

UNIVERSITY OF LOUISVILLE®

PROCUREMENT SERVICES ADDENDUM

Date of Notice:	6/4/2025
Solicitation No.:	IB-031-25
Title:	Frazier Pediatric (KSCIRC) Fit-Out
Addendum No.:	Two (2)

The following shall clarify and/or modify the original bid document(s) as issued by the University of Louisville.

1. A/E AMENDMENT

Attached hereto is Addendum 2, prepared by Schmidt Associates, Inc.

2. QUESTIONS AND ANSWERS

- What is the spacing for the hangers for the ZEROG rails?
 - ZEROG will design the hanger systems, determine spacing, and install the system according to design phase discussions with the vendor. Our details are only intended to provide guidance and design parameters.
- Spec section 044110 – Special Inspections are included in the bid documents. To what does this masonry specification pertain?
 - The spec section number is incorrect. It is 014000.
- Is this job tax exempt? Please provide clarification.
 - UofL is tax exempt, but we are not doing owner supplied materials purchase orders as part of the project.
- Can the owner please provide a list of approved sub-contractors.
 - No.
- Can we have access to the additional elevators during off hours?
 - There are no off hours, elevator 6 is the designated elevator for this project.
- Is there access to the panel(s) for 3-Phase project components?
 - This question needs to be more specific. We walked through all the electrical rooms at the pre-bid.
- Where can we place temporary toilets? Are there facilities that we can use in place of temporary toilets?
 - Contractors will be allowed to use facilities inside Frazier Rehab unless there becomes an issue with cleanliness specific to the project.
- Are removing & replacing windows an approved method for materials delivery and ICRA?
 - Contractor can be allowed to remove a window as long as it is replaced and/or temporarily secured as soon as materials are offloaded. Any lifts/cranes will need to be parked offsite when not in use but may be able to go into the Skycare lot.
- Is the Alternate price(s) to be included on the bid form? If so, where does it need to be included.
 - Yes, see Addendum 1. New Form of Proposal.
- Is there any room for laydown/parking/dumpsters on site? If so, where is this staging area?

- a. Laydown area is limited to what can be stored on the 4th floor, there is no additional storage space available. Contractor parking is in the South lot (underneath 65 at the corner of Brook and Chestnut), pending availability. Dumpster space will be limited to no larger than a 20-yard dumpster that may need to be placed on the Abrahm Flexner Way (contractor responsible for street permit).
11. Is the elevator used on the pre-bid the main source of transporting people/materials up to the fourth floor?
- a. Elevator 6 in the north elevator bank will be used, but contractors are responsible for elevator protection (approved by UL JH facilities prior to work commencing) and for making sure nothing is transported that is over the weight limit shown on the elevators.
12. S-100 states that the Clevis Hanger, Threaded Rod, Unistrut and ZEROG Track Beam by Others. Please confirm or deny that these items are not to be included in our pricing.
- a. It is our understanding that ZEROG will provide all materials and installation of their system. This should be verified with the vendor.
13. If Clevis Hanger, Threaded Rod, Unistrut and ZEROG Track Beam are by others are we to include furnish/install of the L3x3x1/4 Angle and fasteners shown on Detail 4 on S-100?
- a. Details provided are for design intent only. It is our understanding that ZEROG will design, provide all materials, and install their system. If we have/get funding this would be future scope. Do not include in bid.
14. It appears to me that we would need to completely remove a large section of the existing sprinkler cross main, lines and sprinkler to accommodate the new duct. It is indicated that there's little to no access to the structure for hangers and bracing of the new sprinkler protection in that area. What will we be able to attach to and support the new sprinkler protection for this area? Structure is accessible but coordinated drawings/work between HVAC and Sprinkler companies will be required as noted in CMTA specs for all trades.
15. On both the 4th and 5th floors, there are existing sprinkler lines that are low (8ft - 4 inches) to the bottom of the pipe from the existing floor. In some areas they are even lower. Should I plan to demo and relocate all the existing sprinkler protection on the 4th floor, or will the existing elevation of the sprinkler system piping be able to remain?
- a. Drawings note that fire protection contractor shall rework existing fire protection mains, branch piping, and sprinkler heads in outlined areas on the 4th and 5th floors as required to accommodate new ductwork. Coordinate new sprinkler head locations with ductwork.
16. Is temporary sprinkler protection required in the construction areas? The existing system that is not removed will remain in service at the end of each shift of work.
- a. Only if not back in service at the end of the workday.
17. Just to verify, is the existing protection on the 5th floor is adequate for the type of storage being used and for future storage purposes. Will no evaluation or renovation of the existing sprinkler system be part of this project?
- a. The sprinkler piping on the 5th floor is to be modified as noted to allow for new ductwork and equipment to be installed. Will need to coordinate with Hospital on the storage within the space.
18. Are there any as-built drawings available for the existing sprinkler system on the 4th and 5th floors?
- a. Unable to locate currently.
19. Regarding the Zero G Track called out on details 4 & 5 / S100, the notes refer to the equipment vendors drawings and design requirements, but I do not see any vendor drawings included. Can you please provide this information? We were referred to section 2.2 of the bid document which includes a link to project documents, but this only includes the project plan set. We need the vendor drawings.
- a. ZEROG will provide all vendor drawings once they have designed them. ZEROG performs a turnkey service with their system by providing design, materials, and installation. Do not include in scope documents were for reference if it gets approved for the project.
20. Emergency Lighting Circuit from 3EA how many circuits are intended for this area?
- a. They connected load will only require one life safety circuit for lighting
21. The grounds buss bar in IT Room 429 where is the nearest ground buss bar to interconnect to?
- a. There is a ground bar in the third floor IT room directly below the new IT room to connect to.
22. Drawing E305 Are the smoke detectors in the AHU unit to be tied into the NAC panel on the 4th floor?
- a. They can be or a NAC can be placed in the electrical room on the fifth floor this is differed design to the fire alarm supplier
23. Does the slab need to be scanned for in-slab electrical prior to cutting openings for ductwork? If so, does the contractor need to include this cost?
- a. Yes.

24. Addendum #1 calls out for an allowance for fireproof patching. Can you please specify the amount of the allowance?
Additional fireproofing may be disturbed during construction, up to the contractors to make recommended allowance.
25. Detail 4/S100 shows a concept hoist attachment detail. Notes for this detail indicate that these are not for construction. The Zero G track, hangers and rod are all noted by others. The angle and anchors are not indicated to be by others. Is the GC responsible for the angle and the epoxy anchors or is that also by the Zero G vendor? If this is by the GC, we will need to know how many locations this is required at. Drawings do not clearly show that. **Details provided are for design intent only. It is our understanding that ZEROG will design, provide all materials, and install their system. If we have/get funding this would be future scope. Do not include in bid.**
26. ACA1 shows the location for the Zero G track, and refers to the equipment plan for more information, but AE1A doesn't show any detail for the ceiling at the track. Can you please provide a detail for this? **Details provided are for design intent only. It is our understanding that ZEROG will design, provide all materials, and install their system. If we have/get funding this would be future scope. Do not include in bid.**
27. Is a level 5 finish required at perimeter light locations (4D/AC1A1) or is level 4 finish sufficient? **Level 4 finish is what is noted in specs. The ceiling finish reference on that detail is for acoustical panel ceilings.**
28. 2C/AF1A2 indicates a brake metal windowsill, and it references spec section 084113. That specification sections are not provided. Please provide that specifications section or correct the spec number listed on plan. **Spec added in this addendum**
29. Is it acceptable to utilize separate louver sections for the new AHU louver instead of removing vertical mullions, provided the free area is sufficient? **Yes, as long as they meet the free area requirements.**
30. The Louver schedule calls out 54 SF of free area on a louver that is 144" wide x 54" tall. 54 SF is 100" of the opening size. Note 4 requires 60% free area, which would be 32.4 SF. Is that the correct free area? The specified Ruskin louver only has a 57% free area, which would be 30.8 SF. Is that the correct free area? <https://www.ruskin.com/model/elf6375dxh>
144 x 54 is louver size needed. 57% free are acceptable.

Bidder must acknowledge receipt of this and any addenda either with bid or by separate letter. Acknowledgement must be received in the Department of Procurement Services, Service Complex Building, University of Louisville no later than **06/17/2025 at 2:00PM, EST**. If by separate letter, the following information must be placed in the lower left-hand corner of the envelope:

Solicitation No.:	IB-031-25
Title:	Frazier Pediatric (KSCIRC) Fit-Out
Due Date:	06/17/2025

Authorized By:

Procurement Services	Jamie D. Peck
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Receipt Acknowledged:

Company	
Signature	
Name (print)	
Date	

ADDENDUM NO. 2

MAY 30, 2025

PREPARED BY SCHMIDT ASSOCIATES FOR:
UOFL KSCIRC PEDIATRIC SPINE REHAB
UOFL HEALTH

This Addendum consists of 1 Addendum page and 14 attachment pages totaling 15 pages.

Acknowledge receipt of this Addendum by inserting its number on the Bid Form. Failure to do so may subject the Bid to disqualification. This Addendum is part of the Contract Documents.

Bidder is encouraged to verify with reprographer of record all Addenda issued (do not rely exclusively on third party plan room services).

PART 1 - CHANGES TO PRIOR ADDENDA (NOT APPLICABLE)

PART 2 - CHANGES TO THE PROJECT MANUAL

Modifications described herein shall be incorporated in the Project Manual. All other Work shall remain unchanged.

2.1 DIVISION 01 – GENERAL REQUIREMENTS

A. Section 014110 “SPECIAL INSPECTIONS”

1. ADD Section 014110 per the attached.

2.2 DIVISION 04 – MASONRY

A. Section 044110 “SPECIAL INSPECTIONS”

1. DELETE Section 044110 in its entirety.

2.3 DIVISION 08 – OPENINGS

A. Section 084113 “ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS”

1. DELETE AND REPLACE Section 084113 per the attached.

PART 3 - CHANGES TO THE DRAWINGS (NOT APPLICABLE)

END OF ADDENDUM 2

SECTION 014000 – SPECIAL INSPECTIONS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section specifies administrative and procedural requirements for special structural tests and special inspections.
- B. The services include inspections and tests and related actions including reports performed by independent agencies. They do not include Contract enforcement activities performed by Architect.
- C. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with Contract Document requirements.
- D. Requirements of this Section relate to the production of standard products.
 - 1. Specific structural tests and special inspection requirements for individual construction activities are specified on the design drawings. Those requirements, including inspections and tests, cover the production of standard products as well as customized fabrication and installation procedures.
 - 2. Inspections, tests and related actions specified are not intended to limit Contractor's quality control procedures that facilitate compliance with Contract Document requirements.

1.2 RESPONSIBILITIES

- A. Owner Responsibilities: Owner shall bear the costs of the special structural tests and special inspections. As noted in Division 01 Section "Quality Control."
- B. Retesting: Contractor is responsible for the costs of retesting where results of required inspections, tests or similar services prove unsatisfactory construction and indicate non-compliance with Contract Document requirements.
- C. Associated Services: Contractor shall cooperate with agencies performing required inspections, tests and similar services and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include, but are not limited to, the following:
 - 1. Providing access to the Work and furnishing incidental labor and facilities necessary to facilitate inspections and tests.
 - 2. Taking adequate quantities of representative samples of materials that require testing or assisting the agency in taking samples.
 - 3. Providing facilities for storage and curing of test samples, and delivery of samples to testing laboratories.

4. Security and protection of samples and test equipment at the Project site.
- D. Duties of Testing Agency: The independent testing agency engaged to perform inspections, sampling and testing of materials and construction specified in the Contract Documents shall cooperate with the Architect and Contractor in performance of its duties and shall provide qualified personnel to perform required inspections and tests.
1. Discrepancies from the contract documents shall be brought to the immediate attention of the Contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official and to the licensed design professional in responsible charge prior to the completion of that phase of the work. A final report of inspections documenting required special inspections and correction of any discrepancies noted in the inspections shall be submitted and signed off by a PE licensed in the State of Kentucky.
 2. Agency is not authorized to release, revoke, alter or enlarge requirements of the Contract Documents or approve or accept any portion of the Work.
 3. Agency shall not perform any duties of the Contractor.
- E. Coordination: Contractor and each agency engaged to perform inspections, tests and similar services shall coordinate the sequence of activities to accommodate required services with a minimum of delay. In addition, Contractor and each agency shall coordinate activities to avoid necessity of removing and replacing construction to accommodate inspections and tests.
1. Contractor is responsible for scheduling times for inspections, tests, and similar activities.

1.3 SUBMITTALS

- A. The independent testing agency shall submit a certified written report of each inspection, test or similar service to Architect, Engineer-of-Record and Owner within 3 days of service.
1. Submit additional copies of each written report directly to the governing authority, when the authority so directs.
 2. Report Data: Written reports of each inspection, test or similar service shall include, but not be limited to:
 - a. Date of issue.
 - b. Project title and number.
 - c. Name, address and telephone number of inspection/testing agency.
 - d. Dates and locations of samples and tests or inspections. Including a partial plan drawing providing location of samples, tests, or inspections.
 - e. Names of individuals making the inspection or test.
 - f. Designation of the Work and test method.
 - g. Identification of product and Specification Section.
 - h. Complete inspection or test data.
 - i. Test results and an interpretation of test results.

- j. Ambient conditions at the time of sample-taking and testing.
 - k. Comments or professional opinion as to whether inspected or tested Work complies with Contract Document requirements.
 - l. Name and signature of inspector.
 - m. Recommendations on retesting.
3. Final Report of Inspections: Testing Agency is to provide a final letter/report to the Owner & Architect for submission to the Kentucky Department of Housing, Buildings and Construction stating that the building's compliance with code required and specified Special Inspections at the conclusion of the project.

PART 2 - EXECUTION

2.1 ACCEPTABLE TESTING AGENCIES

- A. Qualification for Service Agencies: Inspection and testing service agencies, including independent testing laboratories, shall comply with "Recommended Requirements for Independent Laboratory Qualification" by the American Council of Independent Laboratories, and which specialize in the types of inspections and tests to be performed.
- 1. Each independent inspection and testing agency engaged on the Project shall be authorized by authorities having jurisdiction to operate in the State in which the Project is located.
 - 2. The individual performing the inspections and/or testing shall have a minimum of 5 years experience in the related activity.
 - 3. Two weeks prior to start of services, the service agency shall submit qualifications of individuals who will be performing the required tasks.
 - 4. A Professional Engineer employed by the testing agency and licensed in Kentucky shall be in responsible charge of all testing activities.

2.2 REPAIR AND PROTECTION

- A. General: Upon completion of inspection, testing, sample-taking and similar services, Contractor shall repair damaged construction and restore substrates and finishes to eliminate deficiencies, including deficiencies in visual qualities of exposed finishes. Comply with Division 01 Section "Cutting and Patching".
- B. Protect construction exposed by or for structural test and special inspection service activities and protect repaired construction.
- C. Repair and protection are the Contractor's responsibility, regardless of assignment of responsibility for inspection, testing or similar services.

END OF SECTION 044110

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. Exterior and interior storefront framing.
 - 2. Exterior and interior manual-swing entrance doors.
 - 3. Storefront framing for punched openings (fixed window).

- B. Related Requirements:

- 1. Section 087100 "Door Hardware" for door hardware.
 - 2. Division 26 Sections for electrical connections including conduit and wiring for door controls and operators.

1.3 ACTION SUBMITTALS

- A. Product Data, Shop Drawings,:

- 1. Product Data: For each type of product.
 - a. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
 - 2. Shop Drawings: For aluminum-framed entrances and storefronts. Include plans, elevations, sections, full-size details, and attachments to other work.
 - a. Include details of provisions for assembly expansion and contraction and for draining moisture occurring within the assembly to the exterior.
 - b. Include full-size isometric details of each type of vertical-to-horizontal intersection of aluminum-framed entrances and storefronts, showing the following:
 - 1) Joinery, including concealed welds.
 - 2) Anchorage.
 - 3) Expansion provisions.
 - 4) Glazing.
 - 5) Flashing and drainage.

- c. Show connection to and continuity with adjacent thermal, weather, air, and vapor barriers.
 - d. Include point-to-point wiring diagrams showing the following:
 - 1) Power requirements for each electrically operated door hardware.
 - 2) Location and types of switches, signal device, conduit sizes, and number and size of wires.
- B. Samples for Verification: For each type of exposed finish required, in manufacturer's standard sizes.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- 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. Product Test Reports: For aluminum-framed entrances and storefronts, for tests performed by manufacturer and witnessed by a qualified testing agency.

1.5 CLOSEOUT SUBMITTALS

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

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
- B. Product Options: Information on Drawings and in Specifications establishes requirements for aesthetic effects and performance characteristics of assemblies. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction.
 - 1. Do not change intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If changes are proposed, submit comprehensive explanatory data to Architect for review.
- C. Single Source: System manufacturer shall manufacture framing, finish, and glass to achieve single source.

1.7 WARRANTY

- A. Special Warranty: Manufacturer 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: Five 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 D 2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 2. Warranty Period: 10 years (anodized) 20 years (high performance organic coating) from date of Substantial Completion.

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 Loads:
1. Wind Loads: As indicated on Drawings.
 2. Other Design Loads: As indicated on Drawings.
- C. Deflection of Framing Members: At design wind pressure, as follows:
1. Deflection Normal to Wall Plane: Limited to 1/175 of clear span for spans of up to 13 feet 6 inches and to 1/240 of clear span plus 1/4 inch for spans greater than 13 feet 6 inches or an amount that restricts edge deflection of individual glazing lites to 3/4 inch, whichever is less.
 2. Deflection Parallel to Glazing Plane: Limited to 1/360 of clear span or 1/8 inch, whichever is smaller.
- D. Structural: Test according to ASTM E 330/E 330M 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.
- E. Air Infiltration: Test according to ASTM E 283 for infiltration as follows:
1. Fixed Framing and Glass Area:
 - a. Maximum air leakage of at a static-air-pressure differential of 6.24 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..
- F. Water Penetration under Static Pressure: Test according to ASTM E 331 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..

G. Energy Performance: Certify and label energy performance according to NFRC as follows:

1. Thermal Transmittance (U-factor): Fixed glazing and framing areas as a system shall have U-factor of not more than 0.45 Btu/sq. ft. x h x deg F as determined according to NFRC 100.
2. Solar Heat Gain Coefficient (SHGC): Fixed glazing and framing areas as a system shall have SHGC of no greater than 0.40 as determined according to NFRC 200.
3. Condensation Resistance: Fixed glazing and framing areas as a system shall have an NFRC-certified condensation resistance rating of no less than 45 as determined according to NFRC 500.

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

1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.
2. Thermal Cycling: No buckling; stress on glass; sealant failure; excess stress on framing, anchors, and fasteners; or reduction of performance when tested according to AAMA 501.5.
 - a. High Exterior Ambient-Air Temperature: That which produces an exterior metal-surface temperature of 180 deg F.
 - b. Low Exterior Ambient-Air Temperature: 0 deg F.
 - c. Interior Ambient-Air Temperature: 75 deg F.

2.3 STOREFRONT SYSTEMS

A. Basis-of-Design Product - Exterior Applications: Subject to compliance with requirements, provide "Trifab 451 UT" framing system and "500T" Thermal Entrance Doors as manufactured by Kawneer North America or comparable product by one of the following:

1. EFCO Corporation; 403X Storefront System; D502 Thermastile Door.
2. Oldcastle BuildingEnvelope; Series 3000-XT Framing System; WS-500TC Thermal Entrances.
3. Tubelite Inc.; Storefront: Thermal=Block TU 24000 Series Entrance System. Door: Thermal=Block Wide.

B. Basis-of-Design Product - Interior Applications: Subject to compliance with requirements provide "Trifab" framing system and "500" Entrance Doors as manufactured by Kawneer North America or comparable product by one of the following:

1. EFCO Corporation; 402 (NT) Storefront System; D500 Door.
2. Oldcastle Building Envelope; Series 32000 Framing System; WS-500 Entrance Doors.
3. Tubelite, Inc.; Storefront: T14000 Entrance System; Standard Wide Door.

- C. Members: Factory/shop fabricated an field-erected stick system.
- D. 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. Glazing System: Retained mechanically with gaskets on four sides.
 - 4. Glazing Plane: Center, unless otherwise indicated.
 - 5. Fabrication Method: Field-fabricated stick system.
 - 6. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
- E. Backer Plates: Manufacturer's standard, continuous backer plates for framing members, if not integral, where framing abuts adjacent construction.
- F. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

2.4 ENTRANCE DOOR SYSTEMS

- A. Entrance Doors: Manufacturer's standard glazed entrance doors for manual-swing or automatic operation.
 - 1. Exterior Door Construction: 2- to 2-1/4-inch 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: Wide stile; 5-inch width; bottom rail 10-inch, unless otherwise indicated.
 - 3. Glazing Stops and Gaskets: Beveled, snap-on, extruded-aluminum stops and preformed gaskets.
 - a. Provide nonremovable glazing stops on outside of door.

2.5 ENTRANCE DOOR HARDWARE

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

2.6 GLAZING

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

2.7 MATERIALS

- A. Sheet and Plate: ASTM B 209.
- B. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221.
- C. Extruded Structural Pipe and Tubes: ASTM B 429/B 429M.
- D. Structural Profiles: ASTM B 308/B 308M.

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.
- 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 A 123/A 123M or ASTM A 153/A 153M requirements.
- C. Concealed Flashing: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding flashing compatible with adjacent materials.
- D. Subsills and subsill extensions: Manufacturer's standards.
- E. Subframes and receptors (for retrofit applications): Manufacturer's standard thermally-broken system.
- F. Bituminous Paint: Cold-applied asphalt-mastic paint containing no asbestos, formulated for 30-mil thickness per coat.

2.9 FABRICATION

- A. Form or extrude aluminum shapes before finishing.
- B. 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 from interior for vision glass and exterior for spandrel glazing or metal panels.
 6. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.
- C. Mechanically Glazed Framing Members: Fabricate for flush glazing without projecting stops.
- D. Storefront Framing: Fabricate components for assembly using screw spline except at door frames use shear-block system.
- E. 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.
- F. Entrance Doors: Reinforce doors as required for installing entrance door hardware.
1. At pairs of exterior doors, provide sliding-type weather stripping retained in adjustable strip and mortised into door edge.
 2. At exterior doors, provide weather sweeps applied to door bottoms.
- G. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

2.10 ALUMINUM FINISHES

- A. Clear Anodic Finish: AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.

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.
- C. Field Measurements: Contractor shall obtain all necessary field measurements and shall accurately fit work of this Section to/with work of other trades.

3.2 INSTALLATION

- A. General:
1. Comply with 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.

B. 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.

C. Set continuous sill members and flashing in full sealant bed, as specified in Section 079200 "Joint Sealants," to produce weathertight installation.

1. Seal all voids adjacent to framing system with proper sealant of color and material matching other system sealant or, if void size exceeds proper sealant application as determined by sealant manufacturer's instructions, provide metal fillers (minimum 0.040 inch thick) fabricated of same metal as framing system to fully cover void and to function as part of entire system. Finish and color of fillers shall match framing system or adjacent building cladding material and shall appear as proper component of system as determined by Architect.

D. Install components plumb and true in alignment with established lines and grades.

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

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.

3.3 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; 1/4 inch in 40 feet.
2. Level: 1/8 inch in 20 feet; 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.

3.4 MAINTENANCE SERVICE

A. Entrance Door Hardware:

- 1. Maintenance Tools and Instructions: If not furnished by Door Hardware Section, furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of entrance door hardware.
- 2. Initial Maintenance Service: Beginning at Substantial Completion, provide twelve months' full maintenance by skilled employees of entrance door hardware Installer. Include quarterly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper entrance door hardware operation at rated speed and capacity. Use parts and supplies that are the same as those used in the manufacture and installation of original equipment.

END OF SECTION 084113