humidity
    c. Water

d. Solvents
e. Puncture
f. Abrasion
g. Spoiling, staining, and corrosion
h. Rodent and insect infestation
i. Combustion

13. Project Closeout:
    a. Refer to project close-out requirements in the project manual, (available for reference at Capital and Construction,700 Carnegie Ave., Cleveland, OH 44115.
    b. Final Cleaning
        1) Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean surfaces or units to the condition expected in building cleaning and maintenance program. Comply with manufacturer's instructions.
            a) Complete the following cleaning operations before requesting inspection for Certification of Contract Completion:
                i. Remove labels that are not permanent
                ii. Clean exposed hard-surfaced finishes to a dust-free condition, free of stains, films, and similar foreign substances.
                iii. Remove temporary protection
                iv. Repair wall surfaces damaged during installation to like new condition.

- **These notes shall take precedence over drawings and sketches.**

Appendix A – BID FORM

Bidder's Certification and Authorization to Execute

The Bidder hereby acknowledges that the following representations in this bid are material and not mere recitals:

1. Bidder has read and understands the Contract Documents and agrees to comply with all requirements of the Contract Documents, regardless of whether the Bidder has actual knowledge of the requirements and regardless of any statement or omission made by the Bidder, which might indicate a contrary intention.

2. The Bidder represents that the bid is based upon the Standards specified by the Contract Documents.

3. Bidder has become familiar with local conditions and has correlated personal observations about the requirements of the Contract Documents. The Bidder has no outstanding questions regarding the interpretation or clarification of the Contract Documents.

4. Bidder understands that the award of separate Contracts for the Project will require sequential, coordinated and interrelated operations, which may involve interference, disruption, hindrance or delays in the progress of the Bidder's Work. The Bidder agrees that the Contract price, as amended from time to time, shall cover all amounts due from Tri-C resulting from interference, disruption, hindrance or delay caused by or between Bidders or his agents and employees. The Bidder agrees that any such interference, disruption, hindrance or delay is within the contemplation of the Bidder and Tri-C and that the Bidder's sole remedy for any such interference, disruption, hindrance or delay shall be an extension of time in accordance with the Contract Documents. This provision is intended to be, and shall be construed as, consistent with, and not in conflict with, Section 4113.62, ORC.

5. During the performance of the Contract, the Bidder agrees to comply with OAC Chapters 123:2-3 through 123:2-9 and agrees to incorporate the provisions contained in the Ohio Administration Code Section 123:2-9-01 into all subcontracts on the Project, regardless of tier. The Bidder understands that the Ohio Equal Opportunity Center may conduct pre-award and post-award compliance reviews to determine if the Bidder maintains nondiscriminatory employment practices, maintains an affirmative action program and is exerting good faith efforts to accomplish the goals of the affirmative action program. For a full statement of the rules regarding Equal Employment Opportunity in the Construction Industry, see OAC Chapters 123:2-1 through 123:2-9.

6. The Bidder and each person signing on behalf of the Bidder certifies, and in the case of a joint or combined bid, each party thereto certifies as to such party's organization, under penalty of perjury, that to the best of the undersigned's knowledge and belief: (a) the Base Bid, any Unit Prices and any Alternate Bid in the bid have been arrived at independently without collusion, consultation, communication or agreement, for the purpose of restricting competition as to any matter relating to such Base Bid, Unit Prices or Alternate bid with any other Bidder; (b) unless otherwise required by law, the Base Bid, any Unit Prices and any Alternate bid in the bid have not been knowingly disclosed by the Bidder and will not knowingly be disclosed by the Bidder prior to the bid opening, directly or indirectly, to any other Bidder who would have any interest in the Base Bid, Unit Prices or Alternate bid; (c) no attempt has been made or will be made by the Bidder to induce any other individual, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

7. Bidder understands that the Contract is subject to all the provisions, duties, obligations, remedies and penalties of Chapter 4115, ORC, "Wages and Hours on Public Works," and that the Bidder shall pay any wage increase in the locality during the term of the Contract.

8. The Bidder shall pay the prevailing wage rates of the Project locality, as issued by the Ohio Department of Commerce. Wage and Hour Bureau to laborers and mechanics performing Work on the Project.

9. If the bidder or its Subcontractors fail to comply with O.R.C Chapter 4115, Tri-C may withhold payment. The Bidder is liable for violations committed by the Bidder or its Subcontractors.

10. Bidder certifies that upon the award of a Contract, the Bidder will make a good faith effort to ensure that all of the Bidder's employees, while working on Tri-C property, will not purchase, transfer, use or possess illegal drugs or alcohol or abuse prescription drugs in any way and will ensure that its employees will not carry any firearm onto Tri-C premises or job site.

11. Bidder agrees to furnish any information requested by Tri-C to evaluate the responsibility of the Bidder.

12. Bidder certifies that it is enrolled and in good standing in an Ohio Bureau of Workers' Compensation (BWC) Drug Free Workplace Program (DFWP) or an equivalent BWC approved DFWP. Bidder certifies that it will require each of its Subcontractors on the Project to also be enrolled in a BWC approved DFWP and will submit confirmation of enrollment of its Subcontractors to Tri-C with this Bidder's Certification.

13. Bidder certifies that the Personal Property Tax Certificate attached hereto is true and accurate in all respects.

14. All signatures must be original.

15. By signature hereto, Bidder offers and agrees to furnish products and / or services as proposed and comply with all terms, conditions, and requirements set forth in the RFP documents contained herein.

16. Bidder further certifies that all statements and information prepared and submitted in response to this solicitation are complete and accurate.

17. Bidder certifies that the individual signing this document and documents made part of the RFP is authorized to sign documents on behalf of the said company and to bind the company under any Contract that may result from the submission of a proposal.

18. Bidder certifies compliance with all Federal laws and regulations pertaining to Equal Employment Opportunities and Affirmative Action.

BID PACKAGE

Base Bid - Doors C100J, B156A Exterior, B156A Interior, C100B, C100D:

ALL LABOR AND MATERIALS, for the sum of $_____

Sum in words:_____

_____)__ and ____ /100 dollars

Alternate #1 – Doors G147H:

ALL LABOR AND MATERIALS, for the sum of $_____

Sum in words:_____

_____)__ and ____ /100 dollars

Alternate #2 – Doors E108:

ALL LABOR AND MATERIALS, for the sum of $_____

Sum in words:_____

_____)__ and ____ /100 dollars

Alternate #3 – Doors F117:

ALL LABOR AND MATERIALS, for the sum of $_____

Sum in words:_____

_____)__ and ____ /100 dollars

ATTACH CUT SHEETS for Storefront System Components, Door Hardware, Glazing, Security and Access Control

Combined Bid (check applicable boxes):

Base Bid ____
Alternate #1 ____
Alternate #2 ____
Alternate #3 ____

BIDDER'S NAME: _____

Authorized Signature: _____

Date Signed: _____

Print Name: _____

Title: _____

Company Name: _____

Mailing Address: _____

_____

Telephone Number: _____

Facsimile Number: _____

E-Mail Address: _____

Where Incorporated: _____

Federal Identification Number: _____

Contact person for Contract processing: _____

Date enrolled in an OBWC-approved
DFWP (month/date/year): _____/_____/_____

President or Primary Officer Name and Title: _____

_____

Acknowledge Receipt of all Addenda: _____

State of Ohio
Ohio Facilities Construction Commission

DELINQUENT PERSONAL PROPERTY TAX AFFIDAVIT

(Section 5719.042, ORC)

State of Ohio }
} SS.
County of _____ }

The undersigned individual, or duly authorized representative of the identified company, having been first duly cautioned and sworn, alleges and states that said individual or company has been advised that he has or it has received a Notice of Intent to Award a Contract(s) let by competitive bid by Cuyahoga Community College District**, on behalf of the State of Ohio under Section 3318.10, ORC, but prior to the execution of said Contract(s), and pursuant to Section 5719.042, ORC, provides this statement to the Treasurer under oath that he or it was not charged, on the date the Bid(s) was submitted, with any delinquent personal property taxes on the general tax list of personal property of _____ County, Ohio, or that he or it is so charged in the following amount:**

Delinquent Tax: _____

Penalties and interest due and unpaid: _____

Total (if none, indicate "NONE") _____

A copy of this sworn statement will be attached to and incorporated into the Contract(s) for this Project which shall enable payments to be made under said Contract(s).

By: _____ Date: _____, _____

Company:_____ _____

Project:

Sworn to and executed before me this _____ *day of* _____, _____

_____
Notary Public
My commission expires: _____

APPENDIX A.2

Contract Completion Checklist

Project Name: _____ Contractor Name: _____

Project Number: _____ Address: _____

Project Location: _____ _____

N/A	Included	Not Included	
			Closeout Forms / Certifications Required (3 original copies to Owner required):
☐	☐	☐	Payment Release Affidavit
☐	☐	☐	Final Certified Payroll Reports
☐	☐	☐	Updated Form 26
☐	☐	☐	Affidavit of Compliance to Prevailing Wages for each sub
☐	☐	☐	Certification of Equipment Demonstrations
☐	☐	☐	Partial Certification of Contract Completion
☐	☐	☐	Certification of Warranty Commencement
☐	☐	☐	Final Certification of Contract Completion
☐	☐	☐	Waiver of Lien
☐	☐	☐	Affidavit of Contractor/Subcontractor
			Closeout Action Items and Record Documents (3 original copies to Owner required):
☐	☐	☐	Final Cleaning
☐	☐	☐	Complete Punch List Work
☐	☐	☐	Certificate of Occupancy
☐	☐	☐	Inspection Certificates
☐	☐	☐	Letter of Approval - State Fire Marshal for Fire Suppression System
☐	☐	☐	Operations and Maintenance Manuals
☐	☐	☐	As-Built Drawings
☐	☐	☐	Detailed Drawings - concealed utilities, MEP systems
☐	☐	☐	Warranties and Guarantees, including the most recent address and telephone number of any Subcontractors, Material Suppliers, or manufacturers
☐	☐	☐	Extra Material, e.g. Attic Stock, keys, specialized wrenches, etc.
☐	☐	☐	Consent of Surety for Final Payment

Reviewed by:

Construction Manager (or Architect / Engineer for Stipulated Sum Contracts)

Name: _____ Signature: _____ Date: _____

Plant Manager

Name: _____ Signature: _____ Date: _____

Capital and Construction

Name: _____ Signature: _____ Date: _____

APPENDIX B – FLOOR PLAN INDICATION EXTERIOR DOOR LOCATIONS

APPENDIX B - FLOOR PLAN INDICATING EXTERIOR DOOR LOCATIONS

E108 (Bid Alternate 2)

F117 (Bid Alternate 3)

G147H (Bid Alternate 1)

B156A

C100B

C100D

C100J

F3 FIRST FLOOR PLAN - WEST CAMPUS

NTS

0 10 20 40 80

N

APPENDIX C – SCOPE OF WORK / DOOR ELEVATIONS

APPENDIX C – SCOPE OF WORK / DOOR ELEVATIONS

DOOR C100J Exterior

Approximate Rough Opening: 7’-10 ¾” x 9’-4 5/8”.

Replace glazed aluminum storefront doors, door frames, and door hardware.

Existing sidelights and transoms to remain.

Provide interior and exterior perimeter sealant and lay threshold in sealant.

Existing mag-locks and associated wiring are to be removed, reinstalled, and reconnected to the security system. Mag-locks must be fully functional to secure the doors at the end of each work day.

Provide temporary signage to provide notificication of door closure with directions to alternate doors. Signs to be a minimum of 8-1/2” x 11” and computer printed, not hand written. Coordinate with Tri-C team for language, posting locations, and posting durations.

APPENDIX C – SCOPE OF WORK / DOOR ELEVATIONS

DOOR B156A Exterior

Approximate Rough Opening: 8’-4” x 8’-10 1/2”.

Replace glazed aluminum storefront doors, door frames, and door hardware.

Replace all framing, sidelights, and transom.

Remove recessed pivot/closer and patch concrete.

Provide interior and exterior perimeter sealant and lay threshold in sealant.

Existing mag-locks and associated wiring are to be removed, reinstalled, and reconnected to the security system. Mag-locks must be fully functional to secure the doors at the end of each work day.

Provide temporary signage to provide notificication of door closure with directions to alternate doors. Signs to be a minimum of 8-1/2” x 11” and computer printed, not hand written. Coordinate with Tri-C team for language, posting locations, and posting durations.

APPENDIX C – SCOPE OF WORK / DOOR ELEVATIONS

DOOR B156A Interior

Approximate Rough Opening: 9’-6 5/8” x 7’-11 3/4”.

Replace glazed aluminum storefront doors, door frames, and door hardware.

Replace all framing, sidelights, and transom.

Provide interior perimeter sealant on both sides of opening.

Provide temporary signage to provide notificication of door closure with directions to alternate doors. Signs to be a minimum of 8-1/2” x 11” and computer printed, not hand written. Coordinate with Tri-C team for language, posting locations, and posting durations.

APPENDIX C – SCOPE OF WORK / DOOR ELEVATIONS

DOOR C100B Exterior

Approximate Rough Opening: 8’-2 1/8” x 8’-10 3/4”.

Replace FRP doors with glazed aluminum storefront doors, door frames, and door hardware. New paired doors are to be 6’-0” x 7’-0”. Replace all framing, sidelights, and transom with glazed aluminum storefront. Transom to run full width of opening and contain insulated glazed panel(s) with dark bronze tinted 1” insulated glazing. The transom panels shall hide the interior soffit from view. Sidelights to be 1” insulated glazing.

Provide interior and exterior perimeter sealant and lay threshold in sealant.

Existing mag-locks and associated wiring are to be removed, reinstalled, and reconnected to the security system. Mag-locks must be fully functional to secure the doors at the end of each work day.

Provide temporary signage to provide notificication of door closure with directions to alternate doors. Signs to be a minimum of 8-1/2” x 11” and computer printed, not hand written. Coordinate with Tri-C team for language, posting locations, and posting durations.

APPENDIX C – SCOPE OF WORK / DOOR ELEVATIONS

DOOR C100D Exterior

Approximate Rough Opening: 8’-2 1/2” x 8’-10 5/8”.

Replace FRP doors with glazed aluminum storefront doors, door frames, and door hardware. New paired doors are to be 6’-0” x 7’-0”. Replace all framing, sidelights, and transom with glazed aluminum storefront. Transom to run full width of opening and contain insulated glazed panel(s) with dark bronze tinted 1” insulated glazing. The transom panels shall hide the interior soffit from view. Sidelights to be 1” insulated glazing.

Provide interior and exterior perimeter sealant and lay threshold in sealant.

Existing mag-locks and associated wiring are to be removed, reinstalled, and reconnected to the security system. Mag-locks must be fully functional to secure the doors at the end of each work day.

Provide temporary signage to provide notificication of door closure with directions to alternate doors. Signs to be a minimum of 8-1/2” x 11” and computer printed, not hand written. Coordinate with Tri-C team for language, posting locations, and posting durations.

APPENDIX C – SCOPE OF WORK / DOOR ELEVATIONS

DOOR G147H Exterior (Bid Alternate 1)

Approximate Rough Openings: 2 openings at 6’-7 1/2” x 7’-1 1/2” separated by center mullion.

Replace glazed aluminum storefront doors, door frames, and door hardware.

Existing sidelights and transoms to remain.

Remove recessed pivot/closer and patch concrete.

Provide interior and exterior perimeter sealant and lay threshold in sealant.

Existing mag-locks and associated wiring are to be removed, reinstalled, and reconnected to the security system. Mag-locks must be fully functional to secure the doors at the end of each work day.

Provide temporary signage to provide notificication of door closure with directions to alternate doors. Signs to be a minimum of 8-1/2” x 11” and computer printed, not hand written. Coordinate with Tri-C team for language, posting locations, and posting durations.

APPENDIX C – SCOPE OF WORK / DOOR ELEVATIONS

DOOR E108 Exterior (Bid Alternate 2)

Approximate Rough Openings: 2 openings at 6’-7 1/2” x 7’-1 1/2” separared by center mullion.

Replace glazed aluminum storefront doors, door frames and door hardware.

Existing sidelights and transoms to remain.

Remove recessed pivot/closer and patch concrete.

Provide interior and exterior perimeter sealant and lay threshold in sealant.

Existing mag-locks and associated wiring are to be removed, reinstalled, and reconnected to the security system. Mag-locks must be fully functional to secure the doors at the end of each work day.

Provide temporary signage to provide notificication of door closure with directions to alternate doors. Signs to be a minimum of 8-1/2” x 11” and computer printed, not hand written. Coordinate with Tri-C team for language, posting locations, and posting durations.

APPENDIX C – SCOPE OF WORK / DOOR ELEVATIONS

DOOR F117 Exterior (Bid Alternate 3)

Approximate Rough Openings: 2 openings at 6’-7 1/2” x 7’-1 1/2” separared by center mullion.

Replace glazed aluminum storefront doors, door frames and door hardware.

Existing sidelights and transoms to remain.

Remove recessed pivot/closer and patch concrete.

Provide interior and exterior perimeter sealant and lay threshold in sealant.

Existing mag-locks and associated wiring are to be removed, reinstalled, and reconnected to the security system. Mag-locks must be fully functional to secure the doors at the end of each work day.

Provide temporary signage to provide notificication of door closure with directions to alternate doors. Signs to be a minimum of 8-1/2” x 11” and computer printed, not hand written. Coordinate with Tri-C team for language, posting locations, and posting durations.

APPENDIX D –SPECIFICATION SECTIONS

Section 011000…..Summary of Work
Section 012300…..Alternates
Section 012500…..Substitution Procedure
Substitution Request Form – During Procurement
Substitution Request Form – During Construction
Section 013300…..Submittal Procedures
Section 014000…..Quality Requirements
Section 017300…..Execution
Section 017700…..Closeout Procedures

Section 024119…..Selective Demolition
Section 079200…..Joint Sealant
Section 081743….. FRP Flush Doors and Frames
Section 084113…..Aluminum Framed Entrances and Storefronts
Section 087100…..Door Hardware
Section 087100…..Door Hardware Appendix A – Approved Products List
Section 087113…..Automatic Door Operators
Section 088000…..Glazing

SECTION 011000 – SUMMARY

PART 1 - GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

A. Project consists of interior renovation at the basement level and associated work at the CAED CM Lab. In addition, various alternate bid work may be included. Project scope is for all work of all trades, complete, as indicated on the Drawings and specified herein in a single-prime contract.

Project Identification: Cuyahoga Community College
West Campus Door Replacement
Tri-C Project Number – 20227082
11000 Pleasant Valley Road
Parma, Ohio 44130

Owner: Cuyahoga Community College
700 Carnegie Avenue
Cleveland, Ohio 44130

B. Architect Identification: The Contract Documents were prepared for Project by:

1. Architect of Record: Van Auken Akins Architects, LLC
1422 Euclid Avenue, #1010
Cleveland, Ohio 44115

1.2 USE OF PREMISES

A. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of site beyond areas in which the Work is indicated.

1. Limits: Confine construction operations to areas indicated on the Drawings.
2. Owner Occupancy: Allow for Owner occupancy of site and use by the public.
3. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials, unless specifically authorized by the Owner.

a. Schedule deliveries to minimize use of driveways and entrances.
b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

4. Minimal access or use of building interior beyond building protection work.
5. Minimal above ceiling access to the roof deck or other levels as required to install the fall protection steel reinforcing.

B. Use of Existing Buildings: Maintain existing buildings in a weather-tight condition throughout construction period. Repair damage caused by construction operations. Protect buildings and

their occupants during construction period.

1.3 OCCUPANCY REQUIREMENTS

A. Full Owner Occupancy: Owner will occupy site and existing buildings during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations.

1.4 SPECIFICATION FORMATS AND CONVENTIONS

A. Specification Format: The Specifications are organized into Divisions and Sections using the 48-division format and CSI/CSC "MasterFormat" numbering system.

1. Section Identification: The Specifications use section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of sections in the Contact Documents.

B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
   a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

:

C. Assumption of Responsibility: Throughout these specifications, unless specifically noted otherwise, all work shall be assumed to be the sole responsibility of the Contractor.
D. Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.
3. Keynoting: Materials and products are identified by reference keynotes.

1.5 INDUSTRY STANDARDS AND CODE COMPLIANCE

A. It is the intent of the design team that all work contained in these Documents comply in all respects with all applicable codes and ordinances having jurisdiction over this Project, as well as Factory Mutual approval. All due diligence was exercised in the preparation of these Documents to achieve that end.

B. Bidders are directed to immediately advise the Architect if they discover any materials,

products, or designs that conflict with or fail to satisfy any of the following codes or ordinances.

1. The Ohio Building Code (OBC).
2. The National Fire Protection Association (NFPA).
3. Occupational Safety & Health Standards of Construction Industry (OSHA).
4. Factory Mutual Global (FMG).

C. The above notwithstanding, Industry Standards and Codes are recognized as minimum requirements. In many cases these Contract Documents specify materials, quantities, thicknesses, details, assemblies, etc., that clearly exceed the Industry Standards and prevailing Codes. In all these cases the more stringent requirements in the Contract Documents shall be required.

1.6 MEANS AND METHODS OF CONSTRUCTION/JOB SITE SAFETY

A. The efforts of the Architect and their Architects are focused on designing a Project, which will be safe upon Final Completion. The Architect and their Consultants have no training, nor expertise in, and take no responsibility for, construction means and methods, nor job site safety. These issues are exclusively the Contractor's responsibility. Processing and/or approving submittals made by the Contractor which may contain information related to construction means and methods or safety issues shall not be construed as voluntary assumption by the Architect or any of their Consultants of any responsibility for means and methods of construction nor job site safety. Similarly, participation in meetings were such issues might be discussed, shall not be construed as voluntary assumption by the Architect or any of their Architects of any responsibility for means and methods of construction nor job site safety.

1.7 SPECIAL OWNER SITE CONDITIONS AND REQUIREMENTS

A. Utility Operation: All utilities are to remain in operation during the construction period. Contractor shall submit schedules to Owner for review, approval and coordination prior to performing all work impacting the existing facility utilities. Shutdowns and tie-ins for all utilities shall be made at times approved by the Owner, and regardless of the time directed by the Owner, Contractor shall make no claim for overtime or premium time payments.

1. Notify Owner not less than two days in advance of proposed utility interruptions.
2. Obtain Owner's written permission before proceeding with utility interruptions.

B. Noise Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner

C. Material Delivery: Contractor shall have all personnel available for unloading, handling, and delivery to the Work are of all materials, equipment, and products. Should materials, equipment, or products arrive at the site without the Contractor's personnel being present for unloading, handling, and delivery to the Work are, the Owner may reject the delivery of these items. All costs incurred because of such rejection of receipt, including returns, storage, redelivery, etc., shall be borne solely by the Contractor.

D. Audio Equipment: Playing of radios, tape players, CD players, televisions, or other audio equipment is prohibited everywhere on the site. Violation of this directive shall be grounds for immediate and permanent removal from the site.

E. Appropriate Clothing: Construction personnel shall dress in appropriate clothing at all times, everywhere on the site. Shirts with 4" or longer sleeves and full-length pants shall be worn at all times everywhere on the site. No article of clothing or visible body parts may have obscene or profane verbiage or graphics displayed on it in any manner. Violation of this directive shall be grounds for immediate and permanent removal from the site.

F. Controlled Substances: Use of tobacco products and other controlled substances within the existing building and on the Project site is not permitted. Violation of this directive shall be grounds for immediate and permanent removal from the site.

G. Language: Loud or abusive language, particularly obscene or profane language is prohibited at all times, everywhere on the site. Violation of this directive shall be grounds for immediate and permanent removal from the site.

H. Firearms, alcoholic beverages, and illegal drugs: Firearms, alcoholic beverages, and illegal drugs are strictly prohibited at all times, everywhere on the site. Violation of this directive shall be grounds for immediate and permanent removal from the site.

I. Special Work Permits, approved by the Owner, shall be required to perform work under the following special circumstances. These permits shall be requested not later than 7days before the work is to begin. Blank copies of the forms used to apply for these permits will be distributed at the Pre-construction Meeting.

1. Above Ceiling Work Permit for Areas Outside the designated Areas of Work.
2. Hot Work Permit.
3. After Hours Permit.

1.8 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
2. On-Site Work Hours: Contractor will present intended regular work schedule at Pre-Construction Meeting for Owner approval/
3. Weekends may be available with prior coordination with the Owner.
4. Extended hours for service shut-downs shall be as indicated in the General Conditions

1.9 CONSTRUCTION SCHEDULE, MILESTONES AND BENCHMARKS

A. Time is of the essence in the completion of the Work of this Project, and the key construction benchmarks shall be as follows. Contractor shall staff the Project to satisfy these key dates.

1. Notice to Proceed, on or about, February 9. 2024
2. Substantial Completion shall be achieved no later than August 23, 2024
3. Contract Completion is 210 consecutive days from the Notice to Proceed with the Project.

PART 2 – PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate. Costs listed for each alternate include costs of related coordination, modification, or adjustment.

B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration.

C. Execute accepted alternates under the same conditions as other work of the Contract.

D. Schedule: A Schedule of Alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 – EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Refer to Bid Form

END OF SECTION 012300

SECTION 012500 – SUBSTITUTION PROCEDURES

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 administrative and procedural requirements for substitutions.

1.3 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.4 ACTION SUBMITTALS

A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use CSI Form 13.1A.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
e. Samples, where applicable or requested.

f. Certificates and qualification data, where applicable or requested.
g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES or the Ohio Board of Building Standards.
j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
k. Cost information, including a proposal of change, if any, in the Contract Sum.
l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

    a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
    b. Substitution request is fully documented and properly submitted.
    c. Requested substitution will not adversely affect Contractor's construction schedule.
    d. Requested substitution has received necessary approvals of authorities having jurisdiction.
    e. Requested substitution is compatible with other portions of the Work.
    f. Requested substitution has been coordinated with other portions of the Work.
    g. Requested substitution provides specified warranty.
    h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Architect will consider requests for substitution if received within seven (7) days after the Notice to Proceed (or after the Letter of Intent if issued prior to the Notice to Proceed). Requests received after that time may be considered or rejected at discretion of Architect.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

    a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
    b. Requested substitution does not require extensive revisions to the Contract Documents.
    c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
    d. Substitution request is fully documented and properly submitted.
    e. Requested substitution will not adversely affect Contractor's construction schedule.
    f. Requested substitution has received necessary approvals of authorities having jurisdiction.
    g. Requested substitution is compatible with other portions of the Work.
    h. Requested substitution has been coordinated with other portions of the Work.
    i. Requested substitution provides specified warranty.
    j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SUBSTITUTION REQUEST

(During the Bidding/Negotiating Stage)

Project: _____ Substitution Request Number: _____

_____ From: _____

To: _____ Date: _____

_____ A/E Project Number: _____

Re: _____ Contract For: _____

Specification Title: _____ Description: _____

Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____

Manufacturer: _____ Address: _____ Phone: _____

Trade Name: _____ Model No.: _____

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

Submitted by: _____

Signed by: _____

Firm: _____

Address: _____

_____

Telephone: _____

A/E's REVIEW AND ACTION

☐ Substitution approved - Make submittals in accordance with Specification Section 01 25 00 Substitution Procedures.
☐ Substitution approved as noted - Make submittals in accordance with Specification Section 01 25 00 Substitution Procedures.
☐ Substitution rejected - Use specified materials.
☐ Substitution Request received too late - Use specified materials.

Signed by: Date:

Supporting Data Attached: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ _____

Form Version: January 2013
CSI Form 1.5C

SUBSTITUTION REQUEST
(After the Bidding/Negotiating Phase)

Project: _____ Substitution Request Number: _____

_____ From: _____

To: _____ Date: _____

_____ A/E Project Number: _____

Re: _____ Contract For: _____

Specification Title: _____ Description: _____

Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____

Manufacturer: _____ Address: _____ Phone: _____

Trade Name: _____ Model No.: _____

Installer: _____ Address: _____ Phone: _____

History: ☐ New product ☐ 1-4 years old ☐ 5-10 years old ☐ More than 10 years old

Differences between proposed substitution and specified product: _____

_____

_____

☐ Point-by-point comparative data attached — REQUIRED BY A/E

Reason for not providing specified item: _____

_____

Similar Installation:

Project: _____ Architect: _____

Address: _____ Owner: _____

_____ Date Installed: _____

Proposed substitution affects other parts of Work: ☐ No ☐ Yes; explain _____

_____

Savings to Owner for accepting substitution: _____ ($ _____).

Proposed substitution changes Contract Time: ☐ No ☐ Yes [Add] [Deduct] _____ days.

Supporting Data Attached: ☐Drawings ☐Product Data ☐ Samples ☐ Tests ☐ Reports ☐ _____

Form Version: September 2013
CSI Form 13.1A

SUBSTITUTION REQUEST

(After the Bidding/Negotiating Phase — Continued)

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: _____

Signed by: _____

Firm: _____

Address: _____

_____

Telephone: _____

Attachments: ☐

A/E's REVIEW AND RECOMMENDATION

☐ Approve Substitution - Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
☐ Approve Substitution as noted - Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures.
☐ Reject Substitution - Use specified materials.
☐ Substitution Request received too late - Use specified materials.

Signed by: _____ Date: _____

OWNER'S REVIEW AND ACTION

☐ Substitution approved - Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures. Prepare Change Order.
☐ Substitution approved as noted - Make submittals in accordance with Specification Section 01 33 00 Submittal Procedures. Prepare Change Order.
☐ Substitution rejected - Use specified materials.

Signed by: _____ Date: _____

Additional Comments: ☐Contractor ☐Subcontractor ☐Supplier ☐Manufacturer ☐A/E

Form Version: September 2013
CSI Form 13.1A

SECTION 013300 – SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. Refer also to additional requirements more specific to elevator equipment in Section 013001.

1.2 SUMMARY

A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."

B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

C. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.

D. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.4 ACTION SUBMITTALS

A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required

to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.

3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.

    a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.

4. Format: Arrange the following information in a tabular format:

    a. Scheduled date for first submittal.
    b. Specification Section number and title.
    c. Submittal category: Action; informational.
    d. Name of subcontractor.
    e. Description of the Work covered.
    f. Scheduled date for Architect's final release or approval.
    g. Scheduled date of fabrication.
    h. Scheduled dates for purchasing.
    i. Scheduled dates for installation.
    j. Activity or event number.

1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. Architect's Digital Data Files: Electronic digital data files of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals.

1. Architect will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings and Project record drawings.

    a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
    b. Digital Drawing Software Program: The Contract Drawings are available in AutoCAD 2010.
    c. Contractor shall execute a data licensing agreement in the form of CAD Disk Transfer Agreement. Copy of the form is included at the end of this section.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
3. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

    a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the

Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 10 business days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 10 business days for review of each resubmittal.
4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 15 business days for initial review of each submittal.
5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow 10 business days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.

D. Submittal Format: The contractor shall submit all initial shop drawing submittals to the A/E by electronic files in PDF format via the OAKS management system. Identify and incorporate information in each electronic submittal file as follows:

1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
2. Name file with submittal number or other unique identifier, including revision identifier.

    a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).

3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
4. Transmittal Form for Electronic Submittals: Use electronic form acceptable to Owner**,** containing the following information:

    a. Project name.
    b. Date.
    c. Name and address of Architect.
    d. Name of Contractor.
    e. Name of firm or entity that prepared submittal.
    f. Names of subcontractor, manufacturer, and supplier.
    g. Category and type of submittal.
    h. Submittal purpose and description.
    i. Specification Section number and title.
    j. Specification paragraph number or drawing designation and generic name for each of multiple items.
    k. Drawing number and detail references, as appropriate.
    l. Location(s) where product is to be installed, as appropriate.
    m. Related physical samples submitted directly.
    n. Indication of full or partial submittal.
    o. Transmittal number, numbered consecutively.
    p. Submittal and transmittal distribution record.
    q. Other necessary identification.
    r. Remarks.

E. Options: Identify options requiring selection by Architect.

F. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.

G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

J. Submittals for work requiring models or patterns shall stipulate that the models or patterns become the property of the University after the work has been installed.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Post electronic submittals as PDF electronic files directly to designated Architect's email address.

    a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.

2. Submit electronic submittals via email as PDF electronic files.

    a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.

3. Submit Product Data before or concurrent with Samples.
4. Submit Product Data in the following format:

    a. PDF electronic file.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data**.**

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

    a. Identification of products.
    b. Schedules.
    c. Compliance with specified standards.
    d. Notation of coordination requirements.
    e. Notation of dimensions established by field measurement.
    f. Relationship and attachment to adjoining construction clearly indicated.
    g. Seal and signature of professional engineer if specified.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 34 by 36 inches
3. Submit Shop Drawings in the following format:

    a. PDF electronic file.

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

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:

    a. Generic description of Sample.
    b. Product name and name of manufacturer.
    c. Sample source.
    d. Number and title of applicable Specification Section.
    e. Specification paragraph number and generic name of each item.

3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.

4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

    a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
    b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

    a. Number of Samples: Submit full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.

6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

    a. Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned.

        1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
        2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
2. Manufacturer and product name, and model number if applicable.
3. Number and name of room or space.
4. Location within room or space.
5. Submit product schedule in the following format:

    a. PDF electronic file.

E. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 017700 "Closeout Procedures."

F. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

G. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

H. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

I. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

J. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

K. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

L. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

M. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

1. Name of evaluation organization.
2. Date of evaluation.
3. Time period when report is in effect.
4. Product and manufacturers' names.
5. Description of product.
6. Test procedures and results.
7. Limitations of use.

N. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

O. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

P. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

Q. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Project Closeout and Maintenance Material Submittals: See requirements in Section 017700 "Closeout Procedures."

C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

A. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action. The A/E shall submit all approved shop drawings, equipment operating manuals, parts lists, etc. by electronic files in PDF format via the OAKS management system.

B. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Submittals not required by the Contract Documents may be returned by the Architect without action.

END OF SECTION 013300

SECTION 014000 – QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

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

C. Related Sections include the following:

1. Division 01 Section "Execution" for repair and restoration of construction disturbed by testing and inspecting activities.
2. Divisions 02 through 49 Sections for specific test and inspection requirements.

1.3 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.

C. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.

D. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.

E. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

F. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

G. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.

H. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.

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

1.5 SUBMITTALS

A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:

1. Specification Section number and title.
2. Description of test and inspection.
3. Identification of applicable standards.
4. Identification of test and inspection methods.
5. Number of tests and inspections required.
6. Time schedule or time span for tests and inspections.
7. Entity responsible for performing tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

C. Reports: Prepare and submit certified written reports that include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

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

1.6 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

F. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.

1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

G. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

H. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:

1. Contractor responsibilities include the following:

a. Provide test specimens representative of proposed products and construction.
b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
f. When testing is complete, remove test specimens, assemblies, mockups, and laboratory mockups; do not reuse products on Project.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

1.7 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
2. Payment for these services will be made from testing and inspecting allowances, as authorized by Change Orders.
3. Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.

B. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.

1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."

D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

E. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.

6. Do not perform any duties of Contractor.

F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within 30 days of date established for the Notice to Proceed.

1. Distribution: Distribute schedule to Owner, Architect, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

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

1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
2. Comply with the Contract Document requirements for Division 01 Section "Cutting and Patching."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 017300 – EXECUTION

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 general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

1. Installation of the Work.
2. Cutting and patching.
3. Progress cleaning.
4. Protection of installed construction.
5. Correction of the Work.

B. Related Requirements:

1. Section 011000 "General Summary" for limits on use of Project site.
2. Section 012500 "Substitution Procedures" for submitting surveys.
3. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.

B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.4 INFORMATIONAL SUBMITTALS

A. Cutting and Patching Plan: Submit plan describing procedures at least 10 days prior to the time cutting and patching will be performed. Include the following information:

1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
3. Products: List products to be used for patching and firms or entities that will perform patching work.
4. Dates: Indicate when cutting and patching will be performed.

5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.

    a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.

B. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

1.5 QUALITY ASSURANCE

A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include the following:

    a. Electrical wiring systems.
    b. Operating systems of special construction.

3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:

    a. Sprayed fire-resistive material.
    b. Piping, ductwork, vessels, and equipment.
    c. Noise- and vibration-control elements and systems.

4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

B. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

C. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

A. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

1. Description of the Work.
2. List of detrimental conditions, including substrates.
3. List of unacceptable installation tolerances.
4. Recommended corrections.

D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect.

3.3 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.

F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.4 CUTTING AND PATCHING

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

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

C. Temporary Support: Provide temporary support of work to be cut.

D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 011100 "General Summary."

F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
6. Proceed with patching after construction operations requiring cutting are complete.

H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.5 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

    a. Use containers intended for holding waste materials of type to be stored.

4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

H. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

I. Limiting Exposures: Supervise construction operations to assure that no part of the construction; completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.6 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 017300

SECTION 017700 – CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

1. Substantial Completion procedures.
2. Final completion procedures.
3. Warranties.
4. Final cleaning.
5. Repair of the Work.

1.3 ACTION SUBMITTALS

A. Product Data: For cleaning agents.

B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.

C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.4 CLOSEOUT SUBMITTALS

A. Certificates of Release: From authorities having jurisdiction.

B. Certificate of Insurance: For continuing coverage.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.6 SUBSTANTIAL COMPLETION PROCEDURES

A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.

B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Owner. Label with manufacturer's name and model number where applicable.
5. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Advise Owner of pending insurance changeover requirements.
2. Complete startup and testing of systems and equipment.
3. Perform preventive maintenance on equipment used prior to Substantial Completion.
4. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
5. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
6. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
7. Complete final cleaning requirements, including touchup painting.
8. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for final completion.

1.7 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:

1. Submit a final Application for Payment.

2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.

B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.8 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize list of spaces in sequential order.
2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
3. Include the following information at the top of each page:

    a. Project name.
    b. Date.
    c. Name of Architect
    d. Name of Contractor.
    e. Page number.

4. Submit list of incomplete items in the following format:

    a. MS Excel electronic file. Architect will return annotated file.
    b. PDF electronic file. Architect will return annotated file.

1.9 SUBMITTAL OF PROJECT WARRANTIES

A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.

C. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.

1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Final Cleaning is the responsibility of the General Contractor (GC) and shall include cleaning of all horizontal surfaces, windows (inside and outside), light fixtures, convector cabinets, exposed piping and structure, equipment, HVAC grilles and plumbing fixtures and as indicated below.

C. Final clean-up shall be complete, suitable for immediate occupancy by the University.

D. Cleaning: Employ a competent janitorial subcontractor experienced in construction site cleaning for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

a. Remove tools, construction equipment, machinery, and surplus material from Project site.

b. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
c. Remove debris and surface dust from limited access spaces, including plenums, shafts, trenches, equipment vaults and similar spaces.
d. Sweep concrete floors broom clean in unoccupied spaces.
e. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
f. Wet mop hard surface flooring unless prohibited by the manufacturer.
g. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
h. Remove labels that are not permanent.
i. Leave Project clean and ready for immediate occupancy by the University.

E. Construction Waste Disposal: Comply with waste disposal requirements in Section 018113 "Sustainable Design Requirements."

3.2 REPAIR OF THE WORK

A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.

    a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.

3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 017700

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building or structure.
2. Salvage of existing items to be reused or recycled.

B. Related Requirements:

1. Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.
2. Section 017300 "Execution" for cutting and patching procedures.

C. Applicable Areas:

1. Roof Areas and associated work to be covered under this section: As indicated on Drawings.

1.3 DEFINITIONS

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

B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse.

C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.

D. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

E. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

1.4 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.5 PREINSTALLATION MEETINGS

A. Predemolition Conference: Conduct conference at Project site.

1. Inspect and discuss condition of construction to be selectively demolished.
2. Review structural load limitations of existing structure.
3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
5. Review areas where existing construction is to remain and requires protection.

1.6 INFORMATIONAL SUBMITTALS

A. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control. Indicate proposed locations and construction of barriers.

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

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's building manager's on-site operations are uninterrupted.
2. Interruption of utility services. Indicate how long utility services will be interrupted.
3. Coordination for shutoff, capping, and continuation of utility services.
4. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

C. Predemolition Photographs: Show existing conditions of adjoining construction, including finish surfaces, that might be misconstrued as damage caused by demolition operations. Comply with Section 013233 "Photographic Documentation." Submit before Work begins.

D. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

1.7 CLOSEOUT SUBMITTALS

A. Inventory: Submit a list of items that have been removed and salvaged.

1.8 QUALITY ASSURANCE

A. Provide Architect written notification of any adverse conditions which might affect the performance of the Work or the safety of occupants.

B. Contractor to maintain structural stability and safety during all phases of construction.

C. Perform Work according to applicable industry standards and comply with local, State and EPA regulations.

1.9 SEQUENCING AND SCHEDULING

A. Coordinate removal of all roofing with temporary protection over pedestrian doorways.

1.10 FIELD CONDITIONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted. Provide not less than 7days' notice to Owner of activities that will affect Owner's operations.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

C. Owner assumes no responsibility for condition of areas to be selectively demolished.

D. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
   1. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from authorities having jurisdiction.

E. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

F. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work. Present in buildings and structures to be selectively demolished. A report on the presence of hazardous materials is included in the Project Manual. Examine report to become aware of locations where hazardous materials are present.

   1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

G. Storage or sale of removed items or materials on-site is not permitted.

H. Accept the conditions of the jobsite as it exists and perform the Work accordingly.

1.11 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties. Notify warrantor before proceeding. Verify existing warranties with Owner prior to start of demolition.

   1. If possible, retain original Installer or fabricator to patch existing Work that is damaged during selective demolition. If it is impossible to engage original Installer or fabricator, engage another recognized experienced and specialized firm.

B. Notify warrantor on completion of selective demolition, and obtain documentation verifying that existing system has been inspected and warranty remains in effect. Submit documentation at Project closeout.

1.12 COORDINATION

A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

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

B. Standards: Comply with ANSI A10.6, ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 GENERAL

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

B. When structural elements are involved or encountered, consult with a structural engineer before removing any element that might cause a structural deficiency. Cost of structural engineer to be borne by the Contractor.

3.2 EXAMINATION

A. The Contractor shall review and visually survey areas specified for demolition before beginning demolition.
   1. Inspect underside of decking where visible seven (7) days prior to removal of roofing for potentially bad decking and for the presence of conduits, junction boxes, duct supports or other items that may be attached directly to the deck.
   2. Notify Architect seven (7) days in advance of removing any areas where deck may have to be replaced or where above ceiling work may have to be performed to mark or detach conduits, wires, cables, electrical boxes, duct or ceiling supports, etc. from the underside of the deck before removing decking or installing insulation fasteners.

B. Verify that utilities have been disconnected and capped before starting selective demolition operations.

C. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.

D. Verify that hazardous materials have been remediated before proceeding with building demolition operations.

E. Survey of Existing Conditions: Record existing conditions by use of measured drawings and preconstruction photographs or video.

   1. Comply with requirements specified in Section 013233 "Photographic Documentation."

2. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.
3. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

3.3 PREPARATION

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

1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
2. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction.
3. Protect existing site improvements, appurtenances, and landscaping to remain.
4. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.

B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
4. Cover and protect furniture, furnishings, and equipment that have not been removed.

C. Remove temporary barricades and protections where hazards no longer exist.

3.4 POLLUTION CONTROLS

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

1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.
2. Wet mop floors to eliminate trackable dirt and wipe down walls and doors of demolition enclosure. Vacuum carpeted areas.

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

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

C. Cleaning: Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.5 SELECTIVE DEMOLITION, GENERAL

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

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
5. Maintain fire watch during and for at least 2 hours after flame-cutting operations.
6. Maintain adequate ventilation when using cutting torches.
7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
10. Dispose of demolished items and materials promptly. Comply with requirements in Section 017419 "Construction Waste Management and Disposal."

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

C. Existing Facilities: Comply with building manager's requirements for using and protecting elevators, stairs, walkways, loading docks, building entries, and other building facilities during selective demolition operations.

D. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

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

F. Roofing: Remove no more existing roofing than can be covered in one day by new roofing. Refer to applicable Division 7 Sections for new roofing requirements.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
4. Burning: Do not burn demolished materials.

3.7 SALVAGE

A. Material as specified and recovered from demolition operations shall remain the property of building owner. With the owner's permission, other materials shall become the property of the Contractor. Material salvaged for building owner shall be placed in storage areas designated by building owner. Material that is not salvaged for building owner shall be removed from the site or discarded in an on-site disposal area designated by building owner.

3.8 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Silicone joint sealants.
2. Urethane joint sealants.
3. Latex joint sealants.
4. Acoustical joint sealants.

B. Related Sections:

1. Section 084113 “Aluminum Entrances and Storefront”
2. Section 088000 "Glazing" for glazing sealants.
3. Section 092900 "Gypsum Board" for sealing perimeter joints.

1.3 ACTION SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Samples for Initial Selection of Colors to Match Existing: Match existing for each type of sealant product. Coordinate with the architect to choose locations where small samples of each color to be matched can be taken. An original color may have faded due to sun exposure when compared to area without sun exposure. Color match the faded and non-faded areas. Provide 4 custom color for each area to be matched. Samples consist three (3) ½-inch wide by 6-inch long cured samples of each custom color.

C. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

D. Samples for Verification: For each kind and color of joint sealant required, provide Samples with joint sealants in 1/2-inch wide joints formed between two 6-inch long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

E. Joint-Sealant Schedule: Include the following information:

1. Joint-sealant application, joint location, and designation.
2. Joint-sealant manufacturer and product name.
3. Joint-sealant formulation.
4. Joint-sealant color.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer and testing agency.

B. Product Certificates: For each kind of joint sealant and accessory, from manufacturer.

C. Sealant, Waterproofing, and Restoration Institute (SWRI) Validation Certificate: For each sealant specified to be validated by SWRI's Sealant Validation Program.

D. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating that sealants comply with requirements.

E. Preconstruction Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:

1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.

F. Preconstruction Field-Adhesion Test Reports: Indicate which sealants and joint preparation methods resulted in optimum adhesion to joint substrates based on testing specified in "Preconstruction Testing" Article.

G. Field-Adhesion Test Reports: For each sealant application tested.

H. Warranties: Sample of special warranties.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

B. Source Limitations: Obtain each kind of joint sealant from single source from single manufacturer.

C. Product Testing: Test joint sealants using a qualified testing agency.

1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.
2. Test according to SWRI's Sealant Validation Program for compliance with requirements specified by reference to ASTM C 920 for adhesion and cohesion under cyclic movement, adhesion-in-peel, and indentation hardness.

D. Mockups: Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.

E. Preinstallation Conference: Conduct conference at Project site.

1.6 PROJECT CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F (5 deg C).
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.7 WARRANTY

A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

B. Special Manufacturer's Warranty: Manufacturer's standard form in which joint-sealant manufacturer agrees to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: 5 years from date of Substantial Completion.

C. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:

1. Movement of the structure caused by structural settlement or errors attributable to design or construction resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
2. Disintegration of joint substrates from natural causes exceeding design specifications.
3. Mechanical damage caused by individuals, tools, or other outside agents.
4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. VOC Content of Interior Sealants: Sealants and sealant primers used inside the weatherproofing system shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Architectural Sealants: 50 g/L.
2. Sealant Primers for Nonporous Substrates: 250 g/L.
3. Sealant Primers for Porous Substrates: 775 g/L.

C. Low-Emitting Interior Sealants: Sealants and sealant primers used inside the weatherproofing system shall comply with the testing and product requirements of the California Department of

D. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

1. Suitability for Immersion in Liquids. Where sealants are indicated for Use I for joints that will be continuously immersed in liquids, provide products that have undergone testing according to ASTM C 1247. Liquid used for testing sealants is deionized water, unless otherwise indicated.

E. Stain-Test-Response Characteristics: Where sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

F. Suitability for Contact with Food: Where sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.

G. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range and Custom colors where required to match adjacent finishes. Custom colors were indicated on the drawings.

2.2 SILICONE JOINT SEALANTS

A. Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 100/50, for Use NT.

1. Products: For stone, porous stone, decorative precast and similar materials that area susceptible to staining, subject to compliance with requirements, provide one of the following:

1) DowSil 790.
2) Percora 890FTS.

2. Products: Subject to compliance with requirements, provide one of the following:

a. DowSil 790.
b. GE Advanced Materials - Silicones; SilPruf LM SCS2700.
c. Sika Corporation, Construction Products Division; SikaSil-C990.
d. Tremco Incorporated; Spectrem 1.
e. Substitutions: See Section 01 6000 - Product Requirements.

B. Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 50, for Use NT.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Sealant for stone, porous stone, decorative precast and similar materials that area susceptible to staining.

1) DowSil 756 SMS Building Sealant.
2) Percora 864 NST.

b. Substitutions: See Section 01 6000 - Product Requirements. Manufacturer’s product data must specifically include the porous substrates.

2. Products: Subject to compliance with requirements, provide one of the following:

a. Dow Corning Corporation; 756 SMS.
b. GE Advanced Materials - Silicones; SilGlaze II SCS2800.
c. Sika Corporation, Construction Products Division; SikaSil-C995.
d. Tremco Incorporated; Spectrem 2.
e. GE Silicones SCS9000 SilFruf NB Non-staining Silicone Weatherproofing Sealant.
f. Substitutions: See Section 01 6000 - Product Requirements.

C. Single-Component, Nonsag, Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, for Use NT.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Dow Corning Corporation; 799
b. GE Advanced Materials - Silicones; UltraGlaze SSG4000.
c. Tremco Incorporated; Proglaze SSG.
d. Substitutions: See Section 01 6000 - Product Requirements.

D. Multicomponent, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type M, Grade NS, Class 50, for Use NT.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Tremco Incorporated; Spectrem 4TS.
b. Substitutions: See Section 01 6000 - Product Requirements.

2.3 SILICONIZED LATEX JOINT SEALANTS

A. Latex Joint Sealant: Acrylic latex or siliconized acrylic latex, ASTM C 834.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Sherwin Williams 950A Siliconized Acrylic Latex Caulk.
b. GE Painters Pro Siliconized Acrylic Latex Caulk.
c. Pecora Corporation; AC-20+.
d. Substitutions: See Section 01 6000 - Product Requirements.

2.4 JOINT SEALANT BACKING

A. General: Provide sealant backings of material that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), Type B (bicellular material with a surface skin) or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.5 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

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

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:

    a. Concrete.
    b. Masonry.
    c. Unglazed surfaces of ceramic tile.

3. Remove laitance and form-release agents from concrete.
4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:

    a. Metal.
    b. Glass.
    c. Glazed surfaces of ceramic tile.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.
4. Provide flush joint profile where indicated per Figure 8B in ASTM C 1193.
5. Provide recessed joint configuration of recess depth and at locations indicated per Figure 8C in ASTM C 1193.

    a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

G. Acoustical Sealant Installation: At sound-rated assemblies and elsewhere as indicated, seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and with manufacturer's written recommendations. COORDINATE LANGUAGE WITH WALL TYPE DRAWINGS

3.4 FIELD QUALITY CONTROL

A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:

1. Extent of Testing: Test completed and cured sealant joints as follows:

   a. Perform 10 tests for the first 1000 feet (300 m) of joint length for each kind of sealant and joint substrate.
   b. Perform 1 test for each 1000 feet (300 m) of joint length thereafter or 1 test per each floor per elevation.

2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.

   a. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.

3. Inspect tested joints and report on the following:

   a. Whether sealants filled joint cavities and are free of voids.
   b. Whether sealant dimensions and configurations comply with specified requirements.
   c. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion passes sealant manufacturer's field-adhesion hand-pull test criteria.

4. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant fill, sealant configuration, and sealant dimensions.
5. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.

B. Evaluation of Field-Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.5 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.6 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.7 JOINT-SEALANT SCHEDULE

A. Joint-Sealant Application: Porous Materials: exterior joints in vertical surfaces and horizontal nontraffic surfaces. Porous materials include stone, porous stone, decorative precast and similar materials that are susceptible to staining.

1. Joint Locations:

    a. Control and expansion joints at brick, cement masonry units or precast cladding to porous material.
    b. Joints at storefront, curtainwalls frames to porous materials.
    c. Joints at metal panels and trim to porous materials.
    d. Perimeter joints at frames of doors, windows, and louvers adjacent to porous materials.
    e. Control and expansion joints in ceilings and other overhead surfaces adjacent to porous materials.
    f. Other joints as indicated.
    g. Small mockups are to be made in inconspicuous areas to verify stain resistance. Coordinate mockup locations with architect.

2. Silicone Joint Sealant: Non-staining, single component, nonsag, neutral curing.
3. Verify expected movement with architect to determine class 50 or 100/50.
4. Joint-Sealant Color: [Custom Color], [As selected by Architect from manufacturer's full range of colors].

B. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal nontraffic surfaces.

1. Joint Location (where sealant will be painted):

    a. Joints at door and window frames.
    b. Joints in gypsum board that is not susceptible to significant movement.
    c. Joints at moldings and trim.
    d. Other joints as indicated.

2. Joint Sealant: Interior painters siliconized acrylic latex sealant.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range.

END OF SECTION 079200

SECTION 084113 - 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 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Removal, preparation and installation of all new aluminum storefront systems including indicated doors, framing, insulated glazing, and all associated flashings, counter flashings, backer rod and sealants.
2. Replace all indicated aluminum storefront systems and units to match existing framing patterns (vertical and horizontal) fixed and operable units, structure depth and profile of members, finish and colors. All new systems to be thermally broken, 1-inch glazing. Replace all through wall, head, and sill flashings that are part of the opening.
3. Storefront framing, flashing, sealants.
4. Manual-swing entrance doors.
5. Door hardware.

B. Related Requirements:

1. Section 081743 “Fiberglass Reinforced Polyester Flush Doors.
2. Section 087100 "Door Hardware".
3. Section 088000 "Glazing".

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: For aluminum-framed entrances and storefronts. Include plans, elevations, sections, full-size details, and attachments to other work.

1. Include details of provisions for assembly expansion and contraction and for draining moisture occurring within the assembly to the exterior.
2. Include full-size isometric details of each type of vertical-to-horizontal intersection of aluminum-framed entrances and storefronts, showing the following:

a. Joinery, including concealed welds.
b. Anchorage.
c. Expansion provisions.

d. Glazing.
e. Flashing and drainage.

3. Show connection to and continuity with adjacent thermal, weather, air, and vapor barriers.
4. Include point-to-point wiring diagrams showing the following:

a. Power requirements for each electrically operated door hardware.
b. Location and types of switches, signal device, conduit sizes, and number and size of wires.

C. Samples for Initial Selection: For units with factory-applied color finishes.

D. Samples for Verification: For each type of exposed finish required, in manufacturer's standard sizes.

E. Fabrication Sample: Of each vertical-to-horizontal intersection of assemblies, 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.
5. Flashing and drainage.

F. Entrance Door Hardware Schedule: Prepared by or under supervision of supplier, detailing fabrication and assembly of entrance door hardware, as well as procedures and diagrams. Coordinate final entrance door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of entrance door hardware.

1.5 INFORMATIONAL SUBMITTALS

A. Product Test Reports: For aluminum-framed entrances and storefronts.

B. Energy Performance Certificates: For aluminum-framed entrances and storefronts, accessories, and components, from manufacturer.

1. Basis for Certification: NFRC-certified energy performance values for each aluminum-framed entrance and storefront.

C. Sample Warranties: For special warranties.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For aluminum-framed entrances and storefronts to include in maintenance manuals.

B. Maintenance Data for Structural Sealant: For structural-sealant-glazed storefront to include in maintenance manuals. Include ASTM C1401 recommendations for post-installation-phase quality-control program.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

1.8 WARRANTY

A. Special Warranty: Installer agrees to repair or replace components of aluminum-framed entrances and storefronts that do not comply with requirements or that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures, including, but not limited to, excessive deflection.
b. Noise or vibration created by wind and thermal and structural movements.
c. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
d. Water penetration through fixed glazing and framing areas.
e. Failure of operating components.

2. Warranty Period: Two years from date of Substantial Completion.

B. Special Finish Warranty: Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of factory-applied finishes within specified warranty period.

1. Deterioration includes, but is not limited to, the following:

a. Color fading more than 5 Hunter units when tested according to ASTM D2244.
b. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Warranty Period: 20 years from date of Substantial Completion.

C. Special Finish Warranty, Anodized Finishes: Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of anodized finishes within specified warranty period.

D. Warranty Period: 10 years from date of Substantial Completion

1.9 COORDINATION

A. Refer to Section 124119 Selective Demolition.

B. Arrange work schedule so as not to interfere with Owner's operations.

C. Remove no more existing work than what can be replaced in one day so that building interior remains watertight and weathertight.

D. Provide temporary secure and weather tight systems at all times that storefront or doors are not in placed when the contractor is not present working on this project to ensure the building is protected from intruders and the weather.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain all components of aluminum-framed entrance and storefront system, including framing and accessories, from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. General Performance: Comply with performance requirements specified, as determined by testing of aluminum-framed entrances and storefronts representing those indicated for this Project without failure due to defective manufacture, fabrication, installation, or other defects in construction.

1. Aluminum-framed entrances and storefronts shall withstand movements of supporting structure, including, but not limited to, twist, column shortening, long-term creep, and deflection from uniformly distributed and concentrated live loads.
2. Failure also includes the following:

a. Thermal stresses transferring to building structure.
b. Glass breakage.
c. Noise or vibration created by wind and thermal and structural movements.
d. Loosening or weakening of fasteners, attachments, and other components.
e. Failure of operating units.

B. Structural: Test according to ASTM E330/E330M as follows:

1. When tested at positive and negative wind-load design pressures, storefront assemblies, including entrance doors, do not evidence deflection exceeding specified limits.
2. When tested at 150 percent of positive and negative wind-load design pressures, storefront assemblies, including entrance doors and anchorage, do not evidence material failures, structural distress, or permanent deformation of main framing members exceeding 0.2 percent of span.
3. Test Durations: As required by design wind velocity, but not less than 10 seconds.

C. Air Infiltration: Test according to ASTM E283 for infiltration as follows:

1. Fixed Framing and Glass Area:

a. Maximum air leakage of 0.06 cfm/sq. ft. a static-air-pressure differential of 1.57 lbf/sq. ft.

2. Entrance Doors:

a. Single Doors: Maximum air leakage of 0.5 cfm/sq. ft. at a static-air-pressure differential of 1.57 lbf/sq. ft.

D. Water Penetration under Static Pressure: Test according to ASTM E331 as follows:

1. No evidence of water penetration through fixed glazing and framing areas, including entrance doors, when tested according to a minimum static-air-pressure differential of 20 percent of positive wind-load design pressure, but not less than 6.24 lbf/sq. ft.

E. Water Penetration under Dynamic Pressure: Test according to AAMA 501.1 as follows:

1. No evidence of water penetration through fixed glazing and framing areas when tested at dynamic pressure equal to 20 percent of positive wind-load design pressure, but not less than 6.24 lbf/sq. ft.
2. Maximum Water Leakage: According to AAMA 501.1, No uncontrolled water penetrating assemblies or water appearing on assemblies' normally exposed interior surfaces from sources other than condensation. Water leakage does not include water controlled by flashing and gutters, or water that is drained to exterior.

F. Thermal Movements: Allow for thermal movements resulting from ambient and surface temperature changes.

1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

G. Comply with the applicable standards of ANSI/AAMA 101 and the following.

1. AAAMA 10.
2. AAMA 2603.
3. AAMA 609/610.

2.3 STOREFRONT SYSTEMS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Tubelite Inc.
2. EFCO Corporation.
3. Kawneer North America, an Arconic company.
4. Oldcastle BuildingEnvelope™

B. Framing Members: Manufacturer's extruded- or formed-aluminum framing members of thickness required and reinforced as required to support imposed loads.

1. Exterior Framing Construction: Thermally broken.
2. Interior Vestibule Framing Construction: Nonthermal.
3. Profile: Match existing.
4. Glazing System: Retained mechanically with gaskets on four sides.
5. Glazing Plane: Match existing.
6. Finish: Match existing

   Dark Bronzes Anodized finish.

7. Fabrication Method: Either factory or field-fabricated stick system.
8. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
9. Steel Reinforcement: As required by manufacturer.

C. Backer Plates: Manufacturer's standard, continuous backer plates for framing members, if not integral, where framing abuts adjacent construction.

D. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

2.4 ENTRANCE DOOR SYSTEMS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. EFCO Corporation.
2. Kawneer North America, an Arconic company, basis of design T350 for exterior, for 350 interior.
3. Oldcastle BuildingEnvelope™.
4. Tubelite Inc.

B. Entrance Doors: Manufacturer's standard glazed entrance doors for manual-swing or automatic operation.

1. Door Construction: 1-3/4-inch minimum overall thickness, with minimum 0.125-inch thick, extruded-aluminum tubular rail and stile members. Mechanically fasten corners with reinforcing brackets that are deeply penetrated and fillet welded or that incorporate concealed tie rods.

a. Thermal Construction: High-performance plastic connectors separate aluminum members exposed to the exterior from members exposed to the interior.

2. Door Design: Medium stile; 3.5 inch nominal width and 10 inch bottom rail.

3. Reinforcement: Reinforce for door hardware including panic hardware, door closers, and automatic door operators.

4. Aluminum doors shall have tight hairline joints where rails are fitted against stiles and shall be fastened by means of tensioned steel tie rods in top and bottom rails. Doors shall have an adjusting mechanism in the top rail to provide for minor clearance adjustments.

5. Glazing Stops and Gaskets: Square, snap-on, extruded-aluminum stops and preformed gaskets.

a. Provide nonremovable glazing stops on outside of door.

C. WARRANTY

1. Warrant doors, frames, and factory hardware against failure in materials and workmanship, including excessive deflection, faulty operation, defects in hardware installation, and deterioration of finish or construction in excess of normal weathering.

2. Warranty Period: Ten years starting on date of shipment. In addition, a limited lifetime (while the door is in its specified application in its original installation) warranty covering failure of corner joinery, core deterioration, delamination or bubbling of door skin.

2.5 ENTRANCE DOOR HARDWARE

A. Entrance Door Hardware: Hardware not specified in this Section is specified in Section 087100 "Door Hardware."

B. General: Provide entrance door hardware and entrance door hardware sets indicated in door and frame schedule to comply with requirements in this Section.

1. Salvage all maglock, push to exit buttons, presence sensors, door position switches and other security hardware for reuse on the new doors.
2. Salvage door operators, cores and closers and return to the Owner.
3. Entrance Door Hardware Sets: Provide quantity, item, size, finish or color indicated, and named manufacturers' products.
4. Sequence of Operation: Remove and reinstall electrified door hardware function, sequence of operation, and interface with other building control systems to remain unchanged.
5. Opening-Force Requirements:

a. Egress Doors: Not more than 15 lbf to release the latch and not more than 30 lbf to set the door in motion and not more than 15 lbf to open the door to its minimum required width.
b. Accessible Interior Doors: Not more than 5 lbf to fully open door.

C. Designations: Requirements for design, grade, function, finish, quantity, size, and other distinctive qualities of each type of entrance door hardware are indicated in "Entrance Door Hardware Sets" Article. Products are identified by using entrance door hardware designations as follows:

1. Named Manufacturers' Products: Manufacturer and product designation are listed for each door hardware type required for the purpose of establishing minimum requirements. Manufacturers' names are abbreviated in "Entrance Door Hardware Sets" Article.
2. References to BHMA Standards: Provide products complying with these standards and requirements for description, quality, and function.

D. Hinges:

1. Spacing:

a. For doors up to 87 inches high, provide three hinges per leaf.
b. For doors more than 87 and up to 120 inches high, provide four hinges per leaf.

2. Butt Hinge: Storefront door manufacturer’s commercial quality butt hinges and electric transfer butt hinges. Stainless steel, 5 knuckle, 2 ball bearing, button tips, non-removable pins by use of set screw, 4-1/2”x4”, fully morticed into door style and jamb, screw anchorage, finish to match doors.

3. Continuous Hinges: Storefront manufacturer’s commercial quality hinge. Fully mortice into door style and jamb, screw anchorage, finish to match doors.

E. Closers: As specified in Section 087100 "Door Hardware.

F. Door Stops: As specified in Section 087100 "Door Hardware.

G. Automatic Door Operators: Section 087113 "Automatic Door Operators” and door hardware schedule. Section includes actuator buttons and obstruction sensors.

H. Door Push: Manufacturer’s 1” diameter radius bent bar style hardware. Designed to match pull. Color to match doors.

I. Door Pulls: Manufacturer’s 1” diameter offset aluminum style hardware. 3-1/2” projection from face of door. 8” from center-to-center of thru-bolt mounting. Designed to match push. Color to match doors.

J. Weather Stripping: Manufacturer's standard replaceable components.

1. Sliding Type: AAMA 701/702, made of wool, polypropylene, or nylon woven pile with nylon-fabric or aluminum-strip backing.

2. Meeting stiles on pairs of doors shall be equipped with an adjustable astragal utilizing wool pile with polymeric fin.

3. The door weathering on a single acting hung door and frame (single or pairs) shall be comprised of a thermoplastic elastomer weathering on a tubular shape with a semi-rigid polymeric backing.

K. Sill Sweep Strips

1. EPDM blade gasket sweep strip in an aluminum extrusion applied to the interior exposed surface of the bottom rail with concealed fasteners (necessary to meet specified performance tests). Color to match door.

L. Thresholds: As specified in Section 087100 "Door Hardware.

2.6 GLAZING

A. Glazing: Comply with Section 088000 "Glazing."

B. Glazing Gaskets: Comply with Section 088000 "Glazing."

C. Glazing Sealants: Comply with Section 088000 "Glazing."

D. Weatherseal Sealants: ASTM C920 for Type S; Grade NS; Class 25; Uses NT, G, A, and O; chemically curing silicone formulation that is compatible with structural sealant and other system components with

which it comes in contact; recommended by structural-sealant, weatherseal-sealant, and structural-sealant-glazed storefront manufacturers for this use.

1. Color: Match structural sealant.

2.7 MATERIALS

A. Sheet and Plate: ASTM B209 (ASTM B209M).

B. Extruded Bars, Rods, Profiles, and Tubes: ASTM B221 (ASTM B221M).

C. Extruded Structural Pipe and Tubes: ASTM B429/B429M.

D. Structural Profiles: ASTM B308/B308M.

E. Steel Reinforcement:

1. Structural Shapes, Plates, and Bars: ASTM A36/A36M.
2. Cold-Rolled Sheet and Strip: ASTM A1008/A1008M.
3. Hot-Rolled Sheet and Strip: ASTM A1011/A1011M.
4. Primer: Manufacturer's standard zinc-rich, corrosion-resistant primer complying with SSPC-PS Guide No. 12.00; applied immediately after surface preparation and pretreatment. Select surface preparation methods according to recommendations in SSPC-SP COM and prepare surfaces according to applicable SSPC standard.

2.8 ACCESSORIES

A. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.

1. Use self-locking devices where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration.
2. Reinforce members as required to receive fastener threads.
3. Use exposed fasteners with countersunk Phillips screw heads provided by the storefront manufactured, finished to match storefront framing.
4. Use 300 series stainless steel for door hardware.

B. Anchors: Three-way adjustable anchors with minimum adjustment of 1 inch that accommodate fabrication and installation tolerances in material and finish compatible with adjoining materials and recommended by manufacturer.

1. Concrete and Masonry Inserts: Hot-dip galvanized cast-iron, malleable-iron, or steel inserts complying with ASTM A123/A123M or ASTM A153/A153M requirements.

C. Concealed Flashing: Dead-soft, 0.018-inch thick stainless steel, complying with ASTM A240/A240M, of type recommended by manufacturer].

D. Bituminous Paint: Cold-applied bituminous coating containing no asbestos, formulated for 30-mil thickness per coat, and meeting Master Painters Institute - MPI # 35 Bituminous Coating

E. Rigid PVC Filler.

2.9 FABRICATION

A. Form or extrude aluminum shapes before finishing.

B. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.

C. Fabricate components that, when assembled, have the following characteristics:

1. Profiles that are sharp, straight, and free of defects or deformations.
2. Accurately fitted joints with ends coped or mitered.
3. Physical and thermal isolation of glazing from framing members.
4. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
5. Provisions for field replacement of glazing for vision glass and for spandrel glazing or metal panels.
6. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.

D. Mechanically Glazed Framing Members: Fabricate for flush glazing without projecting stops.

E. Structural-Sealant-Glazed Framing Members: Include accommodations for using temporary support device to retain glazing in place while structural sealant cures.

F. Storefront Framing: Fabricate components for assembly using shear-block system.

G. Entrance Door Frames: Reinforce as required to support loads imposed by door operation and for installing entrance door hardware.

1. At interior and exterior doors, provide compression weather stripping at fixed stops.

H. Entrance Doors: Reinforce doors as required for installing entrance door hardware.

I. Hardware Preparation: Factory prepare hollow-metal doors and frames to receive templated mortised hardware, and electrical wiring; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.

1. Prepare all doors for the installation of new hardware.
2. Prepare all doors for the installation of existing hardware that is being salvaged and reinstalled.

J. Weather Stripping: Provide weather-stripping locked into extruded grooves in door panels or frames as indicated on manufacturer's drawings and details

K. Metal Protection:

1. Where aluminum is in contact with dissimilar metals, protect against galvanic action by painting contact surfaces with materials recommended by manufacturer for this purpose or by installing nonconductive spacers.
2. Where aluminum is in contact with concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

L. Entrance Door Hardware Installation: Factory install entrance door hardware to the greatest extent possible. Cut, drill, and tap for factory-installed entrance door hardware before applying finishes.

M. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

2.10 ALUMINUM FINISHES

A. Color Anodic Finish: AAMA 611, [A-M12C22A42/A44, Class I, 0.018 mm or thicker.

1. Color: As selected by Architect from full range of industry colors and color densities.

2.11 SOURCE QUALITY CONTROL

A. Structural Sealant: Perform quality-control procedures complying with ASTM C1401 recommendations, including, but not limited to, assembly material qualification procedures, sealant testing, and assembly fabrication reviews and checks.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

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

3.2 PREPARATION

A. Prepare surfaces that are in contact with structural sealant according to sealant manufacturer's written instructions, to ensure compatibility and adhesion. Preparation includes, but is not limited to, cleaning and priming surfaces.

3.3 INSTALLATION

A. General:

1. Comply with shop drawings and manufacturer's written instructions.
2. Do not install damaged components.
3. Fit joints to produce hairline joints free of burrs and distortion.
4. Rigidly secure nonmovement joints.
5. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent impeding movement of moving joints.
6. Seal perimeter and other joints watertight unless otherwise indicated.
7. Set sill threshold and door threshold in bed of sealant to produce a weathertight installation.
8. Where aluminum is in contact with dissimilar metals, protect against galvanic action by painting contact surfaces with materials recommended by manufacturer for this purpose or by installing nonconductive spacers.
9. Bottom of all storefront framing members, sill members and bottom storefront door rails, and where aluminum is set at sidewalk or pavement level, protect against corrosion by painting contact surfaces with bituminous paint meeting Master Painters Institute - MPI # 35 Bituminous Coating.

B. Install components plumb, square and true in alignment with established lines and grades.

C. Install operable units level and plumb, securely anchored, and without distortion. Adjust weather-stripping contact and hardware movement to produce proper operation.

D. Install glazing as specified in Section 088000 "Glazing."

E. Install weatherseal sealant according to Section 079200 "Joint Sealants" and according to sealant manufacturer's written instructions to produce weatherproof joints. Install joint filler behind sealant as recommended by sealant manufacturer.

1. All interior and exterior joints shall be sealed.

F. Entrance Doors: Install doors to produce smooth operation and tight fit at contact points.

1. Exterior Doors: Install to produce weathertight enclosure and tight fit at weather stripping.
2. Field-Installed Entrance Door Hardware: Install surface-mounted entrance door hardware according to entrance door hardware manufacturers' written instructions using concealed fasteners to greatest extent possible.

3.4 ERECTION TOLERANCES

A. Erection Tolerances: Install aluminum-framed entrances and storefronts to comply with the following maximum tolerances:

1. Plumb: 1/8 inch in 10 feet and 1/4 inch in 40 feet.
2. Level: 1/8 inch in 20 feet and 1/4 inch in 40 feet.
3. Alignment:

a. Where surfaces abut in line or are separated by reveal or protruding element up to 1/2 inch wide, limit offset from true alignment to 1/16 inch.
b. Where surfaces are separated by reveal or protruding element from 1/2 to 1 inch wide, limit offset from true alignment to 1/8 inch.
c. Where surfaces are separated by reveal or protruding element of 1 inch wide or more, limit offset from true alignment to 1/4 inch.

4. Location: Limit variation from plane to 1/8 inch in 12 feet; 1/2 inch over total length.

3.5 ADJUSTING, CLEANING AND PROTECTION

A. Clean aluminum surfaces immediately after installing aluminum-framed flush entrance doors and storefronts. 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 084113

CUYAHOGA COMMUNITY COLLEGE

CAPITAL AND CONSTRUCTION

TEMPLATE SPECIFICATION

DOOR HARDWARE (08-71-00)

PART 1 - GENERAL

1.1 SUMMARY

A. General

1. Furnish each item of hardware for proper installation and operation of the door to meet the requirements and intent of the Contract Documents.

2. The Contractor and Hardware Supplier shall be responsible for determining specific sizes and compatible models for all hardware.

B. Section includes commercial door hardware for the following:

1. Swinging doors.
2. Electrified door hardware.

C. Products furnished but not installed under this section.

1. Final replacement cores and keys: All final cores and keying to be provided by Contractor and Installed by Owner.

2. Power supplies for locks where manufacturer does not permit use of a third- party power supply.

D. Products not provided under this section.

1. Card readers, motion sensors, security door position switches, emergency push buttons, and power supplies shall be provided by the Electrical Contractor. Coordinate with Electrical Contractor for installation and factory preparation of door and frame.

E. Related requirements

1. All related Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications Sections, apply to this Section.
2. Section 084113 "Aluminum-Framed Entrances and Storefronts" for entrance door hardware, including cylinders.
3. Section 087113 "Automatic Door Operators" for low-energy power operators and low-energy power-assist operators.

1.2 REFERENCES

A. Abbreviations and Acronyms

1. ANSI - American National Standards Institute

2. BHMA - Builders Hardware Manufacturers Association
3. DHI - Door Hardware Institute
4. IC – Interchangeable (Lock) Core
5. OBC - Ohio Building Code
6. OFC - Ohio Fire Code
7. OSHA - Occupational Safety and Health Administration
8. NFPA - National Fire Prevention Association
9. NRTL - Nationally Recognized Testing Laboratory (See OSHA Website)
10. UL - Underwriter's Laboratories, Inc.
11. WDMA - Window and Door Manufacturers Association

B. Definitions

C. Codes and Standards

1. Comply with all applicable Codes including but not limited to:
   a. OBC - Current Version.
   b. OFC - Current Version.
   c. NFPA 70 - National Electrical Code - Version as referenced by OBC.
   d. NFPA 72 - National Fire Alarm and Signaling Code - Version as referenced by OBC.
   e. NFPA 80 - Fire Doors and Other Opening Protectives - Version as referenced by OBC.
2. Unless otherwise noted - perform all work in accordance with industry “Best Practices” and Standards such as those created by ANSI, BHMA, DHI, UL, WDMA, etc.
   a. Meeting the minimum requirements of Code shall take precedence over all requirements.
   b. Provide the more stringent requirement of the applicable references listed where they do not cause conflicts with code, quality, or the operation of the door. *e.g. the manufacturer does not specifically require reinforcement for a particular piece of hardware, but the SDI standard does. The reinforcement should be provided*.

c. Specific requirements are listed throughout this specification for reference and to convey design intent. These requirements are not intended to be interpreted as being the entirety of the code or design requirements, The Contractor and Supplier shall provide all materials, listed or unlisted, to meet the design intent and comply with the requirements of Code. Where a section of this Specification lists a specific Standard it is not intended to indicate that it is the only Standard which applies to the associated work.

3. Contractors are encouraged to consult the publication “Intrusion Sensor Application Notebook” by GE Security for best-practices related to the preparation of doors and frames for security Door Position Switches.

D. Accessibility Requirements

1. Where hardware is identified as requiring compliance with accessibility standards, comply with Chapter 11 of the Ohio Building Code, ADA and ICC/ANSI A117.1 including modifications made by the OBC.

E. Owner Standards

1. Tri-C Fire Alarm Systems Design Assistance Manual

2. Tri-C Physical Security Systems Design Assistance Manual

F. Manufacturers Published Instructions.

1.3 ADMINISTRATIVE REQUIREMENTS

A. Coordination

1. Coordinate with others as required by the Construction Manager or Owners Designee. See Section Execution/Interface with Other Work for additional requirements.
2. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
3. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.
4. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.
5. Existing Openings: Where hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide proper door operation.

B. Pre-installation Meetings

1. Conduct a pre-installation conference at the project site with the Contractor, Electrical Contractor, Telecommunications Contractor, Hardware Manufacturer’s Representative, Hardware Vendor, Construction Manager, Architect and College Representative reviewing the installation of all hardware.

    a. Review methods and procedures related to installation of hardware.

    b. Review electrified hardware with Security System provider including voltages, connections, and any other information required for installation.

    c. Review and modify the construction schedule, if necessary, to reflect the work effort required to install, adjust, clean, and test the hardware.

C. Keying Schedule / Plan

1. The Contractor shall prepare and submit keying schedule prepared by or under the supervision of supplier, detailing College’s final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations.

2. The Keying Schedule / Plan shall be developed in coordination with the

College. Required coordination meetings / keying conferences shall be scheduled by the hardware supplier.

3. The process shall begin early enough to ensure that systems (key plans, keyways, cores) are compatible with College's current Master Keying System, that adequate time is allotted to phasing, and that the College retains control of all keys and cores. The keying schedule / plan shall be completed no later than the 25-percent construction completion point.

1.4 SUBMITTALS – ACTION / INFORMATIONAL

A. Provide Submittals in accordance with Conditions of Contract and Division 01 Specification sections and this section.

B. Submittal Sequence

1. Submit final schedule at earliest possible date particularly where acceptance or hardware schedule must precede fabrication of other work that is critical in the project construction schedule. Include with the schedule the product data, samples, shop drawings of other work affected by door hardware and other information essential to the coordinated review of the schedule.

C. Product Data

1. Include manufacturer's technical product data for each item of door hardware, product cut sheets, installation instructions, maintenance of operation parts and finish and other information necessary to show compliance with requirements.

2. Include installation details, material descriptions, dimensions of individual components and profiles, door fabrication templates, and finishes.

3. Include specific manufacturer's literature, exploded parts views, etc., for each type of door hardware to include in the operations and maintenance manuals.

D. Shop Drawings - General

1. Provide factory wiring diagrams, project specific interconnection diagrams, and jumper settings for all electrical hardware.

2. Clearly delineate door hardware scope vs scope provided by others.

E. Shop Drawings - Final Door hardware schedule

1. General

a. The Door Hardware Schedule shall be prepared by or under the supervision of a Certified AHC (Architectural Hardware Consultant) employed by the supplier.

b. Provide final hardware schedule coordinated with doors, frames and related work to ensure proper size, thickness, hand, function and finish of door hardware.

c. Include all pertinent information essential for a coordinated review of the Door Hardware Schedule.

2. Format

a. Schedule shall be formatted as recommended by the Door Hardware Institute (DHI.)

1) Organize schedule into “hardware sets” indicating complete designations of every item required for each door or opening. Include the following information for each group:

2) Explanation of all abbreviations, symbols and codes contained in schedule. Include a list of manufacturers codes.

3) Door number and location - use the same scheduling sequence, door / room numbers, etc., as found in the Contract Documents.

4) Door and frame type, size, material, and swing.

5) Description of item (i.e. Hinges, Lock, etc.) Manufacturer Name, Series Model Number and Detailed Part Number of each item. Include type, style, function, size, label, hand and finish of each item.

6) Quantities of each item.

7) Mounting locations, fastenings and other pertinent information.

8) For electrical locks indicate continuous duty and the failure condition (Fail-Safe, Fail-Secure).

3. Keying Schedule: Prepared by or under the supervision of Installer's Architectural Hardware Consultant, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations that are coordinated with the Contract Documents.

F. Samples

1. Upon request, samples of each type of hardware with options and finish indicated shall be submitted. Items will be returned to the supplier.

G. Certificates

1. Upon request, provide evidence that required door hardware is listed and labeled by a Nationally Recognized Testing Laboratory (NRTL) for its intended use.

H. LEED Submittals:

1. Product Data or other documentation for each product/material highlighting pre-consumer and post-consumer recycled content information. per unit of product.

1.5 INFORMATIONAL SUBMITTALS

A. Qualifications Data: For Installer and Architectural Hardware Consultant.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Supplier of products and an employer of workers trained and approved by product manufacturers and of an Architectural Hardware Consultant who is available during the course of the Work to consult Contractor, Architect, and Owner about door hardware and keying.

1) Warehousing Facilities: In Project's vicinity.
2) Scheduling Responsibility: Preparation of door hardware and keying schedule.

3) Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

B. Architectural Hardware Consultant Qualifications: A person 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. Contractor shall provide the names and locations of at least three projects, of similar size and scope, within the last 3 years, where devices have performed satisfactorily, in the manner intended, for a period of not less than 18 months. Submit names and phone numbers of points of contact at each site.

1.7 SUBMITTALS - CLOSEOUT

A. Operation and Maintenance Data: For each type of door hardware to include in maintenance manuals.

B. Schedules: Final door hardware and keying schedule

C. Software

1. For projects with more than 20 doors - the Door Hardware Provider shall furnish an electronic copy of the project database and import the data into the Owner’s BEST Keystone system.

2. The database file shall include bitting, door number, room number, and room name.

1.8 QUALITY ASSURANCE

A. General

1. Requirements for design, grade, function, finish, size and other distinctive characteristics of each type of door hardware are as indicated by naming acceptable manufacturer's products for each door hardware type required.

2. All hardware shall be ANSI Grade 1 unless otherwise noted.

B. Manufacturers

1. See Appendix A for approved manufacturers and models.

C. Suppliers

1. A recognized architectural door hardware supplier that has a record of successful in-service performance for supplying door hardware similar in quality, type and quality to that indicated for this Project.

2. Supplier employs an experienced Architectural Hardware Consultant (with a continuing education updated seal) who is available for consultation to the College, College's Representative, Architect, Engineer, Construction Manager and Contractor, at reasonable times during the course of the Work.

3. Supplier is required to meet with Owner, as part of the "pre-submittal keying conference" to finalize keying requirements and to obtain final instructions in writing.

D. Installers

1. Contractor shall have a minimum of 5 years' experience in projects of similar size and scope.

2. The Contractor shall provide the names and locations of at least three projects, of similar size and scope, within the last 3 years, where devices have performed satisfactorily, in the manner intended, for a period of not less than 18 months. Submit names and phone numbers of points of contact at each site.

1.9 SUBSTITUTION LIMITATIONS

A. Substitution requests shall be in accordance with the general provision sections. Refer to Instructions to Bidders for additional requirements.

B. Data to be included shall be the following:

1. Number of years' the proposed substitution has been produced.

2. List of ten (10) installations of similar scope to the work herein, where proposed product was used, including name, location, and date of installation.

3. Full description of proposed system for consideration as an approved substitution.

   a. Include in the substitution submittal a side by side comparison of the basis of specification and the proposed substitution that illustrates, but is not limited to, tested cycles, grades, finishes, options, warranty, references and manufacturing locations.

C. Incomplete substitution requests shall be returned as rejected /not approved.

1.10 DELIVERY, STORAGE, AND HANDLING

A. General

1. Legibly mark and label each package, indicating item and location for which it is intended. Each marking shall correspond to the number shown on the approved hardware schedule. Each package shall contain all the required screws, bolts and fasteners necessary for installation of each hardware item.

2. Packaging of door hardware is responsibility of supplier. As material is received by hardware supplier from various manufacturers, sort and repackage in containers clearly marked with appropriate hardware set number to match set numbers of approved hardware schedule. Two or more identical sets may be packed in same container. Include basic installation instructions with each item or package.

3. Deliver individually packaged door hardware items promptly to place of installation (shop or Project site).

4. Provide secure lock-up for door hardware delivered to the Project, but not yet installed. Control handling and installation of hardware items that are not immediately replaceable so that completion of the Work will not be delayed by hardware losses both before and after installation.

5. Inventory hardware jointly at the jobsite with the representative of the hardware supplier and hardware installer until each is satisfied that the count is correct.

B. Construction keys and cores

1. All locks shall be provided with construction cores for use prior to installation of permanent cores.

2. Construction keys shall be tagged and plainly marked on face of envelope

with the key change number, door designation and all other required information. Coordinate requirements for tagging / marking with College.

C. Permanent keys and cores

1. The Contractor shall furnish but not directly receive any permanent keys, cores, or control keys. The Contractor shall coordinate with the College and Manufacturer so that keys and cores are shipped directly to the College's Facility Manager responsible for that campus.

2. The lock Manufacturer shall place each core and / or set of keys into an envelope and label same with door numbers for rooms or areas. Mark boxes of keys with project name and location.

1.11 FIELD OR SITE CONDITIONS

A. Existing Conditions

1. Where new hardware components are scheduled for application to existing construction or where modifications are required to reuse existing door hardware, field verify the existing conditions and coordinate the installation to suit.

1.12 WARRANTY

A. General

1. Furnish a written guarantee which shall cover the periods stated below from and after the after final acceptance by the Owner.

2. For a period of one (1) year any hardware failing to comply with warranty shall be removed and replaced with new material including labor at no cost to Owner. After 1 year the remaining Manufacturer's published warranty shall apply.

PART 2 - PRODUCTS

2.1 GENERAL

A. Provide new door hardware for each door to comply with requirements in this Section, the Door Hardware Schedule at the end of this section, and required to meet the operational sequence as specified herein and/or other Contract Documents.

B. Where an opening requires hardware, which is not specifically listed in this Specification, the Contractor shall provide appropriate hardware of similar quality and rating in coordination with Architect / Owner.

C. Provide hardware that meets the following standards for durability.

1. Standard Duty

a. Standard duty hardware shall be used in all locations except where otherwise noted.

2. Heavy Duty

a. Includes doors that meet the requirements for both Medium Frequency and High Frequency openings, as recommended by DHI, and are opened more than 50 times a day (18,000 times per year.)

b. Heavy duty hardware shall be provided where indicated on the door hardware schedule / matrix and in the following locations:

1) All exterior doors

2) Main entrances to large office areas/suites

3) Cross corridor doors

4) Central storage rooms

5) Public restroom doors

6) Stairwell doors

D. Door preparation

1. Standards

a. ANSI/SDI A250.8

1) Door preparation and reinforcement shall be in accordance with Manufacturers recommendations and ANSI/SDI A250.8.

E. Hardware finishes

1. Standards

a. ANSI/BHMA A156.18

2. General

a. Base metal and finish shall comply with ANSI/BHMA A156.18. Where manufacturer does not list ANSI/BHMA numbers provide finish with equivalent appearance and base material.

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. Appearance of Finished Work: Variations in appearance of abutting or

adjacent pieces are acceptable if they are within one-half of the range of approved samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved samples and are assembled or installed to minimize contrast.

d. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

3. Types

a. Provide the listed finishes unless incompatible with the anticipated environment including but not limited to: shower rooms, toilet rooms, kitchens, janitor rooms, pool areas, or other areas with high humidity or corrosive materials.

1) In all cases provide appropriate hardware which is resistant to corrosion or other damage from the environmental conditions it is to be installed in.

FINISHES		
BHMA #	DESCRIPTION	WHERE REQUIRED
626	Satin Chromium Plated on brass base metal	Locksets, Bolts
628	Satin aluminum, clear, anodized finish on aluminum base metal.	Continuous Hinges
630	Satin stainless-steel finish on 300 series stainless steel base metal.	Exit Devices, Conventional hinges for exterior doors, exterior wall and floor stops.
652	Satin chromium plated finish on steel base metal.	Conventional Hinges for most interior locations
689	Aluminum Painted	Closers, Overhead Holders and Stops

2.2 HINGES

A. General

1. See Appendix A, Table A.1 for acceptable products.

2. Template Requirements

a. Except for hinges and pivots to be installed entirely (both leaves) into

wood doors and frames, provide only template-produced units.

3. Where required to clear adjacent casing, trim, and wall conditions and allow full door swing, provide wide throw hinges of minimum width required.

4. Fasteners

   a. Finish shall match hardware.

   b. Follow manufacturers printed installation instructions. In the absence of these instructions comply with the following:

   c. Philips head screws shall be used and shall be flush and even with the surface of the hinge. For wood doors and frames - wood screws shall be used. For fire-rated wood doors – “threaded-to-the-head” wood screws shall be used. For metal doors and frames, install machine screws into drilled and tapped holes.

B. Conventional Hinges

1. Standards

   a. BHMA A156.1 - Butts and Hinges

   b. BHMA A156.7 - Template Hinge Dimensions

2. General

   a. Provide fully mortised hinges whenever possible.

   b. Conventional hinges shall be Five (5) knuckle, ball bearing, swaged hinges.

3. Quantity - Provide the following, unless otherwise indicated:

NUMBER OF CONVENTIONAL HINGES	
DOOR HEIGHT	QUANTITY
UP to 60"	2
61" to 90"	3
91"-120"	4
121"-150"	5

4. Size

   a. Hinge size, height, width, and thickness shall be as recommended by the Manufacturer for the specific opening.

5. Hinge Pins

    a. Provide matching non-rising loose pins for in-swinging doors and doors without locks.

    b. Provide matching non-removable pins (NRP) where indicated on the schedule/matrix.

C. Pivots

1. General

    a. Provide number and size as recommended by manufacturer, applicable standards, and DHI guidelines.

D. Continuous Hinges

1. Standards

    a. ANSI/BHMA A156.26 - Continuous Hinges

2. General

    a. Size shall be as recommended by manufacturer, applicable standards, and DHI guidelines for the specific opening.

    b. Continuous hinge type shall be as recommended by manufacturer, applicable standards, and DHI guidelines for the weight and use of the door.

    c. Provide with manufacturer's cut-outs for separate mortised power transfers and/or mortised automatic door bottoms where they occur.

2.3 ELECTRIC POWER TRANSFER DEVICES

A. Standards

1. Device shall be listed and labeled by a Nationally Recognized Testing Laboratory for its intended purpose and for use with 3-hour fire rated doors.

B. Concealed Electric Power Transfer (EPT) Devices

1. The EPT shall:

    a. Be a heavy-duty device which is separate and in addition to the minimum required hinges.

    b. Shall not be load bearing.

    c. Shall have ten (10) or more conductors minimum 24AWG or two (2) conductors 18AWG and four (4) conductors minimum 24AWG.

2. Back boxes for devices shall be mortised into the frame and completely flush with the frame and door. Devices which do not fully mortise into the frame or door are not acceptable. *Note: the Stanley EPT product is not acceptable for this reason.*

C. Electric Hinges

1. Electric hinges may be used only for connection to an RTE switch when there is no lock control for that leaf.

D. Door Loops / Cords

1. Door Loops shall only be permitted for retrofits of existing panic hardware and require approval of the College on a per opening basis.

2. Requirements

a. Door loop shall be armored and classified by the manufacturer as “heavy duty” with lengths available from 7” to 36”.

b. Wire quantity and size: 8-conductors, 18AWG

c. Attach loops using fine thread machine screws, lock washers, and nuts and not with single “sheet metal” style screws.

2.4 LOCKS AND LATCHES

A. Standards

1. ICC/ANSI A 117.1 - Accessible and Usable Buildings and Facilities, Section 404 Doors and Doorways.

2. ANSI/BHMA A156.2 - Bored and Preassembled Locks and Latches.

3. ANSI/BHMA A156.25 - Electrified Locking Devices

4. ANSI/BHMA A156.12 - Interconnected Locks & Latches

5. ANSI/SDI A250.8 – Recommended Specifications for Standard Steel Doors and Frames.

6. Device shall have formal documentation of additional cycle testing which demonstrates that the device is capable of exceeding the applicable ANSI standard.

7. Accessible Locks and Latches

a. Where openings are identified as requiring compliance with accessibility standards, the following specific requirements shall apply:

1) Handles, pulls, latches, locks, and other operable parts shall have a

shape that is easy to grasp with one hand and does not require tight grasping, pinching, or twisting of the wrist to operate.

2) Operable parts of such hardware shall be 38 inches minimum and 42 inches maximum above the floor.

B. General Requirements

1. See Appendix A, Table A.2 for acceptable products.

2. Unless otherwise noted, all locksets shall be of the same manufacturer.

3. Provide devices with all applicable trim, roses, escutcheons, and other customary hardware.

4. Trim: Provide "J-Style" lever handles on all locks unless specifically indicated to be a knob. Handles shall be fabricated from cast stainless steel.

5. Backset shall be 2-3/4 inches (70 mm), unless otherwise indicated.

6. Rabbeted Meeting Doors: Provide special rabbeted front and strike on locks for rabbeted meeting stiles.

7. Cylinders: Locks shall incorporate cylinders and tailpieces listed by Manufacturer as fully compatible with the Best IC 7 pin small format interchangeable core (SFIC.)

8. Lock Functions.

   a. Coordinate lock functions with Owner.

9. Fire Rated Doors.

   a. All prep work / modifications to fire rated doors shall be done at the factory so as to maintain the Listing of the door.

   b. Unless otherwise noted, all locks installed on fire rated doors, shall remain latched when they are in the unlock state. Electric Strikes shall not be used on fire rated doors without approval of the Owner.

   c. Where door is indicated as fire rated the lock device shall be listed and labeled by a Nationally Recognized Testing Laboratory for use with the specific rating of the fire rated door.

10. Lock Throw

    a. Comply with testing requirements for length of bolts required for labeled fire doors.

C. Strikes

1. Unless specified to be electrified, provide manufacturer's standard

recommended strike, with strike box, for each latch or lock bolt.

2. Unless the Manufacturer recommends otherwise the Strike shall:

    a. Have a curved lip extended to protect frame.

    b. Have a finish which matches the door hardware.

3. Other configurations when required by Manufacturer or field conditions:

    a. Flat-Lip Strikes: For locks with three-piece antifriction latch bolts, as recommended by manufacturer.

    b. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.

    c. Aluminum-Frame Strike Box: Manufacturer's special strike box fabricated for aluminum framing.

D. Mortise Locksets

1. Standards

    a. ANSI/BHMA A156.13 - Mortise Locks & Latches.

    b. Mortise locksets shall be series 1000, Grade 1 for all doors.

2. General

    a. Trim: Provide escutcheon for key-side of door.

    b. Devices shall be capable of being field configured for handing and / or one of several ANSI Functions.

    c. Where mortise locks are installed in high-humidity locations or where exposed to the exterior on both sides of the opening, provide non-ferrous mortise lock case.

E. Door Bolts (Automatic and Manual)

1. Standards

    a. ANSI/BHMA A156.16 (2013) Auxiliary Hardware

    b. ANSI/BHMA A156.3 (2014) Exit Devices

2. General

    a. For non-rated pairs of doors, provide manual surface bolts for any leaf designated as “fixed.”

    b. For fire-rated doors provide automatic flush bolts and coordinators.

c. Provide dust proof strike boxes at the floor and manufacturers recommended strike box for head of frame.

2.5 EXIT DEVICES

A. Standards

1. ANSI/BHMA A156.3 - Exit Devices

2. Panic Exit Devices: Devices that are listed and labeled by a NRTL as a Panic Exit Device.

3. Fire Exit Devices: Devices complying with NFPA 80 and NFPA 252 that are listed and labeled by a NRTL as a Fire Exit Device.

4. Additional Cycle Testing: Device shall have formal documentation of additional cycle testing which demonstrates that the device is capable of exceeding the applicable ANSI standard.

5. OBC: The door and hardware shall comply with OBC Chapter 10 requirements for “Opening Force.” Locks shall not require use of a key, tool or special knowledge for egress operation.

B. General

1. See Appendix A, Table A.3 for acceptable products.

2. Unless otherwise noted, all exit devices shall be of the same manufacturer.

3. Exit Devices shall be Rim Devices using “Touch Bars” and not “Crossbars.”

4. Provide roller strikes for Rim Exit Devices.

5. Cylinders: Provide rim cylinder with College Standard IC. Cylinder finish, including spacers and/or rings, shall match the rest of the door and/or hardware as called out in the schedule.

6. Where vertical rod Exit Devices are used - the following shall apply:

a. Provide surface rod type devices with protective covers for rods. Concealed rod devices shall not be permitted.

C. Removable Mullions

1. General

a. Provide a heavy duty, removable mullion as recommended by the manufacturer of the exit device.

b. Where removable mullions are used, they shall be provided with the College’s standard keyed cylinders as the means of removal.

2. For Removable Mullions with Electric Strikes - coordinate with electrician for installation of a disconnect plug at the point where the wiring enters the mullion from the top frame.

2.6 ELECTRIFIED HARDWARE

A. General

1. See Appendix A, Table A.4 for acceptable products.

2. Provide electrical door hardware as indicated in the schedule. Coordinate door and frame preparation and with other parties as required by Contract Documents.

3. Where called out in the schedule for electric double doors, unless otherwise noted, both doors shall be electrically controlled and monitored.

4. Electrical Requirements

   a. Locks shall require a maximum of 2amps peak and a maximum of .5amps holding at 24VDC.

   b. All locks shall be rated for continuous duty.

   c. Provide plug type connections for lock and field wiring to simplify maintenance and repairs.

   d. Power Supply: The device shall be capable of being powered from any power supply, meeting the electrical requirements, and Listed for the purpose. The manufacturers published instructions shall not require a specific power supply for the device.

5. Switches

   a. Provide request-to-exit switches for all electrically controlled or monitored doors. See Security drawings for monitored doors.

   b. Provide latch bolt monitors as required by the security or door hardware drawings.

   c. Switches shall be an integral and standard feature provided by the lockset manufacturer. Third party modifications shall not be permitted.

6. Failure Modes

   a. “Fail-Secure” Definition: The lock requires power to be unlocked and removing power from the lock results in it defaulting to the (secure) locked state.

      1) Where used: All locks shall be configured as Fail-Secure except where required by Code to be fail-safe.

2) Operation: The door has both a mechanical and electrical lock function (which may be combined in an electrified lockset.) The door is normally locked mechanically and controlled only by the electrical locking hardware.

b. "Fail-Safe"

1) Definition: The lock requires power to be locked and removing power from the lock results in it defaulting to the (safe) unlocked state.

2) Where used: All fire rated stairwell doors with locks which always allow egress but prevent reentry from the stairwell back onto the floor shall be configured as "Fail-Safe." Note: Maglocks and Magnetic Door Holders are Fail-Safe by nature of their operation.

3) Operation: The door has both a mechanical and electrical lock function (which may be combined in an electrified lockset.) The door is normally unlocked mechanically, or mechanically "dogged" in the case of exit hardware. The door is normally controlled only by the electrical locking hardware.

7. Override Functionality

a. If the electric locking hardware fails in the unlocked state – the door shall be able to be manually locked with a key.

b. If the electric locking hardware fails in the locked state – the door shall be able to be manually unlocked with a key.

B. Electric Locksets

1. Provide electrified versions of approved Locksets.

2. Provide a request-to-exit switch, integral to the handle, on the secured (non-key) side.

C. Electrified Exit Devices

1. Provide electrified versions of approved Exit Devices.

a. Electrified Trim: Where indicated - provide exit device with manufacturers approved Electrified Trim.

b. Electric Latch Retraction: Where indicated – provide exit device with manufacturers approved Electric Latch Retraction functionality. Latch retraction shall be done using a "quiet" retraction motor and not a solenoid.

2. Provide a request-to-exit switch, integral to the touch bar, on the secured (non-key) side.

D. Electric Strikes

1. Standards

a. A156.31 - Electric Strikes and Frame Mounted Actuators

2. General

a. Electric Strikes shall not be used on fire-rated or smoke-rated doors.

b. All electric strikes shall include a strike box.

c. Provide a request-to-exit switch, integral to the lockset handle or panic bar, on the secured (non-key) side whenever using an Electric Strike.

E. Maglocks

1. Maglocks shall have a minimum holding strength of 1200lbs. The door shall not be able to be opened by a person without the use of a card. The Contractor shall be responsible for assessing each specific door and providing a Maglock which is the proper type, size, and holding strength. The Contractor shall consider the height, weight, and potential torque while assessing the door. Shock absorbing sex-bolts may be used where appropriate.

2. Maglocks shall include an integral Door Position Switch. Bond sensors may not be used for this purpose.

3. Maglock override – A key-switch shall be used to interrupt Maglock power if the system controls fail.

a. For each maglock door provide an electrically operated key-switch with the following specifications: Double Pole Double Throw (DPDT), maintained, non-key-trapping, tamper resistant, with the College's Standard Core.

b. The key-switch should be located inside the secured area except where areas are secured entirely by maglocks. For these areas, key switches must be located on the outside of doors as required to facilitate access all the way to the security control equipment.

2.7 AUXILIARY LOCKS (DEAD LOCKS)

A. Standards

1. ANSI/BHMA A156.36 - Auxiliary Locks

B. General

1. Provide auxiliary locks as indicated in Specifications and on Drawings.

C. Approved Models:

1. Bored Auxiliary locks shall be of the same manufacturer as the lockset.

2.8 PADLOCKS

A. Standards

1. ASTM F883 - Standard Performance Specification for Padlocks

B. General

1. Cylinder: Padlocks shall use the Best IC 7 pin small format interchangeable core (SFIC.)

2. Material: Solid Brass body with hardened steel shackle.

3. Size: Shackle diameter shall be a minimum of 5/16" and the length of the shackle opening shall be 2" unless otherwise noted.

2.9 LOCK CYLINDERS AND KEYING

A. General

1. Lock cylinders and keys shall be an extension of the existing Best, 7 pin key system using (SFIC) Small Format Interchangeable Cores.

2. All keys shall be nickel silver, Best, with the bow stamped with the key code and with "State of Ohio 3345.13 prohibits duplication."

3. Package Marking: Each hardware package shall be legibly labeled with the set number and indicate the door for which it is intended, or, hardware sets shall be packaged and marked with the door for which they are intended.

B. Quantity

1. For pricing purposes provide 3 keys per cylinder, 6 master keys for each set, and 6 grand master keys. Actual key counts per opening will be verified during keying conference.

C. Elevator Keying Requirements

1. The fireman's return and other operating switches shall use the FEO-K1 key to control the operation.

D. Electrified Security Door Locks

1. Override key cylinders for electrically controlled doors, including cylinder dogging keys, shall be keyed to a separate "Security" sub master. Coordinate requirements with College.

2.10 DOOR CLOSERS

A. Standards

1. ANSI/BHMA A156.4 (2013) Door Controls - Closers
2. Cycle testing as determined by a third-party testing agency
3. Capable of exceeding 10,000,000 cycles for high frequency doors
4. Capable of exceeding 5,000,000 cycles for standard frequency doors
5. Where closers are indicated for doors required to be Accessible - provide adjustable units complying with ANSI A117.1 for door opening force and delayed action closing.

B. General

1. See Appendix A, Table A.5 for acceptable products.
2. Provide surface mounted door closers on all exterior exits, public corridor doors, doors specified with security devices, and elsewhere as indicated in the hardware schedule and/or as shown on the drawings.
3. All closers shall be mounted out of the view of the public wherever possible. Unless specifically indicated otherwise, mount closers on non-public side of door, (inside of room, not in hallways).
4. Factory finish shall match other door hardware.
5. Coordinate the installation of closers with doors specified to receive hold open devices.
6. Where closers are specified for door pairs, provide bar type coordinators to allow for the proper operation of both doors.
7. Provide drop plates and accessories as required for the closers to work with doors with lites.

C. Size

1. Except as otherwise specifically indicated, comply with the manufacturer's recommendations for size of closer depending on size of door, exposure to weather and anticipated frequency of use.
2. Where parallel arms are used for closers, provide closer unit one size larger than recommended for use with standard arms.

D. Arms

1. Heavy duty arms shall be forged, rigid, of suitable type and handing required and/or recommended by the manufacturer.

2.11 HOLDERS

A. Magnetic door holders

1. Standards

a. Device shall be listed and labeled by a Nationally Recognized Testing Laboratory for the purpose it is being used.

b. Frame mounted combination door holder / smoke detector units have historically had higher maintenance needs and shall not be used without approval of the College.

2. General

a. See Appendix A, Table A.5 for acceptable products.

b. Provide Listed Magnetic Hold Open Devices where required by the hardware schedule or as shown on the Fire Alarm Drawings.

c. The door release device shall be a magnetic Door Holder, powered by 24VDC, with an approximate holding force of 35 lbs. The door portion shall include a stainless steel pivotal mounted armature with shock absorbing nylon bearing. Door holders shall be capable of being either surface, flush, semi flush, or floor mounted as required.

d. Provide wall extension kits at locations as required.

3. Additional mounting requirements: For maximum support, back boxes shall be framed-in using two additional pieces of horizontal wall stud material so box is anchored on three sides.

2.12 STOPS

A. Standards

1. ANSI/BHMA A156.16 - Auxiliary Hardware

2. ANSI/BHMA A156.8 - Door Controls - Overhead Stops and Holders

B. General

1. See Appendix A, Table A.6 for acceptable products.

2. Provide door stops wherever an opened door or any item of hardware thereon would strike a wall, column, equipment or other parts of building construction. For concrete, masonry or quarry tile construction, use lead expansion shields for mounting door stops.

3. Omit stops where floor mounted door holders are required and where automatic operated doors occur.

C. Wall Stops (Bumpers)

1. Where cylindrical locks with turn pieces or pushbuttons occur, equip wall bumpers (rubber pads having concave face) to receive turn piece or button.

2. Provide appropriate door mounted stop on doors in individual toilets where floor or wall mounted stops cannot be used.

3. Wall Stops shall be installed to impact either the trim or impact the door within the leading half of its width.

D. Floor Stops

1. Provide floor stops; Where drywall partitions occur or at exterior outswing doors where stop can be installed in concrete. Provide stop mated to concrete anchor set in 76mm (3-inch) core-drilled hole and filled with quick-setting cement.

2. Do not mount floor stops in walking paths, where they will impede traffic, or pose a trip hazard.

3. Floor stops, where used, must be installed within 4-inches of the wall face and impact the door within the leading half of its width.

E. Overhead Stops and Holders

1. Provide Grade 1 overhead concealed slide type: stop-only at rated doors and security doors, hold-open type with exposed hold- open on/off control at all other doors requiring overhead door stops.

2. Overhead holders shall be of sized as recommended by holder manufacturer for each width of door.

2.13 TRIM

A. General

1. See Appendix A, Table A.6 for acceptable products.

B. Door Protection

1. Fasteners: Provide manufacturer's standard exposed fasteners for door trim units consisting of either machine screws or self-tapping screws.

2. Fabricate edge trim of stainless steel to fit door thickness in standard lengths or to match height of protection plates.

3. Fabricate kick plates not more than 2 inches less than door width on the push side by 8" tall.

4. Metal Plates: Stainless steel, .050 (U.S. 16 gauge.)

C. Push/Pull

1. Exposed Fasteners: Provide manufacturer's standard exposed fasteners for installation, thru-bolted for matched pairs but not for single units.

2. Concealed Fasteners: Provide manufacturer's special concealed fastener system for installation, thru-bolted for matched pairs but not for single units.

D. Silencers

1. Provide neoprene or rubber silencers for all doors. Silencers shall be fabricated for drilled-in application to frame.

B. Latch Protectors

1. Provide latch protectors as shown on the Drawings.

2.14 THRESHOLDS, WEATHER STRIPPING, AND GASKETING

A. Standards

1. ANSI/BHMA A156.21 - Thresholds

2. ANSI/BHMA A156.22 - Door Gasketing and Edge Seal Systems

B. General

1. See Appendix A, Table A.6 for acceptable products.

C. Where Used

1. Provide thresholds for Means of Egress Doors. Threshold shall be a maximum of 1/2 inch (13 mm) high. Bevel raised thresholds shall have a slope of not more than 1:2.

2. Provide rain drips, door sweeps, and continuous weather-strip gasketing for all exterior doors.

3. Provide smoke-labeled gasketing on all fire-rated doors and/or smoke-labeled doors in accordance with applicable codes.

4. Provide light or sound gasketing on interior doors where indicated or scheduled.

D. Application

1. Perimeter Gasketing - Apply to head and jamb, forming seal between door and frame.

2. Meeting Stile Gasketing - Fasten to meeting stiles, forming seal when doors are closed.

3. Door Bottoms - Apply to bottom of door, forming seal with threshold when door is closed.

4. Provide additional protection as needed to ensure electrical door hardware is protected from water damage.

2.15 FASTENERS:

A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood and sheet metal screws. Provide screws according to commercially recognized industry standards for application intended, except aluminum fasteners are not acceptable unless specifically approved by the A/E on a case by case basis. Provide Phillips flat head screws with finished heads to match surface of door hardware, unless otherwise indicated.

B. Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow metal door and frame construction, provide sleeves for each through bolt.

C. Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

D. Steel Machine or Wood Screws: For the following fire rated applications:

1. Mortise hinges to doors.

2. Strike plates to frames.

3. Closers to doors and frames

E. Fasteners for Wood Doors: Comply with requirements of DHI WDHS.2 “Recommended Fasteners for Wood Doors.”

2.16 ASSEMBLY OR FABRICATION

A. Manufacturer’s nameplate: Do not provide manufacturer’s products that have manufacturer’s name or trade name displayed in a visible location, when the door is in the closed position, except in conjunction with required fire rated labels and as otherwise approved by the Architect.

PART 3 - EXECUTION

3.1 PREPARATION

A. Door and Frame Preparation

1. Ensure that doors and frames are prepared for devices prior to delivery.

2. Check shop drawings of other work and coordinate with Div. 28 Contractor to confirm that adequate provisions are made for locating and installing door security hardware, signs, and other hardware to comply with indicated requirements.

3. Coordinate with door and frame manufacturer/supplier and provide descriptions/details of preparations required for frames to accept hardware.

4. Ensure there is a sufficient cavity or box for wiring connections.

5. Reinforcement for all hardware for metal doors and frames shall be installed at the factory and be made to template and furnished with machine screws. The face of locks shall be beveled to match the bevel edge of metal doors.

6. Ensure mounting holes, mounting assemblies, and wire pathways are provided. Unless in conflict with Manufacturer's or Testing Laboratory requirements provide the following:

   a. For doors with electrified handsets or panic hardware provide a minimum 3/8" pathway hole from the transfer device to the lock hardware.

   b. In wooden doors, at each end of the pathway hole, provide a larger hole ¾" – 1" deep to accommodate wire splices.

   c. For doors / frames with Door Position Switches (DPS) provide holes, mounting assemblies (top of door as needed), and wire pathways. The security drawings show which doors will have a DPS. The security typical drawings show the location in the frame where contacts should be mounted. Confirm DPS model and size with Security System provider. Provide mounting locations in accordance with the "Intrusion Sensor Application Notebook."

3.2 SALVAGE

A. Salvaged Items for Reuse in the Work: Salvage items for reuse and handle as follows:

- Clean salvaged items.
- Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
- Store items in a secure area until installation.
- Protect items from damage during transport and storage.
- Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.

B. Salvaged Items for Owner's Use: Salvage items for Owner's use and handle as follows:

- Clean salvaged items.
- Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
- Store items in a secure area until delivery to Owner.
- Transport items to Owner's storage area designated by Owner.
- Protect items from damage during transport and storage.
- Items include:
  - All door hardware. Owner reserves first right of refusal. Items that the Owner does not want shall be removed from the site and legally disposed of by the contractor. Coordinate with Owner.

3.3 INTERFACE WITH OTHER WORK

A. Coordinate installation with all trades, millwork, finish hardware, door frames and electrical.

B. Cast Concrete: Coordinate layout and installation of recessed hardware with building construction. Cast anchoring inserts into concrete.

C. Coordinate layout and installation of electrified door hardware with connections to related systems. Examples include but are not limited to door hold open devices connected to the building fire alarm system, and electric locks and power transfer devices connected to the security system.

1. Pull Strings:

a. Door Contractor shall provide pull strings in the following locations for all electrically controlled doors:

b. From mortised lock to hinge

c. From hinge to wall cavity above door frame

d. Between the transfer device opening (door side) and the lock

e. Between the transfer device opening (frame side) and the status sensor hole if present

f. Between the transfer device opening (frame side) and the wall cavity

2. Where frames will be grouted, coordinate with the Electrical Contractor for installation of raceway inside frame.

3. Coordinate with and assist the Electrical Contractor for connection and testing of electrical hardware.

a. Door Contractor shall be present while the Electrical Contractor connects the wiring to any hardware which requires disassembly or removal from the door.

D. Templates

1. Obtain and distribute to the parties involved templates for doors, frames and other work specified to be factory prepared for installing door hardware.

2. For all doors supply hardware templates with machine screws where available and paper templates for all others.

3.4 ADJUSTMENTS

A. Adjust all hardware per manufacturer's instructions and to meet OBC requirements.

B. Set overhead holders for 110 degrees opening, unless limited by building construction or equipment.

3.5 INSTALLATION OF PERMANENT CORES

A. The College shall install all permanent keys and cores.

B. The Contractor shall install all permanent keys and cores in coordination with the Facility Manager. The Contractor shall sign out the control key and a requested quantity of cores at the beginning of the work shift. The control key and any uninstalled cores must be returned at the end of each day. Failure to return the control key may result in the Contractor being responsible for costs associated with re-keying the campus.

3.6 DOOR HARDWARE SETS

A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

B. The supplier is responsible for handing and sizing all products and providing the correct option for the appropriate door type and material where more than one is presented in the hardware sets. Quantities listed are for each pair of doors, or for each single door.

C. Manufacturer's Abbreviations

1.AA – Assa Abloy
2.BE – Best
3.DY – Dynalock
4.GJ – Glynn Johnson
5.IN - Interlogix
6.IV – Ives
7.HA – Hager Roton
8.HI - HID
9.MK – McKinney

10. LC – LCN
11. LC – LCN
12. NG – National Guard Products
13. NO – Norton
14. PA – Phi Apex
15. PE – Pemko
16. ST – Stanley Hardware
17. PE – Pemko
18. RF – Rixson Door
19. RO – Rockwood
20. SA – Sargent
21. SC – Schlage
22. SD - Security Door Control
23. SU - Securitron
24. TC – Trimco
25. VO – Von Duprin
26. ZE – Zero

Hardware Sets

Set 1.0
Doors: C100J Exterior
Type: 6'-0" x 7'-0" paired aluminum door and frame
Finish: Dark Bronze for hinges, push, pull, closer, operator, presence sensor. Clear anodized for threshold only.

2	Continuous Geared Hinge	157XY	IV
2	Push Bar – per section 84113		
2	Pull - per section 84113		
1	Surface Closer with drop plate	4040XP	LC
1	Automatic Door Operator	9500 series	LC
2	Actuator Switch	8310 series	LC
1	Presence Sensor	8310-877	LC
1	Thermal Threshold	600 series	ZE
1	Weatherstrip – per section 84113		
2	Weathersweep – per section 84113		

Remove and reinstall existing maglocks, presence sensors, push to exit button, and door position switches. Reuse or provide new wiring to match existing, as necessary. Door security to be fully functional at the end of each workday.

Set 2.0

Doors: B156A Exterior

Type: 6'-0" x 7'-0" paired aluminum door and frame
Finish: Dark Bronze for hinges, push, pull, closer, operator, presence sensor. Clear anodized for threshold only.

2	Continuous Geared Hinge	157XY	IV
2	Push Bar – per section 84113		
2	Pull - per section 84113		
1	Surface Closer with drop plate	4040XP	LC
1	Automatic Door Operator	9500 series	LC
2	Actuator Switch	8310 series	LC
2	Vandal Resistant Surface Mounted Box	8310 series	LC
1	Presence Sensor	8310-877	LC
1	Thermal Threshold	600 series	ZE
1	Weatherstrip – per section 84113		
2	Weathersweep – per section 84113		

Remove and reinstall existing maglocks, presence sensors, push to exit button, and door position switches. Reuse or provide new wiring to match existing, as necessary. Door security to be fully functional at the end of each workday.

Set 3.0

Doors: B156A Interior Vestibule

Type: 6'-0" x 7'-0" paired aluminum door and frame
Finish: Dark Bronze for hinges, push, pull, closer, operator, presence sensor. Clear anodized for threshold only.

6	Butt Hinge	5BB1HW	IV
2	Push Bar – per section 84113		
2	Pull - per section 84113		
1	Surface Closer with drop plate	4040XP	LC
1	Automatic Door Operator	9500 series	LC
2	Actuator Switch	8310 series	LC
1	Presence Sensor	8310-877	LC
1	Threshold	600 series	ZE
1	Weatherstrip – per section 84113		
2	Weathersweep – per section 84113		

Set 4.0
Doors: C100B Exterior

Type: 6'-0" x 7'-0" paired aluminum door and frame
Finish: Dark Bronze for hinges, push, pull, closer, operator, presence sensor. Clear anodized for threshold only.

2	Continuous Geared Hinge	157XY	IV
2	Maglocks	M62D	SU
1	Push-To-Exit Button	EEB3N	SU
1	Presence/Egress Sensor	SDC MD-31DB	SD
1	Power Supply	SEC-BPS-12-24-1	SU
2	Pull	110x73	RO
2	Surface Closer with drop plate	4040XP	LC
1	Thermal Threshold	600 series	ZE
1	Weatherstrip – per section 84113		
2	Weathersweep – per section 84113		

Remove and reinstall existing door position switches. Reuse or provide new wiring to match existing, as necessary. Door security to be fully functional at the end of each workday.

Set 5.0
Doors: C100D Exterior

Type: 6'-0" x 7'-0" paired aluminum door and frame
Finish: Dark Bronze for hinges, push, pull, closer, operator, presence sensor. Clear anodized for threshold only.

2	Continuous Geared Hinge	157XY	IV
2	Maglocks	M62D	SU
1	Push-To-Exit Button	EEB3N	SU
1	Presence/Egress Sensor	SDC MD-31DB	SD
1	Power Supply	SEC-BPS-12-24-1	SU
2	Pull	110x73	RO
1	Surface Closer with drop plate	4040XP	LC
1	Automatic Door Operator	9500 series	LC
2	Actuator Switch	8310 series	LC
1	Vandal Resistant Surface Mounted Box	8310 series	LC
1	Presence Sensor	8310-877	LC
1	Thermal Threshold	600 series	ZE
1	Weatherstrip – per section 84113		
2	Weathersweep – per section 84113		

Remove and reinstall existing door position switches. Reuse or provide new wiring to match existing, as necessary. Door security to be fully functional at the end of each workday.

Set 6.0
Doors: G147H

Type: Two sets of 6'-0" x 7'-0" paired aluminum doors and frames at each opening
Finish: Dark Bronze for hinges, push, pull, closer, operator, presence sensor. Clear anodized for threshold only.

4	Continuous Geared Hinge	157XY	IV
4	Push Bar – per section 84113		
4	Pull - per section 84113		
4	Surface Closer with drop plate	4040XP	LC
2	Thermal Threshold	600 series	ZE
2	Weatherstrip – per section 84113		
4	Weathersweep – per section 84113		

Remove and reinstall existing maglocks, presence sensors, push to exit button, and door position switches. Reuse or provide new wiring to match existing, as necessary. Door security to be fully functional at the end of each workday.

Set 7.0
Doors: E108

Type: Two sets of 6'-0" x 7'-0" paired aluminum doors and frames at each opening
Finish: Dark Bronze for hinges, push, pull, closer, operator, presence sensor. Clear anodized for threshold only.

4	Continuous Geared Hinge	157XY	IV
4	Push Bar – per section 84113		
4	Pull - per section 84113		
3	Surface Closer with drop plate	4040XP	LC
1	Automatic Door Operator	9500 series	LC
2	Actuator Switch	8310 series	LC
1	Vandal Resistant Surface Mounted Box	8310 series	LC
1	Presence Sensor	8310-877	LC
2	Thermal Threshold	600 series	ZE
2	Weatherstrip – per section 84113		
4	Weathersweep – per section 84113		

Remove and reinstall existing maglocks, presence sensors, push to exit button, and door position switches. Reuse or provide new wiring to match existing, as necessary. Door security to be fully functional at the end of each workday.

Set 8.0
Doors: F117

Type: Two sets of 6'-0" x 7'-0" paired aluminum doors and frames at each opening
Finish: Dark Bronze for hinges, push, pull, closer, operator, presence sensor. Clear anodized for threshold only.

4	Continuous Geared Hinge	157XY	IV
4	Push Bar – per section 84113		
4	Pull - per section 84113		
3	Surface Closer with drop plate	4040XP	LC
1	Automatic Door Operator	9500 series	LC
2	Actuator Switch	8310 series	LC
1	Vandal Resistant Surface Mounted Box	8310 series	LC
1	Presence Sensor	8310-877	LC
2	Thermal Threshold	600 series	ZE
2	Weatherstrip – per section 84113		
4	Weathersweep – per section 84113		

Remove and reinstall existing maglocks, presence sensors, push to exit button, and door position switches. Reuse or provide new wiring to match existing, as necessary. Door security to be fully functional at the end of each workday.

END OF SECTION 087100

APPROVED PRODUCT LIST
APPENDIX A

	APPROVED PRODUCT LIST - HINGES			
DEVICE	MODEL 1	MODEL 2	MODEL 3	MODEL 4
Hinge-Continuous, Geared	Ives 157XY	McKinney 25HD	Stanley 661HD, 662HD	Hagar Roton
Hinge-Continuous, Pin and Barrel	Ives 602	McKinney FM300 / FM200	Stanley 651, 652	
Hinge-Conventional, SD	Ives 5BB1	McKinney MPB79 / MPB91	Stanley FBB179, FBB191	
Hinge-Conventional, HD	Ives 5BB1HW	McKinney MPB68 / MPB99	Stanley FBB168, FBB199	
Hinge-Spring	Ives SP1	McKinney MPS60	Stanley 2060R	

TABLE A. 1

APPROVED PRODUCT LIST - MECHANICAL LOCKS			
DEVICE	MODEL 1	MODEL 2	MODEL 3
Deadbolt	Schlage B Series	Sargent 480 Series	BEST T Series
Flush Bolt, Auto	Ives FB30-M FB40-W	Rockwood 2845 / 2945	Trimco 3810/3820
Flush Bolt, Manual	Ives FB457	Rockwood 555	Trimco 3917/3913
Lockset, Cylindrical*	Schlage ND Series	Sargent 10 Series	BEST 9K Series
Lockset, Mortise*	Schlage L Series	Sargent 8200 Series	BEST 40H Series
Padlock	Schlage KS series	Medeco 5431FL0	BEST B Series
* Mechanical devices may still require a Request-To-Exit Switch and Latch-bolt Monitor if door is monitored. See Drawings and Specifications for additional information.			

TABLE A. 2

APPROVED PRODUCT LIST - EXIT DEVICES			
DEVICE	MODEL 1	MODEL 2	MODEL 3
Exit Device-Panic/ Fire, Rim*	Von Duprin 99 Series	Sargent 80 Series	Phi Apex 2000
Exit Device-Panic/ Fire, Vert Rod*	Von Duprin 99 Series	Sargent 80 Series	Phi Apex 2000
Strike-Dust Proof	Ives Dp Series	Ives Dp Series	Hager 280x
* Mechanical Devices May Still Require A Request-To-Exit Switch and Latch bolt Monitor If Door Is Monitored. See Drawings and Specifications for Additional Information.			

TABLE A. 3

APPROVED PRODUCT LIST - ELECTRICAL HARDWARE			
DEVICE	MODEL 1	MODEL 2	MODEL 3
Electric Power Transfer	VonDuprin EPT-10	Securitron EPT Series	SDC PTM-10AL
Exit Device W/ Electric Latch Retraction*	VonDuprin 99 Series (QEL)	Sargent 80 Series (56 ELR)	PHI Apex 2000 with MLR
Exit Device w/ Electrified Trim*	VonDuprin 99 Series (QEL)	Sargent 80 Series (56 ELR)	PHI Apex 2000 with MLR
Lockset-Mortise, Electric*	Schlage L Series	Sargent 8200 Series	BEST 45HW
Maglock	Securitron	Dynalock	TBD
Magnetic Door Holder	LCN SEM 7800 series	Rixson 900 Series	ABH 2100
Strike, Electric	HES	VonDuprin	TBD
* Provide device with a Request-To-Exit Switch. Where indicated, also provide A LATCHBOLT Monitor. See Drawings and Specifications for additional information.			

TABLE A. 4

APPROVED PRODUCT LIST - CLOSERS & HOLDERS			
DEVICE	MODEL 1	MODEL 2	MODEL 3
Closer-Heavy Duty (HD)	LCN 4040XP	Norton 9540	Stanley D-4550
Closer-Standard Duty (SD)	LCN 4050 Series	Norton 8000 Series	Stanley D-3550
Coordinator	Ives COR	Rockwood 1600 Series	Hager 297D
Kick Down Holder	Ives FS500 series	Rockwood Various	Hager 270/271 Series
Operator - Low Energy	LCN 9500 Series	Norton 6000 Series	PHI D-4990

TABLE A. 5

APPROVED PRODUCT LIST - TRIM			
DEVICE	MODEL 1	MODEL 2	MODEL 3
Protection Plates	Ives 8400 Series	Rockwood Various	Trimco Various
Pull / Push	Ives 8200 / 8300 Series	Rockwood Rm251	Trimco Various
Stop-Floor	Ives FS Series	Rockwood 442 And Various	Hager 244/245 Series
Stop-Overhead, Concealed	Glynn Johnson 100 Series	Rixson 10 Series	ABH Various
Stop-Wall	Ives WS Series	Rockwood 406/409 And Various	Hager 230w/234w

TABLE A. 6

APPROVED PRODUCT LIST - GASKETING			
DEVICE	MODEL 1	MODEL 2	MODEL 3
Astragal	Zero 50 series	Pemko, Various	National Guard, Various
Gasketing	Zero 100 series	Pemko, Various	National Guard, Various
Rain Drip	Zero, Various	Pemko, Various	National Guard, Various
Threshold	Zero 500 / 600 series	Pemko, Various	National Guard, Various

TABLE A. 7

SECTION 087113 - AUTOMATIC DOOR OPERATORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Low-energy door operators for swinging doors.

1.2 DEFINITIONS

A. AAADM: American Association of Automatic Door Manufacturers.

B. Double-Egress (Doors): A pair of doors that simultaneously swing, with the two doors moving in opposite directions with no mullion between them.

C. Double-Swing (Doors): A pair of doors that swing, with the two doors moving in opposite directions with a mullion between them; each door functioning as a single-swing door.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For automatic door operators.

1. Include plans, elevations, sections, hardware mounting heights, and attachment details.
2. Include diagrams for power, signal, and control wiring.

C. Samples: For each exposed product and for each color and texture specified.

1.5 INFORMATIONAL SUBMITTALS

A. Product certificates.

B. Field quality-control reports.

C. Sample warranties.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer for installation and maintenance of units required for this Project.

B. Certified Inspector Qualifications: Certified by AAADM.

1.8 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of automatic door operators that fail in materials or workmanship within specified warranty period.

1. Warranty Period: One years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. LCN, an Allegion brand: 9500 series: Basis-of-Design.
2. Horton Automatics; a division of Overhead Door Corporation.
3. SARGENT Manufacturing Company; ASSA ABLOY.
4. Stanley Access Technologies.

2.2 AUTOMATIC DOOR OPERATORS, GENERAL

A. General: Provide operators of size recommended by manufacturer for door size, weight, and movement; for condition of exposure; and for long-term, maintenance-free operation under normal traffic load for occupancy type indicated; and in accordance with UL 325. Coordinate operator mechanisms with door operation, hinges, and activation and safety devices.

1. Fire-Rated Doors: Provide door operators for fire-rated door assemblies that comply with NFPA 80 for fire-rated door components and are listed and labeled by a qualified testing agency.

B. Electromechanical Operating System: Self-contained unit powered by permanent-magnet dc motor; with closing speed controlled mechanically by gear train and dynamically by braking action of electric motor, connections for power and activation- and safety-device wiring, and manual operation, including spring closing when power is off.

C. Cover for Surface-Mounted Operators: continuous over full width of operator-controlled door opening with enclosed end caps, provision for maintenance access, and fasteners concealed when door is in closed position.

D. Brackets and Reinforcements: Fabricated from aluminum with non-staining, nonferrous shims for aligning system components.

E. Fire-Door Package: Consisting of UL-listed latch mechanism, power-reset box, and caution signage for fire-rated doors. Latch mechanism shall allow door to swing free during automatic operation; when fire is detected, latch actuator shall cause exit hardware to latch when door closes. Provide latch actuators with fail-secure design.

F. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.3 LOW-ENERGY DOOR OPERATORS FOR SWINGING DOORS

A. Standard: BHMA A156.19.

B. Performance Requirements:

1. Opening Force if Power Fails: Not more than 15 lbf (67 N) required to release latch if provided, not more than 30 lbf (133 N) required to manually set door in motion, and not more than 15 lbf (67 N) required to fully open door.
2. Entrapment-Prevention Force: Not more than 15 lbf (67 N) required to prevent stopped door from closing or opening.

C. Configuration: Operator to control single swinging door.

1. Traffic Pattern: Two way.
2. Operator Mounting: Surface.

D. Configuration: Operator to control pair of swinging doors.

1. Traffic Pattern: Two way.
2. Operator Mounting: Surface Overhead

E. Operation: Power opening and power-assisted spring closing. When not in automatic mode, door operator shall function as manual door closer, with or without electrical power.

F. Operating System: Electromechanical.

G. Microprocessor Control Unit: Solid-state controller.

H. Features:

1. Adjustable opening and speed.
2. Adjustable opening and closing force.
3. Adjustable backcheck.
4. Adjustable hold-open time from zero to 30 seconds.
5. Adjustable time delay.
6. Adjustable acceleration.
7. Obstruction recycle.
8. On-off/hold-open switch to control electric power to operator.

I. Activation Device: Push-button actuator on each side of door opening.

J. Exposed Finish: Factory finished. Architect to select a manufacturer’s standard color.

2.4 MATERIALS

A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.

1. Extrusions: ASTM B 221 (ASTM B 221M).
2. Sheet: ASTM B 209 (ASTM B 209M).

B. Fasteners and Accessories: Corrosion-resistant, non-staining, nonbleeding fasteners and accessories compatible with adjacent materials.

2.5 CONTROLS

A. General: Provide controls in accordance with BHMA standards; for condition of exposure; and for long-term, maintenance-free operation under normal traffic load for occupancy type indicated. Coordinate devices with door operation and door operator mechanisms.

B. Push-Plate Switch: Momentary-contact door control switch with flat push-plate actuator with contrasting-colored, engraved message.

1. Exterior Mounted: push plate with 4-3/4”-by-4-3/4”-inch surface mounted
2. Interior Mounted: push plate with 1-1/2”-by-4-3/4”-inch flush mounted in door frame
3. Vestibules mounted (2 actuators per vestibule): push plate with 4-3/4”-by-4-3/4”-inch surface mounted.

4. Configuration:

a. Mounting: Surface mounted.
b. LCN 8310 vandal resistant box: Basis-of-Design.
c. Weather/Trim ring for exterior applications.

5. Push-Plate Material: Stainless steel with engraved blue filled lettering and symbol, as selected by Architect from manufacturer's full range.

a. Message: International symbol of accessibility and "Push to Open."
b. Operation: Wireless.
c. LCN 8310: Basis-of-Design.

6. Operation:

a. Wired operation for flush mounted actuators in door frames.
b. Wired operation for surface mounted actuators on storefront framing.
c. Wireless operation will be accepted for other locations unless existing raceways can be reused.

C. Presence Sensors: Self-contained, active-infrared scanner units; adjustable to provide detection field sizes and functions required by BHMA A156.10. Sensors shall remain active at all times.

1. Head mounted.
2. LCN 8310-877: Basis-of-Design.

D. Electrical Interlocks: Unless units are equipped with self-protecting devices or circuits, provide electrical interlocks to prevent activation of operator when door is locked, latched, or bolted.

2.6 ACCESSORIES

A. Signage: As required by cited BHMA standard for type of door and its operation.

1. Application Process: Operator manufacturer's standard process.
2. Provide sign materials with instructions for field application when operators are installed.
3. Surface mounted vandal resistant boxes.
4. Weather boot for all exterior applications.

2.7 FABRICATION

A. Factory fabricate automatic door operators to comply with indicated standards.

B. Fabricate exterior components to drain condensation and water-passing joints within operator enclosure to the exterior.

C. Use concealed fasteners to greatest extent possible. Where exposed fasteners are required, use countersunk Phillips flat-head machine screws, finished to match operator.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Install automatic door operators in accordance with manufacturer's written instructions and cited BHMA standard for type of door operation and direction of pedestrian travel, including signage, controls, wiring, remote power units if any, and connection to building's power supply.

B. Salvage and reused door operators that are not shown in the door hardware schedule as being replaced. Salvage door operators that are not going to be reused and return them to the owner.

C. Verify that full-height finger guards are installed on both sides of each door hinge, where door has a clearance at hinge side greater than 1/4 inch with door in any position.

D. Controls: Install devices in accordance with manufacturer's written instructions and cited BHMA standard for operator type and direction of pedestrian travel.

E. Signage: Apply on both sides of each door as required by cited BHMA standard for type of door operator and direction of pedestrian travel.

F. Adjusting: Adjust automatic door operators to function smoothly, and lubricate as recommended by manufacturer; comply with requirements of applicable BHMA standards.

1. Adjust operators on exterior doors for tight closure.
2. Readjust automatic door operators and controls after repeated operation of completed installation equivalent to three days' use by normal traffic (100 to 300 cycles).

G. Demonstration: Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain automatic door operators.

3.2 FIELD QUALITY CONTROL

A. Certified Inspector: Engage a Certified Inspector to test and inspect components, assemblies, and installations, including connections.

1. Test and inspect each automatic door operator installation, using AAADM inspection forms, to determine compliance of installed systems with applicable BHMA standards.

B. Automatic door operators will be considered defective if they do not pass tests and inspections.

C. Prepare test and inspection reports.

END OF SECTION 087113

SECTION 088000 - GLAZING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes:

1. Glass for windows, doors, interior borrowed lites, storefront framing and glazed curtain walls.
2. Glazing sealants and accessories.

1.3 DEFINITIONS

A. Glass Manufacturers: Firms that produce primary glass, fabricated glass, or both, as defined in referenced glazing publications.

B. Glass Thicknesses: Indicated by thickness designations in millimeters according to ASTM C 1036.

C. IBC: International Building Code.

D. Interspace: Space between lites of an insulating-glass unit.

1.4 COORDINATION

A. Coordinate glazing channel dimensions to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances.

1.5 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

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 temporary protection requirements for glazing during and after installation.

1.6 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Glazing Accessory Samples: For sealants and colored spacers, in 12-inch (300-mm) lengths.

C. Glazing Schedule: List glass types and thicknesses for each size opening and location. Use same designations indicated on Drawings.

1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and manufacturers of insulating-glass units with sputter-coated, low-E coatings.

B. Product Certificates: For glass.

C. Product Test Reports: For tinted glass, coated glass, insulating glass and glazing sealants, for tests performed by a qualified testing agency.

1. For glazing sealants, provide test reports based on testing current sealant formulations within previous 36-month period.

D. Preconstruction adhesion and compatibility test report.

E. Sample Warranties: For special warranties.

1.8 QUALITY ASSURANCE

A. Manufacturer Qualifications for Insulating-Glass Units with Sputter-Coated, Low-E Coatings: A qualified insulating-glass manufacturer who is approved and certified by coated-glass manufacturer.

B. Installer Qualifications: A qualified installer who employs glass installers for this Project who are certified under the National Glass Association's Certified Glass Installer Program.

C. Glass Testing Agency Qualifications: A qualified independent testing agency accredited according to the NFRC CAP 1 Certification Agency Program.

D. Sealant Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.

1.9 DELIVERY, STORAGE, AND HANDLING

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

B. Comply with insulating-glass manufacturer's written instructions for venting and sealing units to avoid hermetic seal ruptures due to altitude change.

1.10 FIELD CONDITIONS

A. Environmental Limitations: Do not proceed with glazing when ambient and substrate temperature conditions are outside limits permitted by glazing material manufacturers and when glazing channel substrates are wet from rain, frost, condensation, or other causes.

1. Do not install glazing sealants when ambient and substrate temperature conditions are outside limits permitted by sealant manufacturer or are below 40 deg F (4.4 deg C).

1.11 WARRANTY

A. Manufacturer's Special Warranty for Coated-Glass Products: Manufacturer agrees to replace coated-glass units that deteriorate within specified warranty period. Deterioration of coated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and

cleaning coated glass contrary to manufacturer's written instructions. Defects include peeling, cracking, and other indications of deterioration in coating.

1. Warranty Period: 10 years from date of Substantial Completion.

B. Manufacturer's Special Warranty for Laminated Glass: Manufacturer agrees to replace laminated-glass units that deteriorate within specified warranty period. Deterioration of laminated glass is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning laminated glass contrary to manufacturer's written instructions. Defects include edge separation, delamination materially obstructing vision through glass, and blemishes exceeding those allowed by referenced laminated-glass standard.

1. Warranty Period: 10 years from date of Substantial Completion.

C. Manufacturer's Special Warranty for Insulating Glass: Manufacturer agrees to replace insulating-glass units that deteriorate within specified warranty period. Deterioration of insulating glass is defined as failure of hermetic seal under normal use that is not attributed to glass breakage or to maintaining and cleaning insulating glass contrary to manufacturer's written instructions. Evidence of failure is the obstruction of vision by dust, moisture, or film on interior surfaces of glass.

1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. AGC Glass Company North America, Inc.
2. Oldcastle BuildingEnvelope™.
3. Pilkington North America.

B. Source Limitations for Glass: Obtain from single source from single manufacturer for each glass type.

1. Obtain tinted glass from single source from single manufacturer.
2. Obtain reflective-coated glass from single source from single manufacturer.

C. Source Limitations for Glazing Accessories: Obtain from single source from single manufacturer for each product and installation method.

2.2 PERFORMANCE REQUIREMENTS

A. General: Installed glazing systems shall withstand normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, or installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.

B. Structural Performance: Glazing shall withstand the following design loads within limits and under conditions indicated determined according to the IBC and ASTM E 1300.

1. Design Wind Pressures: As indicated on Drawings.
2. Design Wind Pressures: Determine design wind pressures applicable to Project according to ASCE/SEI 7, based on heights above grade indicated on Drawings.

a. Wind Design Data: As indicated on Drawings.

b. Basic Wind Speed: 90 mph (40 m/s).
c. Importance Factor: 1.0.
d. Exposure Category: B.

3. Differential Shading: Design glass to resist thermal stresses induced by differential shading within individual glass lites.

C. Safety Glazing: Where safety glazing is indicated, provide glazing that complies with 16 CFR 1201, Category II.

D. Thermal and Optical Performance Properties: Provide glass with performance properties specified, as indicated in manufacturer's published test data, based on procedures indicated below:

1. For monolithic-glass lites, properties are based on units with lites 6 mm thick.
2. For insulating-glass units, properties are based on units of thickness indicated for overall unit and for each lite.
3. U-Factors: Center-of-glazing values, according to NFRC 100 and based on LBL's WINDOW 5.2 computer program, expressed as Btu/sq. ft. x h x deg F (W/sq. m x K).
4. Solar Heat-Gain Coefficient and Visible Transmittance: Center-of-glazing values, according to NFRC 200 and based on LBL's WINDOW 5.2 computer program.
5. Visible Reflectance: Center-of-glazing values, according to NFRC 300.

2.3 GLASS PRODUCTS, GENERAL

A. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below unless more stringent requirements are indicated. See these publications for glazing terms not otherwise defined in this Section or in referenced standards.

1. GANA Publications: "Glazing Manual."
2. IGMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."

B. Safety Glazing Labeling: Where safety glazing is indicated, permanently mark glazing with certification label of the SGCC. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies. Comply with testing requirements in CPSC 16 CRF 1201.

C. Insulating glass shall comply with standard for construction and insulating value as established by:

1. Insulating Glass Manufacturers Alliance (IGMA)
2. Insulating Glass Certification Council (IGCC)

D. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of IGCC.

E. Exterior glazing shall be designed for energy conservation.

1. The U.S. Department of Energy (DOE/EE-1073 “Spectrally Selective Glazings”) defines Spectrally Selective Glass as any glass with a Light to Solar Gain (LSG) ratio of 1.25 or better. LSG is a derivative of Solar Heat Gain Coefficient (SHGC) and Visible Light Transmittance (VLT). Spectrally selective low-E coatings are designed to maximize the transmission of visible light and to reduce transmission of longer wavelength heat in the near-infrared spectrum. Low-E glass reduces heat loss, and spectrally selective low-E glass reduces heat loss and heat gain. Consider the use of Spectrally Selective Glazing for project.

F. Thickness: Where glass thickness is indicated, it is a minimum.

1. Minimum Glass Thickness for Exterior Lites: 6 mm.

G. Strength: Where annealed float glass is indicated, provide annealed float glass, heat-strengthened float glass, or fully tempered float glass. Where heat-strengthened float glass is indicated, provide heat-strengthened float glass or fully tempered float glass. Where fully tempered float glass is indicated, provide fully tempered float glass.

2.4 GLASS PRODUCTS

A. Match existing tinted and coated glazing at EMHC Mandel Humanities Center.

B. Tinted Annealed Float Glass: ASTM C 1036, Type I, Class 2 (tinted), Quality-Q3.

C. Glass Type 1: (match existing): Clear Annealed Float Glass: ASTM C 1036, Type I, Class 1 (clear), Quality-Q3.

1. Provide Heat-Strengthened Float Glass where indicated: ASTM C 1048, Kind HS (heat strengthened), Type I, Condition A (uncoated) unless otherwise indicated, Type I, Class 1 (clear) or Class 2 (tinted) as indicated, Quality-Q3.
2. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed unless otherwise indicated.

D. Glass Type 2: (match existing): Fully Tempered Float Glass: 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.

2.5 INSULATING GLASS SCHEDULE

A. Provide tinted or coated glazing at EMHC Mandel Humanities Center to match existing.

B. Provide tempered glazing where required to meet building code requirements for safety glazing.

C. Insulating Glass Unit (Clear Low-E):

1. Total Thickness: 1"
2. Thickness of Each Pane: 1/4"
3. Air Space Thickness: 1/2"
4. Interspace Content: Argon.
5. Sealing System: Manufacturer's Standard Dual Seal

    a. Desiccant: Manufacturer's Standard - Either Molecular Sieve or Silica Gel or Blend of Both.

6. Spacer Material: IGMAC approved low-conductance spacer bar material with integrated desiccant. As selected by Architect from manufacturer's full range of colors.

    a. Approved Manufacturers:

        1) “Warm Edge I-Spacer; Technoform (330-487-6600)
        2) “TPS Warm edge spacer”; Traco Commercial Group (800-837-7002)
        3) “SureSeal” TPS Spacer Bar”; Virginia Glass and Mirror (800-368-3011)

2.6 GLAZING SEALANTS

A. General:

1. Compatibility: Compatible with one another and with other materials they contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
3. Sealant shall have a VOC content of 250 g/L or less.
4. Sealant shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
5. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range.

B. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 100/50, Use NT.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Dow Corning Corporation.
b. Pecora Corporation.
c. Sika Corporation.
d. Tremco Incorporated.

2.7 GLAZING TAPES

A. Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based, 100 percent solids elastomeric tape; non-staining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; 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; and complying with AAMA 800 for the following types:

1. AAMA 810.1, Type 1, for glazing applications in which tape acts as the primary sealant.
2. AAMA 810.1, Type 2, for glazing applications in which tape is used in combination with a full bead of liquid sealant.

2.8 MISCELLANEOUS GLAZING MATERIALS

A. General: Provide products of material, size, and shape complying with referenced glazing standard, with 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 of 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.

2.9 FABRICATION OF GLAZING UNITS

A. Fabricate glazing units in sizes required to fit 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.

1. Allow for thermal movements from ambient and surface temperature changes acting on glass framing members and glazing components.

a. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

B. Clean-cut or flat-grind vertical edges of butt-glazed monolithic lites to produce square edges with slight chamfers at junctions of edges and faces.

C. Grind smooth and polish exposed glass edges and corners.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine framing, glazing channels, and stops, 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 systems.
3. Minimum required face and 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.

B. Examine glazing units to locate exterior and interior surfaces. Label or mark units as needed so that exterior and interior surfaces are readily identifiable. Do not use materials that leave visible marks in the completed Work.

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. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass includes glass with edge damage or other imperfections that, when installed, could weaken glass, impair performance, or impair appearance.

C. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.

D. 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.

E. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

F. Provide spacers for glass lites where length plus width is larger than 50 inches (1270 mm).

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 (3-mm) 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.

G. 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.

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

I. Set glass lites with proper orientation so that coatings face exterior or interior as specified.

J. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.

K. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.

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, then to jambs. Cover horizontal framing joints by applying tapes to jambs, 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 right 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 GASKET GLAZING (DRY)

A. Cut compression gaskets to lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.

B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.

C. Installation with Drive-in Wedge Gaskets: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket 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. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.

D. Installation with Pressure-Glazing Stops: Center glass lites in openings on setting blocks, and press firmly against soft compression gasket. Install dense compression gaskets and pressure-glazing stops, applying pressure uniformly to compression gaskets. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.

E. Install gaskets so they protrude past face of glazing stops.

3.6 SEALANT GLAZING (WET)

A. Install continuous spacers, or spacers combined with cylindrical sealant backing, between glass lites and glazing stops to maintain glass face clearances and to prevent sealant from extruding into glass channel and blocking weep systems until sealants cure. Secure spacers or spacers and backings in place and in position to control depth of installed sealant relative to edge clearance for optimum sealant performance.

B. Force sealants into glazing channels to eliminate voids and to ensure complete wetting or bond of sealant to glass and channel surfaces.

C. Tool exposed surfaces of sealants to provide a substantial wash away from glass.

3.7 CLEANING AND PROTECTION

A. Immediately after installation remove nonpermanent labels and clean surfaces.

B. Protect glass from contact with contaminating substances resulting from construction operations. 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.

1. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended in writing by glass manufacturer. Remove and replace glass that cannot be cleaned without damage to coatings.

C. Remove and replace glass that is damaged during construction period.

D. Wash glass on both exposed surfaces 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.

3.8 INTERIOR GLASS SCHEDULE

A. Glass Type: 6 mm clear tempered safety glazing.

3.9 EXTERIOR GLASS SCHEDUL

A. Glass Type: Insulating glass unit (Clear Low-E):

1. Overall Unit Thickness: 1 inch (25 mm).
2. Minimum Thickness of Each Glass Lite: 6 mm.
3. Outdoor Lite: Tempered Safety glazing where required by code
4. Interspace Content: Argon.
5. Clear Low-E
6. Indoor Lite: Tempered Safety glazing where required by code.
7. (For doors C100J and C100D provide opaque dark bronze tint at transom glazing)

END OF SECTION 088000

APPENDIX E – FACILITY EXTERIOR DOOR ASSESSMENT

APPENDIX E

Cuyahoga Community College

FACILITY EXTERIOR DOOR ASSESSMENT

Tri-C West Campus

Submitted by Van Auken Akins Architects LLC
October 2022

Van Auken Akins ARCHITECTS LLC

Cuyahoga Community College

FACILITY EXTERIOR ENTRANCE DOOR ASSESSMENT - TRI-C WEST CAMPUS

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GENERAL DESCRIPTION

Description:

The Cuyahoga Community College West Campus was dedicated in 1975. Exterior doors at the main entrances date to the original construction. They are stainless steel framed with non-tempered, non-insulated glazing. The pivot hinges with concealed overhead closers are no longer manufactured, and perimeter seals leak.

Interior Vestibule doors and exterior doors to the Courtyards are anodized aluminum with non-insulated, non-tempered glazing and date to the original construction. Doors on the building additions are a mix of anodized aluminum, fiber reinforced plastic, and hollow metal. Glazing on the older additions is non-insulated.

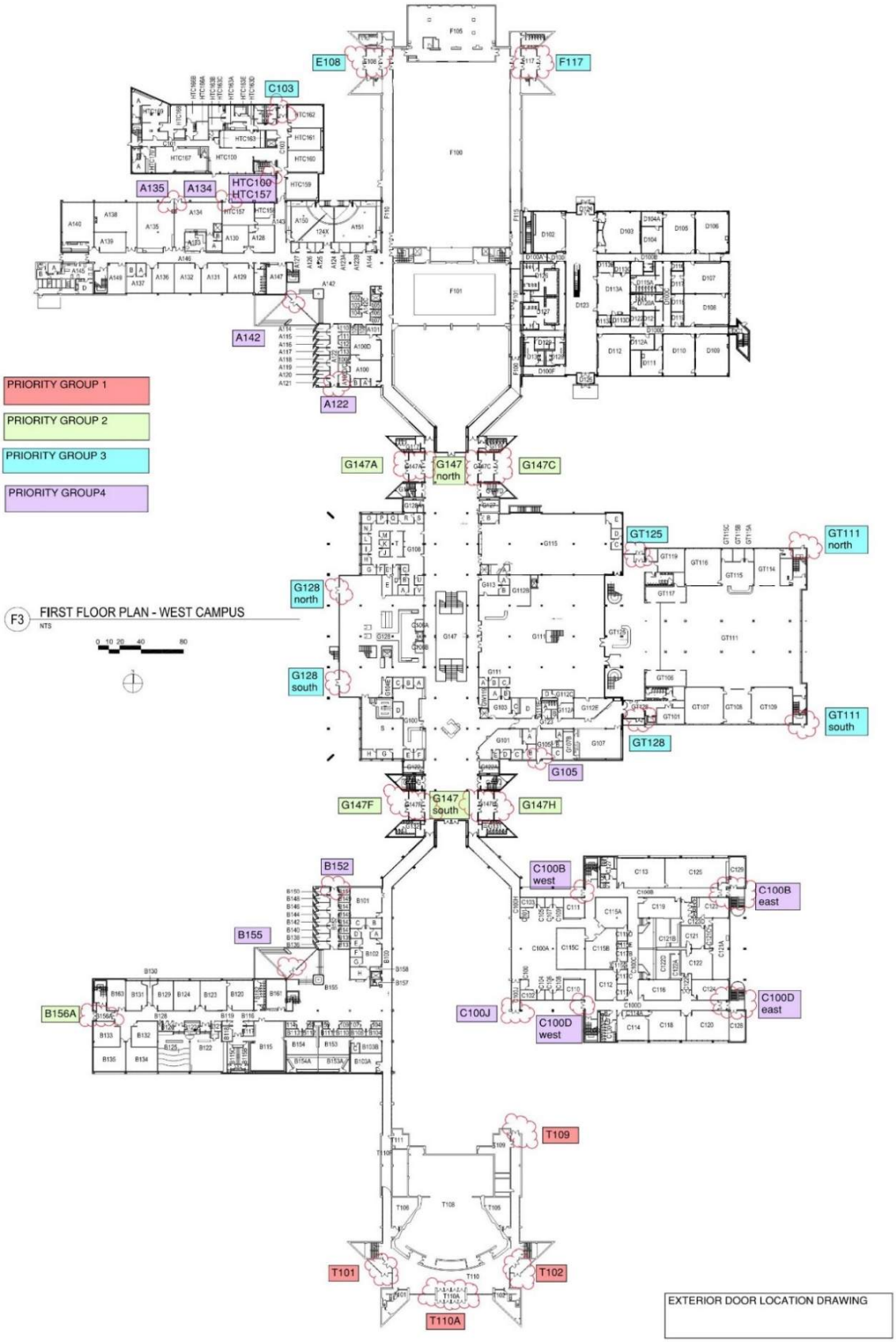
There are ADA door operators at most of the main entrances. Many of them are older models with actuator buttons that lack the wheelchair symbol and "push to open" lettering.

Maglocks with motion sensors and push to exit buttons were installed on most of the exterior doors in the last 2 years.

PROBABLE COST SUMMARY

FACILITY EXTERIOR ENTRANCE DOOR ASSESSMENT October 2022			Rating	Dollar Assessment
		PRIORITY GROUP 1		
	A	T110A Main Interior and Exterior Vestibule Doors at Theater	3	$133,200.00
	B	Interior and Exterior Vestibule near Rooms T101 and T102, and Northeast Entrance near room T109	3	$126,600.00
		Subtotal		**$259,800.00**
		PRIORITY GROUP 2		
	C	Interior and Exterior Vestibules G147A, G147C, G147F and G147H	3	$300,000.00
	D	Exterior Doors to North Courtyard and South Courtyards from Corridor 147	3	$64,600.00
	E	Interior and Exterior Vestibule B156A	3	$48,900.00
		Subtotal		**$413,500.00**
		PRIORITY GROUP 3		
	F	Interior and Exterior Vestibules E108 and F117 near the Gymnasium	3	$160,800.00
	G	Interior and Exterior Vestibule at Corridor C103	3	$28,650.00
	H	Exterior Doors at Cafeteria G128 north and south doors, 2 Pairs	3	$40,600.00
	I	Interior and Exterior Vestibule GT125 Northwest Corner and GT128 Southwest Corner of the Library	3	$400.00
	J	Emergency Exit Doors GT111 North and GT111 South at Library	2	$800.00
		Subtotal		**$231,250.00**
		PRIORITY GROUP 4		
	K	Exterior Doors at Art Room Doors A134, A135 and HTC157, Exterior Door from Stair HTC100	3	$50,000.00
	L	Exterior Doors A122 and B152	3	$21,800.00
	M	Exterior Doors A142 and B155 at Study and Gathering Areas	1	$0.00
	N	Exterior Doors at West End of Corridors C100B and C100D	3	$43,750.00
	O	Exterior Doors at South End of Corridors C100J	3	$31,650.00
	P	Interior and Exterior Vestibule at East End of Corridor C100B	3	$22,475.00
	Q	Interior and Exterior Vestibule at East End of Corridor C100D	3	$41,400.00
	R	Exterior Door G105	3	$4,150.00
		Subtotal		**$215,225.00**
Total				**$1,119,775.00**

Rating: 1 - Satisfactory, 2 - Needs Repair, 3 - Needs Replacement


PRIORITY GROUP 1
PRIORITY GROUP 2
PRIORITY GROUP 3
PRIORITY GROUP4
F3 FIRST FLOOR PLAN - WEST CAMPUS
NTS
0 10 20 40 80
E108
F117
C103
A135
A134
HTC100
HTC157
A142
A122
G147A
G147 north
G147C
G128 north
G128 south
GT125
GT111 north
GT111 south
GT128
G105
G147F
G147 south
G147H
B152
B155
B156A
C100B west
C100B east
C100J
C100D west
C100D east
T109
T101
T102
T110A
EXTERIOR DOOR LOCATION DRAWING

A. PRIORITY GROUP 1

T110A Main Interior and Exterior Vestibule Doors at Theater

- The original stainless steel exterior and interior doors from the 1975 construction with non-tempered, single glazing. They operate on the original pivot hinges and closers. At 8'-6" tall, they are taller than the typical 7'-0" tall doors. The weather strip brushes at the jambs and astragal leak air in many locations. Thresholds are corroded and have air leaks. Stainless steel panic hardware and pulls are original and in fair to poor condition. Three of the exterior doors are racked out of alignment by up to 1/2".
- The doors are secured by maglocks and released by motion sensors and push to exit buttons that are 2-years old and in good condition.
- The doors do not have ADA door operators and they are not needed. Door operators are present at the adjacent entrance vestibules to the east and west.
- The doors have 6" tall bottom rails. 10" is required for ADA compliance.
- Exterior door configuration is 4 pairs
- Interior door configuration is 4 pairs

Rating:

3 Needs Replacement

Recommendations:

- Replace exterior doors, frames and hardware. New 3'-0" x 7'-0" glazed aluminum storefront doors and frames to be thermally broken with insulated glazing. The 7'-0" tall doors will be more durable than 8'-6" doors.
- Provide a thermally broken aluminum framed transom, with insulated glazing, above the 7'-0" tall doors.
- Replace interior doors, frames and hardware.
- Remove and reinstall maglocks, motion sensors and push to exit buttons.

Item	Cost	Unit	Whole Building	Sum	Comments
Insulated exterior doors, frames, hardware	$20,000.00	EACH	4.00	$80,000.00	Door Pair
Interior doors, frames, hardware	$11,200.00	EACH	4.00	$44,800.00	Door Pair
Transom	$75.00	SQ. FT.	96.00	$7,200.00	
Remove and reinstall maglocks	$150.00	EACH	8.00	$1,200.00	
Sum:				$133,200.00	

Main Theater Entrance

Main Theater Entrance - Interior Vestibule Doors

Doors, Pivots and Thresholds

Racked Door

Threshold

Newer Maglocks and Motion Sensors

B. PRIORITY GROUP 1

Interior and Exterior Vestibule near Rooms T101 and T102, and Northeast Entrance near room T109

- The Exterior Vestibule doors are aluminum framed with non-tempered, single glazing. Doors with automatic operators have 1" undercuts where automatic door mats had been used. Pulls and push bars are worn. They have are single door automatic operators and proximity sensors in fair condition. Actuator buttons are worn and some do not have ADA symbol or "push to open" lettering.
- The doors are secured by maglocks and released by motion sensors and push to exit buttons that are 2-years old and in good condition.
- The Interior Vestibule doors near rooms T101 and T102 are the original stainless steel from the 1975 construction with non-tempered, single glazing. They operate on the original pivot closer posts. The weather strip brushes at the jambs and astragal leak air. There are no seals at the thresholds which leave large air leaks. Stainless steel panic hardware and pulls are original and in poor condition. They have single door automatic operators and proximity sensors in fair condition. Actuator buttons are worn and some do not have ADA symbol or "push to open" lettering.
- The Exterior doors near rooms T109 are the original stainless steel from the 1975 construction with non-tempered, single glazing. There is a glazed transom panel above the doors. They operate on the original pivot closer posts. The weather strip brushes at the jambs and astragal leak air. There are no seals at the thresholds which leave large air leaks. Stainless steel panic hardware and pulls are original and in poor condition. There is a double door automatic operator and presence sensors in fair condition. One of the actuator buttons does not have an ADA symbol or "push to open" lettering.
- The doors have 6" tall bottom rails. 10" is required for ADA compliance.

Rating:

3 Needs Replacement

Recommendations:

- Replace exterior doors, frames and hardware. New glazed aluminum storefront doors and frames to be thermally broken with insulated glazing.
- Replace interior doors, frames and hardware.
- Remove and reinstall motion maglocks, motion sensors and push to exit buttons.
- Replace ADA operators as needed.
- Replace ADA door actuator buttons that are missing the ADA wheelchair symbol or "push to open" lettering.

Item	Cost	Unit	Whole Building	Sum	Comments
Insulated exterior doors, frames, hardware	$20,000.00	EACH	3.00	$60,000.00	Door Pair

Interior doors, frames, hardware	$11,200.00	EACH	2.00	$22,400.00	Door Pair
Remove and reinstall maglocks	$150.00	EACH	6.00	$900.00	
Single door operator	$6,500.00	EACH	4.00	$26,000.00	
Double door operator	$9,500.00	EACH	1	$9,500.00	
Presence Sensor	$800.00	EACH	6	$4,800.00	
Wave to open actuator buttons	$300.00	EACH	10	$3,000.00	
Sum:				$126,600.00	

Corroded Frame at Door T102

Actuator Button without Lettering or Symbol

Exterior Door with Transom near room T109

Actuator Button without Lettering or Symbol

C. PRIORITY GROUP 2

Interior and Exterior Vestibules G147A, G147C, G147F and G147H

- Exterior Vestibule doors are the original stainless steel doors from the 1975 construction with non-tempered, single glazing. They operate on the original pivot closer posts. The weather strip brushes at the jambs and astragal leak air in many locations. Thresholds are corroded and have air leaks. Stainless steel panic hardware and pulls are original and in fair to poor condition. Some of the exterior doors are racked out of alignment by up to 1/2".
- The doors are secured by maglocks and released by motion sensors and push to exit buttons that are 2-years old and in good condition.
- The Interior Vestibule doors are aluminum framed with non-tempered, single glazing. There are no weather seals or thresholds. The hardware is worn. Doors with automatic operators have 1" undercuts where automatic door mats had been used. Pulls and push bars are worn.
- Vestibules G147A, G147C and G147F have single door automatic operators and proximality sensors in fair condition. Actuator buttons are worn and some do not have ADA symbol or "push to open" lettering.
- The doors have 6" tall bottom rails. 10" is required for ADA compliance.
- Exterior door configuration is 2 pairs at each location.
- Interior door configuration is 2 pairs at each location.

Rating:

3 Needs Replacement

Recommendations:

- Replace exterior doors, frames and hardware. New glazed aluminum storefront doors and frames to be thermally broken with insulated glazing.
- Replace interior doors, frames and hardware.
- Remove and reinstall motion maglocks, motion sensors and push to exit buttons
- Replace ADA operators as needed.
- Replace ADA door actuator buttons that are missing the ADA wheelchair symbol or "push to open" lettering.

Item	Cost	Unit	Whole Building	Sum	Comments
Insulated exterior doors, frames, hardware	$20,000.00	EACH	8.00	$160,000.00	Door Pair
Interior doors, frames, hardware	$11,200.00	EACH	8.00	$89,600.00	Door Pair
Remove and reinstall maglocks	$150.00	EACH	16.00	$2,400.00	
Single door operator	$6,500.00	EACH	6.00	$39,000.00	
Presence Sensor	$800.00	EACH	6.00	$4,800.00	
Wave to open actuator buttons	$300.00	EACH	14.00	$4,200.00	
Sum:				$300,000.00	

Typical Exterior Stainless Steel Doors

Typical Interior Aluminum Framed Doors

D. PRIORITY GROUP 2

Exterior Doors to North Courtyard and South Courtyards from Corridor 147

- Exterior doors are aluminum framed with non-tempered, single glazing. They operate on the original pivot closer posts. The weather strip brushes at the jambs leak air. Threshold sweeps, pulls and push bars are worn. Butt hinges at the South doors have been replaced with face mounted continuous hinges.
- The South doors are secured by maglocks and released by motion sensors and push to exit buttons that are 2-years old and in good condition. The North doors do not have maglocks.
- Door operators are not present or needed at these openings.
- The doors have 6" tall bottom rails. 10" is required for ADA compliance.
- North Exterior door configuration is 1 pairs.
- South Exterior door configuration is 2 pair.

Rating:

3 Needs Replacement

Recommendations:

- Replace exterior doors, frames and hardware. New glazed aluminum storefront doors and frames to be thermally broken with insulated glazing.
- Remove and reinstall motion maglocks and push to exit buttons.
- Provide maglocks on North pair of doors.

Item	Cost	Unit	Whole Building	Sum	Comments
Insulated exterior doors, frames, hardware	$20,000.00	EACH	3.00	$60,000.00	Door Pair
Add maglocks, transformer, low voltage wiring	$2,000.00	EACH	2.00	$4,000.00	
Remove and reinstall maglocks	$150.00	EACH	4.00	$600.00	
Sum:				$64,600.00	

South Courtyard Doors

North Courtyard Doors

E. PRIORITY GROUP 2

Interior and Exterior Vestibule B156A

- Exterior Vestibule doors are the original stainless steel doors from the 1975 construction with thermally broken, non-tempered, single glazing. They operate on the original pivot closer posts. The weather strip brushes at the jambs and astragal leak air in many locations. Thresholds are corroded and have air leaks. Stainless steel panic hardware and pulls are original and in fair to poor condition.
- The doors are secured by maglocks and released by motion sensors and push to exit buttons that are 2-years old and in good condition.
- The Interior Vestibule doors are aluminum framed. They do not all have tempered glazing. There are no weather seals or thresholds. The hardware is worn.
- Each door opening has a single door automatic operators and proximity sensor in fair condition. Actuator buttons are worn and some do not have ADA symbol or "push to open" lettering.
- The doors have 6" tall bottom rails. 10" is required for ADA compliance.
- Exterior door configuration is 2 pairs at each location.
- Interior door configuration is 2 pairs at each location.

Rating:

3 Needs Replacement

Recommendations:

- Replace exterior doors, frames and hardware. New glazed aluminum storefront doors and frames to be thermally broken with insulated glazing.
- Replace interior doors, frames and hardware.
- Remove and reinstall motion maglocks, motion sensors and push to exit buttons
- Replace ADA operators as needed.
- Replace ADA door actuator buttons that are missing the ADA wheelchair symbol or "push to open" lettering.

Item	Cost	Unit	Whole Building	Sum	Comments
Insulated exterior doors, frames, hardware	$20,000.00	EACH	1.00	$20,000.00	Door Pair
Interior doors, frames, hardware	$11,200.00	EACH	1.00	$11,200.00	Door Pair
Remove and reinstall maglocks	$150.00	EACH	2.00	$300.00	
Single door operator	$6,500.00	EACH	2.00	$13,000.00	
Presence Sensor	$800.00	EACH	4	$3,200.00	
Wave to open actuator buttons	$300.00	EACH	4	$1,200.00	
Sum:				$48,900.00	

Exterior Door B156A

Door Operator and Maglock

F. PRIORITY GROUP 3

Interior and Exterior Vestibules E108 and F117 near the Gymnasium

- Exterior Vestibule doors are the original stainless steel doors from the 1975 construction with non-tempered, single glazing. They operate on the original pivot closer posts. The weather strip brushes at the jambs and astragal leak air in many locations. Thresholds are corroded and have air leaks. Stainless steel panic hardware and pulls are original and in fair to poor condition. Some of the exterior doors are racked out of alignment by up to 1/2".
- The doors are secured by maglocks and released by motion sensors and push to exit buttons that are 2-years old and in good condition.
- The Interior Vestibule doors are aluminum framed with non-tempered, single glazing. There are no weather seals or thresholds. The hardware is worn. Doors with automatic operators have 1" undercuts where automatic door mats had been used. Pulls and push bars are worn.
- Each door opening has a single door automatic operator and proximity sensors in fair condition. Actuator buttons are worn and some do not have ADA symbol or "push to open" lettering.
- The doors have 6" tall bottom rails. 10" is required for ADA compliance.
- Exterior door configuration is 2 pairs at each location.
- Interior door configuration is 2 pairs at each location.

Rating:

3 Needs Replacement

Recommendations:

- Replace exterior doors, frames and hardware. New glazed aluminum storefront doors and frames to be thermally broken with insulated glazing.
- Replace interior doors, frames and hardware.
- Remove and reinstall motion maglocks, motion sensors and push to exit buttons.
- Replace ADA operators as needed.
- Replace ADA door actuator buttons that are missing the ADA wheelchair symbol or "push to open" lettering.

Item	Cost	Unit	Whole Building	Sum	Comments
Insulated exterior doors, frames, hardware	$20,000.00	EACH	4.00	$80,000.00	Door Pair
Interior doors, frames, hardware	$11,200.00	EACH	4.00	$44,800.00	Door Pair
Remove and reinstall maglocks	$150.00	EACH	8.00	$1,200.00	
Single door operator	$6,500.00	EACH	4.00	$26,000.00	
Presence Sensor	$800.00	EACH	8	$6,400.00	
Wave to open actuator buttons	$300.00	EACH	8	$2,400.00	
Sum:				$160,800.00	

Exterior Vestibule Doors E108

Interior Vestibule Doors E108

Interior Vestibule Doors E108

Worn Push Bars Interior Doors E108

G. PRIORITY GROUP 3

Interior and Exterior Vestibule at Corridor C103

- Exterior Vestibule doors are wide stile aluminum doors with insulated, tempered glazing, sidelight and transom. Frames and bottom hinges are corroded from salt. The weather strip brushes at the astragal leak air. Brush sweeps at the thresholds are in fair condition. Brass plated panic hardware and pulls are original and in poor condition. The doors are secured by newer maglocks.
- The doors are secured by maglocks and released by motion sensors and push to exit buttons that are 2-years old and in good condition.
- The Interior Vestibule doors are wide stile aluminum framed with tempered glazing. There are no weather seals or thresholds. The brass plated hardware is in poor condition.
- The wall stop in the Vestibule was mounted on gypsum board without blocking and has been pushed through the gypsum board.
- Each door opening has a double door automatic operator and proximity sensor in fair condition. Actuator buttons have ADA symbol and "push to open" lettering. The exterior actuator button is housed in a bollard mounted to the sidewalk with rusting fasteners and clip angles.
- The doors have 10" tall bottom rails meeting ADA requirement.
- Exterior door configuration is 1 pair at each location.
- Interior door configuration is 1 pair at each location.

Rating:

3 Needs Replacement

Recommendations:

- Replace exterior doors, frames and hardware. New glazed aluminum storefront doors and frames to be thermally broken with insulated glazing.
- Replace exterior transom and sidelight frames and insulated glazing.
- Replace interior door hardware.
- Remove and reinstall maglocks and motion sensors
- Remove and reinstall ADA operators.
- Replace the bollard that houses the exterior ADA door actuator button and proximity reader. Reuse actuator button and proximity reader.

Item	Cost	Unit	Whole Building	Sum	Comments
Insulated exterior doors, frames, hardware	$20,000.00	EACH	1.00	$20,000.00	Door Pair
Interior doors hardware	$1,200.00	EACH	1.00	$1,200.00	Door Pair
Transom and sidelight	$125.00	SQ. FT.	30.00	$3,750.00	
Remove and reinstall maglocks	$150.00	EACH	2.00	$300.00	
Remove and reinstall door operator	$400.00	EACH	2.00	$800.00	
Presence Sensor	$800.00	EACH	2	$1,600.00	
Bollard	$600.00	EACH	1	$600.00	
Add wall blocking and paint Vestibule	$400.00	EACH	1	$400.00	
Sum:				$28,650.00	

Exterior Door C103

Corrosion of Door Frame

H. PRIORITY GROUP 3

Exterior Doors at Cafeteria G128 north and south doors, 2 Pairs

- Exterior Vestibule doors are aluminum framed with non-tempered, single glazing. The weather strip brushes at the astragal leak air. There are no sweeps at the thresholds. Panic hardware and pulls are original and in poor condition.
- The doors are secured by maglocks and released by motion sensors and push to exit buttons that are 2-years old and in good condition.
- Doors do not have ADA operators.

Rating:

3 Needs Replacement

Recommendations:

- Replace exterior doors, frames and hardware. New glazed aluminum storefront doors and frames to be thermally broken with insulated glazing.
- Remove and reinstall maglocks and motion sensors.

Item	Cost	Unit	Whole Building	Sum	Comments
Insulated exterior doors, frames, hardware	$20,000.00	EACH	2.00	$40,000.00	Door Pair
Remove and reinstall maglocks	$150.00	EACH	4.00	$600.00	
Sum:				$40,600.00	

Exterior Cafeteria Doors

Panic Hardware

I. PRIORITY GROUP 3

Interior and Exterior Vestibule GT125 Northwest Corner and GT128 Southwest Corner of the Library

- Exterior Vestibule doors at the Northwest Corner of the Library are aluminum doors with tempered insulated glazing. The weather strip brushes at the astragal leak air. There are sweeps at the thresholds in fair condition. Panic hardware and pulls are original and in good condition.
- The doors are secured by maglocks and released by motion sensors and push to exit buttons that are 2-years old and in good condition.
- Interior Vestibule doors at the Northwest Corner of the Library are aluminum framed with tempered, insulated glazing. There are no sweeps at the thresholds. The astragal brush seal is worn. Perimeter seals are in good condition. The hardware is in good condition.
- Exterior doors at the Southwest Corner of the Library are aluminum doors with tempered insulated glazing. The weather strips, gaskets and seals are in good condition. Panic hardware and pulls are original and in good condition. The doors have ADA operators in good condition.
- The doors have 6" tall bottom rails. 10" is required for ADA compliance.

Rating:

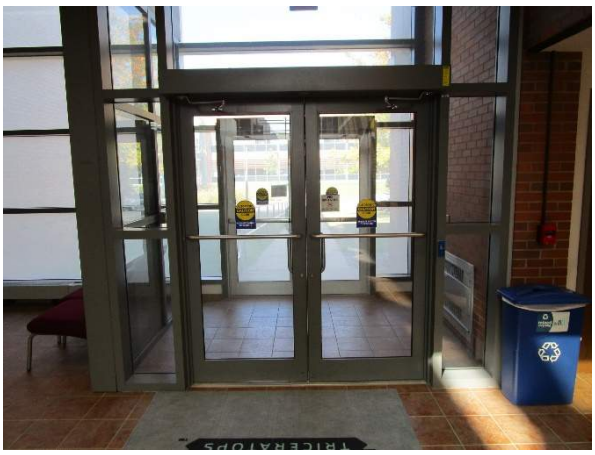
3 Needs Replacement

Recommendations:

- Replace exterior astragal brush seals at northwest exterior and interior doors.
- Provide seals and automatic door bottoms at interior doors.

Item	Cost	Unit	Whole Building	Sum	Comments
Replace astragal door seal	$100.00	EACH	2.00	$200.00	
Add sweeps at interior doors	$100.00	EACH	2.00	$200.00	
Sum:				$400.00	

Northwest Exterior Doors to Library



Northwest Interior Doors to Library

J. PRIORITY GROUP 3

Emergency Exit Doors GT111 North and GT111 South at Library

- Exterior emergency exit doors are 3'-0" x 7'-0" fiber reinforced plastic doors without glazing and are in fair condition. Frames are aluminum and are in good condition. Butt hinges are rusted and are in poor condition. Perimeter seals leak at the strike plate. Sweeps at the thresholds are in fair condition. Brass plated panic hardware is in good condition.
- The doors are secured by maglocks and released by motion sensors and push to exit buttons that are 2-years old and in good condition.

Rating:

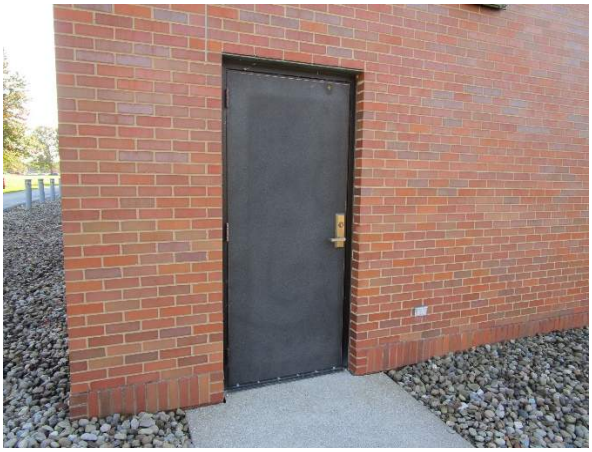
2 Needs Repair

Recommendations:

- Prep, prime and paint doors.
- Replace existing butt hinges with stainless steel hinges.
- Replace sweeps and perimeter seals.

Item	Cost	Unit	Whole Building	Sum	Comments
Prep, prime and paint doors	$100.00	EACH	2.00	$200.00	
Replace butt hinges	$50.00	EACH	6.00	$300.00	
Sweep and perimeter seals	$150.00	EACH	2.00	$300.00	
Sum:				$800.00	

Emergency Exit Door GT111 North



Emergency Exit Door GT111 South

K. PRIORITY GROUP 4

Exterior Doors at Art Room Doors A134, A135 and HTC157, Exterior Door from Stair HTC100

- Exterior Doors at Art room doors A134, A135 and HTC157 are aluminum doors with non-tempered, single glazing. There are no sweeps at the thresholds. Panic hardware and pulls are original and in poor condition. The doors do not have maglocks or automatic door operators, and they are not needed. The doors have 6" tall bottom rails. 10" is required for ADA compliance.
- Exterior Door at Stairwell HTC100 is aluminum with tempered, insulated glazing. The sweep at the threshold and perimeter gaskets are in good condition. Panic hardware and pulls are in good condition. The door does not have a maglock or automatic door operator, and they are not needed. The door has a 10" tall bottom rail for ADA compliance.

Rating:

3 Needs Replacement

Recommendations:

- Replace exterior doors, frames and hardware at A134, A135 and HTC157. New glazed aluminum storefront doors and frames to be thermally broken with insulated glazing.
- Exterior Door from Stair HTC100 is in good condition. No work at this door location.

Item	Cost	Unit	Whole Building	Sum	Comments
Insulated exterior doors, frames, hardware	$10,000.00	EACH	5.00	$50,000.00	Per Door Leaf
Sum:				$50,000.00	

Exterior Door A135

Exterior Stairwell Door HTC100

L. PRIORITY GROUP 4

Exterior Doors A122 and B152

- Exterior doors are the original stainless steel doors from the 1975 construction with non-tempered, single glazing. They operate on the original pivot closer posts. The weather strip brushes at the jambs and astragal leak air. The doors do not have sweeps. Stainless steel panic hardware and pulls are original and in fair to poor condition.
- The doors are secured by maglocks and released by motion sensors and push to exit buttons that are 2-years old and in good condition.
- The doors are not equipped with automatic door operators and they are not needed at these locations.
- The doors have 6" tall bottom rails. 10" is required for ADA compliance.
- Exterior door configuration is pairs at each location.

Rating:

3 Needs Replacement

Recommendations:

- Replace exterior doors, frames and hardware. New glazed aluminum storefront doors and frames to be thermally broken with insulated glazing.
- Replace transom with thermally broken aluminum framing, with insulated glazing.
- Remove and reinstall motion maglocks, motion sensors and push to exit buttons

Item	Cost	Unit	Whole Building	Sum	Comments
Insulated exterior doors, frames, hardware	$20,000.00	EACH	1.00	$20,000.00	Door Pair
Insulated glazed transom	$125.00	SQ. FT.	12.00	$1,500.00	
Remove and reinstall maglocks	$150.00	EACH	2.00	$300.00	
Sum:				$21,800.00	

Exterior Door B152

Door and Pivot Hinge

M. PRIORITY GROUP 4

Exterior Doors A142 and B155 at Study and Gathering Areas

- Exterior doors are aluminum doors with tempered, insulated glazing. The astragal brush, perimeter seals, and threshold seals are in good condition. Panic hardware and pulls are in good condition. The doors are secured by panic bars with concealed flush bolts with electric retraction.
- The doors do not have ADA operators.
- The doors have 10" tall bottom rails for ADA compliance.

Rating:

1 Satisfactory

Recommendations:

- No recommendations at this time.

Item	Cost	Unit	Whole Building	Sum	Comments
				$0.00	
Sum:				$0.00	

Exterior Door B155

Exterior Door B155

N. PRIORITY GROUP 4

Exterior Doors at West End of Corridors C100B and C100D

- Exterior Doors at West End of Corridors C100B and C100D are aluminum doors with non-tempered, single glazing. Sweeps at the thresholds are in fair condition. Panic hardware and pulls are original and in poor condition. The doors do not have automatic door operators, and they are not needed.
- The doors are secured by keyed locks.
- The aluminum frames at the jambs have corroded. Sidelights and transom do not have insulated glazing.
- The doors have 6" tall bottom rails. 10" is required for ADA compliance.

Rating:

3 Needs Replacement

Recommendations:

- Replace exterior doors, frames and hardware. New glazed aluminum storefront doors and frames to be thermally broken with insulated glazing.
- Replace transom with thermally broken aluminum framing, with insulated glazing.

Item	Cost	Unit	Whole Building	Sum	Comments
Insulated exterior doors, frames, hardware	$20,000.00	EACH	2.00	$40,000.00	Door Pair
Transom and sidelight	$125.00	SQ. FT.	30.00	$3,750.00	
Sum:				$43,750.00	

Exterior Door C100B West

Corroded Aluminum Door Frame

O. PRIORITY GROUP 4

Exterior Doors at South End of Corridors C100J

- Exterior Doors at South End of Corridors C100J are aluminum with non-tempered, single glazing. The door has an air gap at the threshold. Panic hardware and pulls are in fair to poor condition. The door has automatic door operator and motion sensors in fair condition.
- The doors are secured by maglocks and released by motion sensors and push to exit buttons that are 2-years old and in good condition.
- The aluminum door frame jamb is has corroded through.
- Transom and sidelight glazing not insulated.
- The doors have 6" tall bottom rails. 10" is required for ADA compliance.

Rating:

3 Needs Replacement

Recommendations:

- Replace exterior doors, frames and hardware. New glazed aluminum storefront doors and frames to be thermally broken with insulated glazing.
- Replace transom with thermaly broken aluminum framing, with insulated glazing.
- Remove and reinstall motion maglocks, motion sensors and push to exit buttons.
- Replace ADA operators as needed.
- Replace ADA door actuator buttons that are missing the ADA wheelchair symbol or "push to open" lettering.

Item	Cost	Unit	Whole Building	Sum	Comments
Insulated exterior doors, frames, hardware	$10,000.00	EACH	2.00	$20,000.00	Door Pair
Transom and sidelight	$125.00	SF. FT.	30.00	$3,750.00	
Remove and reinstall maglocks	$150.00	EACH	2.00	$300.00	
Single door operator	$6,500.00	EACH	1.00	$6,500.00	
Presense Sensor	$800.00	EACH	1.00	$800.00	
Wave to open actuator buttons	$300.00	EACH	1.00	$300.00	
Sum:				$31,650.00	

Air Gap Under Door

Corroded Door Frame

P. PRIORITY GROUP 4

Interior and Exterior Vestibule at East End of Corridor C100B

- Exterior Vestibule doors are fiber reinforced plastic doors with single pane, non-tempered door lites and sidelights and in fair condition. Frames hollow metal are corroded from salt. Hinges are continuous and in fair condition. The weather strip brushes at the astragal leak air. Perimeter frame seals are in good condition. There are no sweeps at the thresholds. Brass plated panic hardware and pulls are in poor condition. The doors are secured by panic bars with surface mounted flush bolts with electric retraction.
- The exterior doors are secured by panic bars with electric retraction and are in poor condition.
- The Interior Vestibule doors are aluminum framed with tempered glazing in fair to good condition. The astragal brush seal is worn. There are no seals or thresholds at the floor. The painted hardware is in good condition.
- The doors are not equipped with ADA door operators.
- The doors have 6" tall bottom rails. 10" is required for ADA compliance.
- Exterior door configuration is 1 pair at each location.
- Interior door configuration is 1 pair at each location.

Rating:

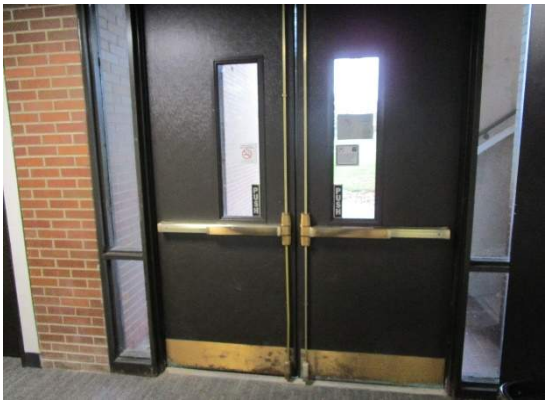
3 Needs Replacement

Recommendations:

- Replace exterior doors, frames and hardware. New FRP doors and frames to be thermally broken with insulated glazing.
- Replace exterior sidelight frames and insulated glazing.
- Replace interior doors, hardware, and astragal weather stripping.
- Provide surface mounted automatic door bottoms on interior doors.

Item	Cost	Unit	Whole Building	Sum	Comments
Insulated exterior doors, frames, hardware	$20,000.00	EACH	1.00	$20,000.00	Door Pair
Interior astragal seal	$75.00	EACH	1.00	$75.00	
Transom and sidelight	$125.00	SQ. FT.	16.00	$2,000.00	
Automatic Door Bottom	$200.00	EACH	2.00	$400.00	
Sum:				$22,475.00	

Interior Vestibule Door C100B East



Worn Door Hardware at C100B East

Q. PRIORITY GROUP 4

Interior and Exterior Vestibule at East End of Corridor C100D

- Exterior Vestibule doors are fiber reinforced plastic doors with single pane, non-tempered door lites and sidelights and in fair condition. Frames are hollow metal and are corroded from salt. Hinges are continuous and in fair condition. The weather strip brushes at the astragal leak air. Perimeter frame seals are in good condition. There are no sweeps at the thresholds. Brass plated panic hardware and pulls are in poor condition. The doors are secured by panic bars with surface mounted flush bolts with electric retraction.
- The exterior doors are secured by panic bars with electric retraction and are in poor condition.
- The Interior Vestibule doors are aluminum framed with tempered glazing in fair condition. One leaf is racked about 1/2" at the bottom. The astragal brush seal is worn. There are no seals or thresholds at the floor. The painted hardware is in poor condition.
- Door opening has a single door automatic operator and proximity sensor in fair condition. Actuator buttons are worn. The exterior button does not have ADA symbol or "push to open" lettering.
- The doors have 6" tall bottom rails. 10" is required for ADA compliance.
- Exterior door configuration is 1 pair at each location.
- Interior door configuration is 1 pair at each location.

Rating:

3 Needs Replacement

Recommendations:

- Replace exterior doors, frames and hardware. New glazed aluminum storefront doors and frames to be thermally broken with insulated glazing.
- Replace exterior sidelight frames and insulated glazing.
- Replace interior doors push bar, pulls, and weather stripping.
- Provide surface mounted automatic door bottoms on interior doors.

Item	Cost	Unit	Whole Building	Sum	Comments
Insulated exterior doors, frames, hardware	$20,000.00	EACH	1.00	$20,000.00	Door Pair
Interior doors and hardware	$11,200.00	EACH	1.00	$11,200.00	Door Pair
Transom and sidelight	$125.00	SQ. FT.	16.00	$2,000.00	
Automatic Door Bottom	$200.00	EACH	2.00	$400.00	
Single door operator	$5,600.00	EACH	1.00	$5,600.00	
Presence Sensor	$800.00	EACH	2.00	$1,600.00	
Wave to open actuator buttons	$300.00	EACH	2.00	$600.00	
Sum:				$41,400.00	

FRP Door and Hollow Metal Frames C100D East

Worn Hardware Exterior Vestibule C100D East

FRP Door and Hollow Metal Frames C100D East

Rusted Frame Exterior Vestibule C100D East

R. PRIORITY GROUP 4

Exterior Door G105

- Exterior door G105 is a hollow metal door with hollow metal frame in poor condition. Surface rust is present at the bottom of the door and frame. Hinges are rusting and in poor condition. Panic hardware is in fair condition. The sweep at the threshold is in fair condition. The door is secured by a newer maglock.
- The doors are secured by maglocks and released by motion sensors and push to exit buttons that are 2-years old and in good condition.

Rating:

3 Needs Replacement

Recommendations:

- Replace exterior doors, frames and hardware. New doors and frames to be thermally broken.

Item	Cost	Unit	Whole Building	Sum	Comments
Insulated exterior doors, frames, hardware	$4,000.00	EACH	1.00	$4,000.00	
Remove and reinstall maglocks	$150.00	EACH	1.00	$150.00	
Sum:				$4,150.00	

Hollow Metal Door and Frame

Rusted Door and Frame

Typical Glazed Aluminum Door and Hardware

Exterior:
Based on 3’-0” x 7’-0” doors, set in pairs, no center mullion, with jamb and head framing
Kawneer’s 350T Thermal Door with 10” Bottom Rails
Kawneer’s 2” x 4 1/2" Thermal Door Frame—No Transom or Sidelite
Kawneer’s #40 Dark Bronze Anodized Finish
Doors to have continuous hinges, Von Duprin 3347 Concealed Vertical Rod Panics with NT trim
Kawneer’s CO-9 offset pull handle
Sweeps (Both sides of doors because they are thermal)
Thermal Threshold
LCN 4040 Closers with 18PA Drop Plates and Blade Stop Spacers
Hardware to be Bronze
1” Clear Tempered with Standard Low E coating on the #2 or #3 surface
Demo of existing doors
Re-install of new doors and frames and perimeter caulking

Interior:
Based on 3’-0” x 7’-0” doors, set in pairs, no center mullion, with jamb and head framing
Kawneer’s 350 Non-Thermal Door with 10” Bottom Rails
Kawneer’s 1 3/4" x 4 1/2" Non-Thermal Door Frame—No Transom or Sidelite
Kawneer’s #40 Dark Bronze Anodized Finish
Doors to have continuous hinges.
Kawneer’s CO-9 offset pull handle on exterior and CPII push bar on the interior
Sweeps (Exterior side only)
LCN 4040 Closers with 18PA Drop Plates and Blade Stop Spacers
Hardware to be Bronze.
No locks or top and bottom flush bolts on inactive leaf are included
1/4" Clear Tempered
Demo of existing doors
Re-install of new doors and frames and perimeter caulking

Automatic Door Operators:
LCN Auto Operator with presence sensors and push pads