SECTION 084243 - INTENSIVE CARE UNIT/CRITICAL CARE UNIT (ICU/CCU) ENTRANCES

Revise this Section by deleting and inserting text to meet Project-specific requirements.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

This Specification includes provisions for LEED 2009, LEED v4, IgCC, and Green Globes. Sustainable design requirements may be inserted in the Section Text using the hypertext links.

1. GENERAL
	* + 1. SUMMARY

Option in first paragraph below is the most common use of ICU/CCU entrances; revise to suit Project.

* + - * 1. Section includes manually operated, intensive care unit/critical care unit (ICU/CCU) entrances[**for individual special-care rooms**].

Refer to sections listed below for cross-reference requirements Contractor might expect to find in this Section but are specified in other Sections. Sections listed below are for spec editor’s and design team coordination and are to remain as Editor’s Notes. Remove referenced specification sections within the body of the specification if not applicable to the project.

Section 084229.13 "Folding Automatic Entrances" for entrances packaged with folding automatic door operators and controls.

Section 084229.23 "Sliding Automatic Entrances" for entrances packaged with sliding automatic door operators and controls.

Section 084229.33 "Swinging Automatic Entrances" for entrances packaged with swinging automatic door operators and controls.

* + - 1. COORDINATION

Retain "Recesses" paragraph below if required for sliding and swinging/folding entrances.

* + - * 1. Recesses: Coordinate sizes and locations of recesses in concrete floors for recessed tracks. Concrete, reinforcement, and formwork requirements are specified elsewhere.
				2. Templates: Distribute for doors, frames, and other work specified to be factory prepared for installing ICU/CCU entrances.
			1. PREINSTALLATION MEETINGS

Retain "Preinstallation Conference" paragraph below if Work of this Section is extensive or complex enough to justify a conference.

* + - * 1. Preinstallation Conference: Conduct conference at Project site.
			1. SUBMITTALS
				1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
				2. Manufacturer’s installation instructions shall be provided along with product data.
				3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
				4. Provide Quality Control Submittals prior to submitting the remaining submittals in order specified.

Submit Product Data, Shop Drawings, Samples for Initial Selection, [**and**] [**Delegated Design**] submittals as one package.

* + - * 1. Quality Control Submittals:

Qualification Data: For Installer.

Sample Warranties: For manufacturer's warranties.

* + - * 1. Product Data: For each configuration of ICU/CCU entrance indicated.

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

Include manufacturer’s installation instructions.

* + - * 1. Shop Drawings: For each ICU/CCU installation.

Include plans, elevations, sections, hardware mounting heights, and attachment details.

Retain "Samples for Initial Selection" and "Samples for Verification" paragraphs below for two-stage Samples.

* + - * 1. Samples for Initial Selection: For units with factory-applied [**color**] [**and**] [**metal-cladding**] finishes.
				2. Samples for Verification: For each type of exposed finish required, in manufacturer's standard sizes.
				3. Sustainable Design Submittals:
			1. QUALITY ASSURANCE
				1. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
			2. FIELD CONDITIONS
				1. Field Measurements: Verify actual dimensions of openings to receive ICU/CCU entrances by field measurements before fabrication.
			3. WARRANTY

When warranties are required, verify with Director’s Representative that warranties stated in this article are not less than remedies available to the Facility under prevailing local laws.

* + - * 1. Special Warranty: Manufacturer agrees to repair or replace components of ICU/CCU entrances that fail in materials or workmanship within specified warranty period.

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

Structural failures including, but not limited to, excessive deflection.

Faulty operation of hardware.

Deterioration of metals, metal finishes, and other materials beyond normal use.

Verify available warranties and warranty periods for ICU/CCU entrances.

Warranty Period: [**Two**] <**Insert number**> years from date of Substantial Completion.

Verify available special finish warranties. Extended 20-year finish warranties are sometimes available for 70 percent fluoropolymer coatings.

* + - * 1. Special Finish Warranty: Manufacturer agrees to repair finishes or replace components that show evidence of deterioration of factory-applied finishes within specified warranty period.

Retain first subparagraph below for factory-painted finishes. Coordinate color-fading and chalking limits with finishes retained in Part 2.

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

Color fading more than 5 Delta units when tested according to ASTM D2244.

Chalking in excess of a No. 8 rating when tested according to ASTM D4214.

Cracking, checking, peeling, or failure of paint to adhere to bare metal.

Coordinate "Warranty Period" subparagraph below with "Aluminum Finishes" Article. AAMA 2604 is intended to represent five years of performance; AAMA 2605 is intended to represent 10 years of performance. Verify available warranties and warranty periods for finishes.

Warranty Period: [**Five**] [**10**] [**20**] <**Insert number**> years from date of Substantial Completion.

1. PRODUCTS

Manufacturers and products listed in SpecAgent and MasterWorks Paragraph Builder are neither recommended nor endorsed by the AIA or Deltek. Before inserting names, verify that manufacturers and products listed there comply with requirements retained or revised in descriptions and are both available and suitable for the intended applications.

* + - 1. MANUFACTURERS, GENERAL
				1. Source Limitations: Obtain [**ICU/CCU entrances**] [**each type of ICU/CCU entrance**] from single source from single manufacturer.
			2. PERFORMANCE REQUIREMENTS

"Opening Force" paragraph below is based on requirements in ICC A117.1 and the United States Access Board's "Americans with Disabilities Act (ADA) and Architectural Barriers Act (ABA) Accessibility Guidelines for Buildings and Facilities" for accessible sliding, swinging, and folding doors. Verify requirements of authorities having jurisdiction. Consult manufacturer if entrance assembly must simultaneously comply with requirement in "Air Leakage" paragraph.

* + - * 1. Opening Force: Not more than 5 lbf to fully open door.

Retain "Air Leakage" paragraph below if required for smoke-control or pressurized entrance assemblies. The BCNYS requires assemblies to comply with smoke-control requirements in smoke barriers and smoke partitions. Pressurized entrances may also be required in isolation rooms for control of airborne infections. Generally retain first option; insert maximum air leakage if greater than that in NFPA 105 is required for all assemblies, or insert maximum leakage rate in ICU/CCU entrance paragraphs for specific assemblies. Verify which manufacturers have smoke-rated and/or pressurized ICU/CCU entrances and can demonstrate compliance.

* + - * 1. Air Leakage: Entrance assemblies for [**smoke control**] [**and**] [**pressurized rooms**] shall be listed and labeled for smoke and draft control by qualified testing agency acceptable to authorities having jurisdiction, based on testing according to UL 1784 and having maximum air leakage[**according to NFPA 105**] <**Insert requirement**> unless otherwise indicated.

Retain "Electrical Components, Devices, and Accessories" paragraph below for electrically powered devices such as electromagnet closers and electrochromic glass if required; grounding is not included.

* + - * 1. 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.
			1. SLIDING ICU/CCU ENTRANCE ASSEMBLIES

Retain option in "General" paragraph below if factory-glazed assemblies are required; verify availability with manufacturer. See the Evaluations.

* + - * 1. General: Provide manufacturer's[**factory-glazed**] ICU/CCU entrances indicated including door leaves, sidelites, framing, headers, carrier assemblies, roller tracks, and accessories required for a complete installation.
				2. Breakaway Hardware: Release hardware that allows indicated panels to swing out in direction of egress to full 90 degrees from closed door position.

Option in "Maximum Force to Open Panel" subparagraph below is typical; however, manufacturers can set force as low as 10 lbf. Force to initiate breakaway should be more than the maximum 5 lbf required to slide door. Consult Director’s Representative or manufacturers for recommendations to suit Project.

Maximum Force to Open Panel: [**50 lbf**] <**Insert value**>.

Verify availability of second option in "Release Position" subparagraph below with manufacturers. With trackless doors, panels must be in their fully open position to swing if sidelites also swing. See the Evaluations.

Release Position: [**Sliding door fully open**] [**At any point in sliding-door travel**].

Copy "Sliding ICU/CCU Entrance" paragraph below and re-edit for each product.

Insert drawing designation. Use these designations on Drawings to identify each product.

* + - * 1. Sliding ICU/CCU Entrance <**Insert drawing designation**>:

Performance: [**Standard assembly**] [**Smoke-control assembly**] [**Pressurized-entrance assembly**] <**Insert requirement**>.

Electromagnet closer and alarm interface for smoke-rated doors are available for some models by Horton and perhaps other manufacturers.

Alarm Interface: Equip entrance with electromagnet closer that closes door when alarm is triggered.

Retain one of five "Configuration" subparagraphs below. Insert other configuration if required; verify availability with manufacturer. Indicate arrangement and location of doors and sidelites on Drawings.

Configuration: Single-sliding two-panel door, with one operable leaf and sidelite; with breakaway hardware [**for sliding leaf only**] [**for sliding leaf and sidelite**] [**as indicated on Drawings**].

Configuration: Single-sliding three-panel door, with one operable leaf and two sidelites; with breakaway hardware [**for sliding leaf only**] [**for sliding leaf and one sidelite**] [**for sliding leaf and both sidelites**] [**as indicated on Drawings**].

Configuration: Biparting-sliding four-panel door, with one operable leaf and sidelite on each side; with breakaway hardware [**for sliding leaves only**] [**for sliding leaves and both sidelites**] [**as indicated on Drawings**].

Configuration: Single-telescoping three-panel door, with two operable leaves and one sidelite; with breakaway hardware [**for sliding leaves only**] [**for sliding leaves and sidelite**] [**as indicated on Drawings**].

Configuration: Biparting-telescoping six-panel door, with two operable leaves and one sidelite on each side; with breakaway hardware [**for sliding leaves only**] [**for sliding leaves and both sidelites**] [**as indicated on Drawings**].

If adequate slide space for sliding-door leaves and frame is unavailable, door must be surface mounted.

Mounting: [**Between jambs**] [**Surface**].

Retain or revise one of three options in "Floor Track Configuration" subparagraph below, or delete all and indicate configuration on Drawings. First option is considered "trackless." Verify availability with manufacturer.

Floor Track Configuration: No track across sliding-door opening and [**at sidelites (trackless)**] [**recessed, pin-guide track system at sidelites**] [**surface-mounted, roller-guide track system at sidelites**].

Most manufacturers offer both narrow and medium designs; consult manufacturer for availability.

Stile Design: [**Narrow stile; 2-1/8-inch nominal width**] [**Medium stile; 3-1/2-inch nominal width**] [**Wide stile; more than 4-inch nominal width**] [**As indicated on Drawings**].

Rail Design: [**3-1/2-inch nominal height**] [**5-inch nominal height**] [**As indicated on Drawings**].

Muntin Bars: [**On sidelites only**] [**On doors and sidelites**] [**None**].

Glazing Stops and Gaskets: [**Beveled**] [**Square**].

Revise "Glazing" subparagraph below to suit Project. ICU/CCU entrances are generally field glazed unless specialty glazing, such as second and third options below, is required.

Glazing: [**Clear tempered**] [**Electrochromic**] [**Miniblinds**] <**Insert requirement**>.

Revise "Finish" subparagraph below if different finish is required for components of ICU/CCU entrances. Class II, clear anodic finish and Class I, dark-bronze, color anodic finish are standard with many manufacturers. However, manufacturers indicate that custom finishes, if specified, are available; verify availability of other aluminum finishes with manufacturers. If more than one finish is required, indicate location of each on Drawings, in schedules, or by inserts.

Finish framing, door(s)[**, sidelite(s)**], and header with [**Class I, clear anodic finish**] [**Class II, clear anodic finish**] [**Class I, color anodic finish**] [**Class II, color anodic finish**] [**baked-enamel or powder-coat finish**] [**high-performance organic finish (two-coat fluoropolymer)**] [**high-performance organic finish (three-coat fluoropolymer)**] [**metal cladding**] <**Insert finish**>.

Retain "Color" or "Metal Cladding" subparagraph below; delete both for clear anodic finishes. First three options in "Color" subparagraph are advertised by manufacturers for color anodic finish in "Finish" subparagraph above and may vary in color range and availability among manufacturers.

Color: [**Light bronze**] [**Dark bronze**] [**Black**] [**As indicated by manufacturer's designations**] [**Match Director’s Representative's sample**] [**As selected by Director’s Representative from full range of industry colors and color densities**] <**Insert color**>.

Retain "Metal Cladding" subparagraph below only for metal-clad finish. Verify availability of metal-clad finishes with manufacturers before specifying.

Metal Cladding: [**No. 4, directional-satin-finish stainless steel**] [**No. 8, mirrorlike reflective, nondirectional-polish-finish stainless steel**] [**Satin brass**] [**Polished brass**] [**Satin bronze**] <**Insert finish**>.

* + - 1. SWINGING ICU/CCU ENTRANCE ASSEMBLIES

Retain option in "General" paragraph below if factory-glazed assemblies are required; verify availability with manufacturer. See the Evaluations.

* + - * 1. General: Provide manufacturer's[**factory-glazed**] ICU/CCU entrances as indicated including door leaves, framing, and accessories required for a complete installation.

Copy "Swinging ICU/CCU Entrance" paragraph below and re-edit for each product.

Insert drawing designation. Use these designations on Drawings to identify each product.

* + - * 1. Swinging ICU/CCU Entrance <**Insert drawing designation**>:

Performance: [**Standard assembly**] [**Smoke-control assembly**] [**Pressurized-entrance assembly**] <**Insert requirement**>.

Retain one option in "Configuration" subparagraph below. Insert other configuration if required; verify availability with manufacturer. Indicate arrangement and location of door panels on Drawings.

Configuration: [**Single panel**] [**Two equal panels (both primary panels)**] [**Two unequal panels (one active, primary panel and one inactive, secondary panel)**] <**Insert configuration**>.

Revise "Mounting" subparagraph below if surface-mounted door assembly is required.

Mounting: Between jambs.

Most manufacturers offer both narrow and medium designs; consult manufacturer for availability.

Stile Design: [**Narrow stile; 2-1/8-inch nominal width**] [**Medium stile; 3-1/2-inch nominal width**] [**Wide stile; more than 4-inch nominal width**] [**As indicated on Drawings**].

Top Rail Design: [**3-1/2-inch nominal height**] [**5-inch nominal height**] [**As indicated on Drawings**] <**Insert requirement**>.

Third option in "Bottom Rail Design" subparagraph below is a high bottom rail that may be required for accessible swing doors. Verify requirements of authorities having jurisdiction. See the Evaluations.

Bottom Rail Design: [**3-1/2-inch nominal height**] [**5-inch nominal height**] [**10-inch nominal height**] [**As indicated on Drawings**] <**Insert requirement**> with weather sweep.

Muntin Bars: [**On doors**] [**None**].

Glazing Stops and Gaskets: [**Beveled**] [**Square**].

Revise "Glazing" subparagraph below to suit Project. ICU/CCU entrances are generally field glazed unless specialty glazing, such as second and third options below, is required.

Glazing: [**Clear tempered**] [**Electrochromic**] [**Miniblinds**] <**Insert requirement**>.

Revise "Finish" subparagraph below if different finish is required for components of ICU/CCU entrances. Class II, clear anodic finish and Class I, dark-bronze, color anodic finish are standard with many manufacturers. However, manufacturers indicate that custom finishes, if specified, are available; verify availability of other aluminum finishes with manufacturers. If more than one finish is required, indicate location of each on Drawings, in schedules, or by inserts.

Finish framing and door(s) with [**Class I, clear anodic finish**] [**Class II, clear anodic finish**] [**Class I, color anodic finish**] [**Class II, color anodic finish**] [**baked-enamel or powder-coat finish**] [**high-performance organic finish (two-coat fluoropolymer)**] [**high-performance organic finish (three-coat fluoropolymer)**] [**metal cladding**] <**Insert finish**>.

Retain "Color" or "Metal Cladding" subparagraph below; delete both for clear anodic finishes. First three options in "Color" subparagraph are advertised by manufacturers for color anodic finish in "Finish" subparagraph above and may vary in color range and availability among manufacturers.

Color: [**Light bronze**] [**Dark bronze**] [**Black**] [**As indicated by manufacturer's designations**] [**Match Director’s Representative's sample**] [**As selected by Director’s Representative from full range of industry colors and color densities**] <**Insert color**>.

Retain "Metal Cladding" subparagraph below only for metal-clad finish. Verify availability of metal-clad finishes with manufacturers before specifying.

Metal Cladding: [**No. 4, directional-satin-finish stainless steel**] [**No. 8, mirrorlike reflective, nondirectional-polish-finish stainless steel**] [**Satin brass**] [**Polished brass**] [**Satin bronze**] <**Insert finish**>.

* + - 1. SWINGING/FOLDING ICU/CCU ENTRANCE ASSEMBLIES

Retain option in "General" paragraph below if factory-glazed assemblies are required; verify availability with manufacturer. See the Evaluations.

* + - * 1. General: Provide manufacturer's standard[**factory-glazed**] ICU/CCU entrances including door leaves, framing, headers, carrier assemblies, and accessories required for a complete installation as indicated.

Feature in "Breakaway Hardware" paragraph below is not offered by all manufacturers. Verify availability with manufacturers.

* + - * 1. Breakaway Hardware: Release hardware that allows folding panels to swing out in direction of egress to full 90 degrees from closed door position.

Option in "Maximum Force to Open Folding Panels" subparagraph below to initiate breakaway should be more than the maximum 5 lbf required to move door into folded position. Consult Design Team or manufacturers for recommendations to suit Project.

Maximum Force to Open Folding Panels: [**50 lbf**] <**Insert value**>.

Copy "Swinging/Folding ICU/CCU Entrance" paragraph below and re-edit for each product.

Insert drawing designation. Use these designations on Drawings to identify each product.

* + - * 1. Swinging/Folding ICU/CCU Entrance <**Insert drawing designation**>:

Retain option in "Configuration" subparagraph below if required; this feature is offered by Stanley and perhaps other manufacturers. Indicate arrangement and location of primary and secondary panels on Drawings.

Configuration: Three-panel assembly consisting of one swinging panel (primary) and two folding panels (secondary)[**with breakaway hardware for folding panels**].

Double-acting feature described in first subparagraph below is not offered by all manufacturers.

Provide double-acting swinging panel capable of swinging in both directions.

Revise "Mounting" subparagraph below if surface-mounted door assembly is required.

Mounting: Between jambs.

Revise "Floor Track" subparagraph below if required. Listed manufacturers indicate that their products are trackless.

Floor Track: Trackless.

Most manufacturers offer both narrow and medium designs; consult manufacturer for availability.

Stile Design: [**Narrow stile; 2-1/8-inch nominal width**] [**Medium stile; 3-1/2-inch nominal width**] [**Wide stile; more than 4-inch nominal width**] [**As indicated on Drawings**].

Top Rail Design: [**3-1/2-inch nominal height**] [**5-inch nominal height**] [**As indicated on Drawings**] <**Insert requirement**>.

Third option in "Bottom Rail Design" subparagraph below is a high bottom rail that may be required for accessible swing doors. Verify requirements of authorities having jurisdiction. See the Evaluations.

Bottom Rail Design: [**3-1/2-inch nominal height**] [**5-inch nominal height**] [**10-inch nominal height**] [**As indicated on Drawings**] <**Insert requirement**> with weather sweep.

Muntin Bars: [**On doors**] [**None**].

Glazing Stops and Gaskets: [**Beveled**] [**Square**].

Revise "Glazing" subparagraph below to suit Project. ICU/CCU entrances are generally field glazed unless specialty glazing, such as second and third options below, is required.

Glazing: [**Clear tempered**] [**Electrochromic**] [**Miniblinds**] <**Insert requirement**>.

Revise "Finish" subparagraph below if different finish is required for components of ICU/CCU entrances. Class II, clear anodic finish and Class I, dark-bronze, color anodic finish are standard with many manufacturers. However, manufacturers indicate that custom finishes, if specified, are available; verify availability of other aluminum finishes with manufacturers. If more than one finish is required, indicate location of each on Drawings, in schedules, or by inserts.

Finish framing, door(s), and header with [**Class I, clear anodic finish**] [**Class II, clear anodic finish**] [**Class I, color anodic finish**] [**Class II, color anodic finish**] [**baked-enamel or powder-coat finish**] [**high-performance organic finish (two-coat fluoropolymer)**] [**high-performance organic finish (three-coat fluoropolymer)**] [**metal cladding**] <**Insert finish**>.

Retain "Color" or "Metal Cladding" subparagraph below; delete both for clear anodic finishes. First three options in "Color" subparagraph are advertised by manufacturers for color anodic finish in "Finish" subparagraph above and may vary in color range and availability among manufacturers.

Color: [**Light bronze**] [**Dark bronze**] [**Black**] [**As indicated by manufacturer's designations**] [**Match Director’s Representative's sample**] [**As selected by Director’s Representative from full range of industry colors and color densities**] <**Insert color**>.

Retain "Metal Cladding" subparagraph below only for metal-clad finish. Verify availability of metal-clad finishes with manufacturers before specifying.

Metal Cladding: [**No. 4, directional-satin-finish stainless steel**] [**No. 8, mirrorlike reflective, nondirectional-polish-finish stainless steel**] [**Satin brass**] [**Polished brass**] [**Satin bronze**] <**Insert finish**>.

* + - 1. COMPONENTS
				1. Framing[**and Transom**] Members: Extruded aluminum, minimum 0.125 inch thick and reinforced as required to support imposed loads.

Nominal Size: [**1-3/4 by 4-1/2 inches**] [**1-3/4 by 6 inches**] [**As indicated on Drawings**] <**Insert dimensions**>.

Retain "Extruded Glazing Stops and Applied Trim" subparagraph below for separately framed sidelites or transoms.

Extruded Glazing Stops and Applied Trim: Minimum 0.062-inch wall thickness.

* + - * 1. Stile and Rail Doors: 1-3/4-inch- thick, glazed doors with minimum 0.125-inch-thick, extruded-aluminum tubular stile and rail members. Mechanically fasten corners with reinforcing brackets that are welded, or incorporate concealed tie rods that span full length of top and bottom rails.

Glazing Stops and Gaskets: Snap-on, extruded-aluminum stops and preformed gaskets for glazing indicated.

Retain "Muntin Bars" subparagraph below if required. Many manufacturers include muntins as standard.

Muntin Bars: Horizontal tubular rail member for each door; match stile design.

Retain "Sidelites" paragraph below if required for sliding entrances.

* + - * 1. Sidelites: 1-3/4-inch-deep sidelites with minimum 0.125-inch-thick, extruded-aluminum tubular stile and rail members matching door design and finish.

Glazing Stops and Gaskets: Same materials and design as for stile and rail door.

Retain "Muntin Bars" subparagraph below if required.

Muntin Bars: Horizontal tubular rail member for each sidelite; match stile design.

Generally, specify glass in Section 088000 "Glazing," or Section 088853 "Security Glazing," or insert requirements in "Glazing" paragraph below to suit Project. ICU/CCU entrances are generally field glazed. See the Evaluations.

* + - * 1. Glazing: As specified in [**Section 088000 "Glazing."**] [**Section 088853 "Security Glazing."**]

Retain "Electrochromic Glazing" or "Miniblind Glazing" paragraph below, or both if required; revise to suit Project. These glazing types are generally factory installed; consult manufacturer for recommendations and available technologies before retaining.

* + - * 1. Electrochromic Glazing: As selected by Director’s Representative from full range of manufacturer's products.

Retain "Operation" subparagraph below only after consulting manufacturer for recommendations and available technologies.

Operation: Opacity [**variable with applied current**] [**or**] [**fully on or off**]. Greatest opacity results with power switched [**on**] [**or**] [**off**].

* + - * 1. Miniblind Glazing: ASTM E2190.

Glass: ASTM C1036, Type 1, Class 1, q3.

Tint: [**Clear**] [**Gray**] [**Bronze**] [**Green**] <**Insert tint**>.

Kind: Fully tempered <**Insert requirements**>.

Integral Miniblinds: Manufacturer's standard, horizontal louver blinds with aluminum slats and polyester-fiber cords; located in space between glass lites and operated by hardware located on [**inside**] [**outside**] face of glass panel.

Operation: [**Tilt only**] [**Tilt, raising, and lowering**].

Color: [**As indicated by manufacturer's designations**] [**Match Director’s Representative's sample**] [**As selected by Director’s Representative from manufacturer's full range**] <**Insert color**>.

Retain "Headers" and "Carrier Assemblies and Overhead Roller Tracks" paragraphs below for sliding entrances.

* + - * 1. Headers: Fabricated from minimum 0.125-inch-thick, extruded aluminum, and extending full width of ICU/CCU entrance units to conceal carrier assemblies and roller tracks. Provide hinged or removable access panels for service and adjustment. Secure panels to prevent unauthorized access.

Capacity: Capable of supporting doors up to [**100 lb per leaf over spans up to 14 feet**] <**Insert load and span**> without intermediate supports.

Provide sag rods for spans exceeding 14 feet.

* + - * 1. Carrier Assemblies and Overhead Roller Tracks: Assembly that allows vertical adjustment; consisting of nylon- or polyoxymethylene (POM)-covered, ball-bearing-center steel wheels operating on a continuous roller track or of ball-bearing-center steel wheels operating on a nylon- or POM-covered, continuous roller track. Support doors from carrier assembly by cantilever and pivot assembly. Provide minimum of two ball-bearing roller wheels and two antirise rollers for each active leaf.
				2. Brackets and Reinforcements: High-strength aluminum with nonstaining, nonferrous shims for aligning system components.
				3. Fasteners and Accessories: Corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.
			1. HARDWARE

Before revising this article, verify requirements for accessible entrances and emergency-exit doors and other requirements of authorities having jurisdiction. Coordinate hardware requirements with Door Hardware Consultant.

If various door and hardware combinations are needed, insert requirements in ICU/CCU entrance assembly articles.

* + - * 1. General: Provide units in sizes and types recommended by ICU/CCU entrance and hardware manufacturers for entrances and uses indicated. Finish exposed parts to match door finish[**unless otherwise indicated**].

Retain "Closer" paragraph below if required, which is unusual; consult manufacturer for recommendations and availability; revise to suit Project.

* + - * 1. Closer: BHMA A156.4, Grade 1, fully concealed spring closer, sized according to manufacturer's recommendations for door size, adjustable to comply with requirements for opening force.

Verify, with manufacturer, availability of items in "Limit Arm" and "Pulls" paragraphs below.

* + - * 1. Limit Arm: Provide to control doors and panels in the swing mode. Swing not to exceed 90 degrees.
				2. Pulls: Recessed units on both sides of each operable door[**and surface-mounted, D-shaped pull for each swing-out panel**].[**Pulls on sliding doors to be exposed and usable from both sides when sliding doors are in fully open position.**]

"Manual Flush Bolts," "Positive Latch," and "Deadlocks" paragraphs below describe optional features for sliding entrances; retain if required. Manual flush bolts are typically used in the vertical stile of a swinging sidelite.

* + - * 1. Manual Flush Bolts: BHMA A156.16, Grade 1, edge mortised, lever-extension type; located at bottom of each swing-out sidelite.
				2. Positive Latch: BHMA A156.5, Grade 1, manufacturer's standard latch and strike with lever handles on each side of swinging door panels. Manual flush bolt latch at each swing-out sidelite.
				3. Deadlocks: Operated by exterior cylinder and interior thumb turn.

Deadbolts: Laminated-steel hook, mortise type, BHMA A156.5, Grade 1.

Cylinders and Keying: As specified in Section 087100 "Door Hardware.".

* + - * 1. Weather Stripping: Replaceable components.

Compression Type: ASTM D2000, molded neoprene or ASTM D2287, molded PVC.

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

* + - * 1. Weather Sweeps: Nylon brush sweep mounted to underside of door bottom.

Insert requirements for thresholds if required.

* + - 1. FABRICATION
				1. General: Factory fabricate ICU/CCU entrance components to designs, sizes, and thicknesses indicated and to comply with indicated standards.

Fabricate aluminum components before finishing.

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.

Use concealed fasteners to greatest extent possible. Where exposed fasteners are required, use countersunk Phillips flat-head machine screws[**, finished to match framing**][**, fabricated from stainless steel**].

Where fasteners are subject to loosening or turning out from structural movements or vibration, use self-locking devices.

Reinforce members as required to receive fastener threads.

Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended by manufacturer for this purpose.

* + - * 1. Framing: Provide ICU/CCU entrances as prefabricated assemblies. Complete fabrication, assembly, finishing, hardware application, and other work before shipment to Project site.

Fabricate tubular and channel frame assemblies with welded or mechanical joints. Provide subframes and reinforcement as required for a complete system to support required loads.

Perform fabrication operations in manner that prevents damage to exposed finish surfaces.

Form profiles that are straight and free of defects or deformations.

Provide components with concealed fasteners and anchor and connection devices.

Fabricate components with accurately fitted joints, with ends coped or mitered to produce hairline joints free of burrs and distortion.

Provide anchorage and alignment brackets for concealed support of assembly from the building structure.

* + - * 1. Doors: Factory fabricated and assembled in profiles indicated. Reinforce as required to support imposed loads and for installing hardware.

Retain "Metal Cladding" paragraph below only for metal-clad finishes.

* + - * 1. Metal Cladding: Factory-fabricated and -installed metal cladding, completely covering all visible surfaces as part of prefabricated entrance assembly before shipment to Project site.

Perform fabrication operations in manner that prevents damage to exposed finish surfaces.

Form profiles that are sharp, straight, and free of defects or deformations.

Provide components with concealed fasteners and anchor and connection devices.

Fabricate components with accurately fitted joints, with ends coped or mitered to produce hairline joints free of burrs and distortion.

* + - * 1. Glazing: Fabricate framing with minimum glazing edge clearances for thickness and type of glazing indicated, according to GANA's "Glazing Manual."

Retain "Factory Glazing" paragraph below if required; revise to suit Project.

* + - * 1. Factory Glazing: Install [**electrochromic**] [**and**] [**miniblind**] glazing at the factory.
				2. Hardware: Factory install hardware to the greatest extent possible; remove only as required for final finishing operation and for delivery to and installation at Project site. Cut, drill, and tap for factory-installed hardware before applying finishes.

Provide sliding weather stripping, mortised into door, at perimeter of sliding surfaces and breakaway sidelites.

Coordinate "Electrical Grounding" paragraph below with Project's electrical engineer for connection of ICU/CCU entrance, electrical grounding systems to building grounding system.

* + - * 1. Electrical Grounding: Fabricate ICU/CCU entrances to be internally grounded, complying with requirements of authorities having jurisdiction.
			1. MATERIALS
				1. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.

Extruded Bars, Rods, Profiles, and Tubes: ASTM B221.

Sheet and Plate: ASTM B209.

Retain one or more of "Stainless-Steel Sheet," "Brass Sheet," and "Bronze Sheet" paragraphs below for metal cladding, or revise to suit Project.

* + - * 1. Stainless-Steel Sheet: ASTM A240 or ASTM A666, [**Type 304**] <**Insert type**>, stretcher-leveled standard of flatness, in manufacturer's standard thickness.

Retain "Brass Sheet" paragraph below for brassy yellow color.

* + - * 1. Brass Sheet: ASTM B36, Alloy UNS No. C26000 (cartridge brass, 70 percent copper), in manufacturer's standard thickness.

Retain "Bronze Sheet" paragraph below for bronze look. Neither alloy is a true tin bronze, but both closely match color of extruded architectural bronze (also not a true tin bronze). Revise if only one of these two alloys is acceptable or to specify another alloy.

* + - * 1. Bronze Sheet: ASTM B36, Alloy UNS No. C28000 (muntz metal, 60 percent copper) or Alloy UNS No. C23000 (red brass, 85 percent copper), in manufacturer's standard thickness.
				2. Sealants and Joint Fillers: As specified in Section 079200 "Joint Sealants."

Retain "Shrinkage-Resistant Grout" paragraph below for leveling floor tracks.

* + - * 1. Shrinkage-Resistant Grout: Premixed, nonmetallic, noncorrosive, nonstaining grout complying with ASTM C1107; of consistency suitable for application.
				2. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D1187.
			1. GENERAL FINISH REQUIREMENTS
				1. Comply with NAAMM/NOMMA 500 for recommendations for applying and designating finishes.

Retain first paragraph below for coatings and anodic finishes.

* + - * 1. Apply organic and anodic finishes to formed metal after fabrication unless otherwise indicated.
				2. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
			1. ALUMINUM FINISHES

If retaining more than one finish in paragraphs below, indicate location of each on Drawings or by inserts. If needed and available from manufacturer, insert requirements for stainless-steel- and copper-alloy-clad finishes.

Retain one of two options in "Clear Anodic Finish" paragraph below. Verify availability with manufacturer.

* + - * 1. Clear Anodic Finish: AAMA 611, [**AA-M12C22A41, Class I, 0.018 mm**] [**AA-M12C22A31, Class II, 0.010 mm**] or thicker.

Retain one of two options in "Color Anodic Finish" paragraph below. Verify availability with manufacturer.

* + - * 1. Color Anodic Finish: AAMA 611, [**AA-M12C22A42/A44, Class I, 0.018 mm**] [**AA-M12C22A32/A34, Class II, 0.010 mm**] or thicker.

"Baked-Enamel or Powder-Coat Finish" paragraph below references AAMA standard for pigmented organic coating on extrusions and panels.

* + - * 1. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils. Comply with coating manufacturer's written instructions for cleaning, conversion coating, application, and baking.

Retain one of two "High-Performance Organic Finish" paragraphs below; if both are required, indicate location of each system on Drawings, in schedules, or by inserts. First finish is standard with ICU/CCU door manufacturers; verify availability before retaining second. Retain AAMA 2604 or AAMA 2605 in first "High-Performance Organic Finish" paragraph below for high- or superior-performance organic coatings, respectively, on extrusions and panels. If specific products are required, name coating manufacturers and products.

* + - * 1. High-Performance Organic Finish: Two-coat fluoropolymer finish complying with [**AAMA 2604**] [**AAMA 2605**] and containing not less than [**50**] [**70**] percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
				2. High-Performance Organic Finish: Three-coat fluoropolymer finish complying with AAMA 2605 and containing not less than [**50**] [**70**] percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
			1. STAINLESS-STEEL FINISHES
				1. Surface Preparation: Remove tool and die marks and stretch lines, or blend into finish.
				2. Polished Finishes: ASTM A480. Grind and polish surfaces to produce uniform finish, free of cross scratches.

Retain first subparagraph below for directional finishes.

Run grain of directional finishes with long dimension of each piece.

When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.

Directional Satin Finish: No. 4.

Mirrorlike Reflective, Nondirectional Polish: No. 8.

1. EXECUTION
	* + 1. EXAMINATION
				1. Examine conditions, with Installer present, for compliance with requirements for installation tolerances, header support, and other conditions affecting performance of the Work.

Retain option in first paragraph below for electrically powered devices such as electromagnet closers and electrochromic glass if required.

* + - * 1. Examine roughing-in for[**electrical power and**] grounding systems to verify actual locations of electrical connections before automatic entrance installation.
				2. Proceed with installation only after unsatisfactory conditions have been corrected.
			1. INSTALLATION

Retain option in "General" paragraph below for electrically powered devices such as electromagnet closers and electrochromic glass if required; grounding is not included.

* + - * 1. General: Install automatic entrances according to manufacturer's written instructions[**, including wiring and connection to the building's power supply**].

Do not install damaged components. Fit frame joints to produce hairline joints free of burrs and distortion. Rigidly secure nonmovement joints. Seal joints watertight.

Where aluminum contacts dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended by manufacturer for this purpose.

Where aluminum contacts concrete or masonry, protect against corrosion by painting contact surfaces with bituminous coating.

* + - * 1. Install ICU/CCU entrances plumb, true in alignment with established lines and grades, and without warp or rack of framing members and doors. Anchor securely in place.

Retain first subparagraph below for field-installed hardware items.

Install surface-mounted hardware using concealed fasteners to greatest extent possible.

Set headers, carrier assemblies, tracks, operating brackets, and guides level and true to location with anchorage for permanent support.

Retain first subparagraph below if required for sliding and swinging/folding entrances.

Level recesses for recessed floor tracks using shrinkage-resistant grout.

Retain "Air Leakage" subparagraph below if required for smoke-control or pressurized entrance assemblies.

Air Leakage: Install entrance assemblies for [**smoke-control**] [**and**] [**pressurized rooms**] according to NFPA 105 and as indicated.

Retain "Field Glazing" paragraph below if not retaining " factory-glazed" option in ICU/CCU entrance assembly articles.

* + - * 1. Field Glazing: Install glazing as specified in [**Section 088000 "Glazing."**] [**Section 088853 "Security Glazing."**]
				2. Sealants: Comply with requirements in Section 079200 "Joint Sealants" for installing sealants, fillers, and gaskets.

Set framing members, floor tracks, and flashings in full sealant bed.

Seal perimeter of framing members with sealant.

* + - * 1. Grounding: Comply with requirements in Section 260526 "Grounding and Bonding for Electrical Systems."
			1. ADJUSTING
				1. Adjust operating hardware and moving parts to function smoothly, and lubricate as recommended by manufacturer.
				2. Adjust force to open door panels.
				3. Test grounding system for compliance with requirements of authorities having jurisdiction.

Retain first paragraph below for smoke-control and pressurized entrances.

* + - * 1. Adjust smoke-control and pressurized-entrance doors for tight closure.

Retain paragraph below if either option is required.

* + - * 1. Test and adjust [**electrochromic glass**] [**miniblinds**] to operate properly.
			1. CLEANING AND PROTECTION
				1. Clean glass and metal surfaces promptly after installation. Remove excess glazing and sealant compounds, dirt, and other substances. Repair damaged finish to match original finish.
				2. Comply with requirements in [**Section 088000 "Glazing"**] [**Section 088853 "Security Glazing"**] for cleaning and protecting glass.

END OF SECTION 084243