Openings

I. Doors and Frames

A. General

1. Doors and all related components and clearances must be ADA-compliant, durable, easy to maintain, and exterior doors shall be able to withstand deicing chemicals and finishes must be selected to provide resistance and durability to these systems Exterior and interior doors must also meet all of Amtrak's corporate security requirements.

2. All doors and frames shall be commercial or heavy-duty grade.

3. Glass surfaces shall receive application of anti-graffiti protective film as determined necessary by the Amtrak Project Manager.

B. Exterior doors

1. Exterior doors shall be one of the following:

a. Metal and glass curtain wall or storefront entry systems

i. All metal and glass doors shall be wide stile doors with ADA-compliant bottom rails.

ii. Glass must be tempered or laminated and must meet all applicable codes of the Amtrak security requirements.

b. Hollow metal: Heavy-Duty Doors and Frames: ANSI/SDI A250.8, Level 2; ANSI/SDI A250.4, Level B.

i. Exterior doors shall be not less than 16-gauge steel.

ii. The top channel of each metal door shall be solid without pockets that collect dirt and water.

iii. All exterior doors shall be galvanized, primed, and painted or stainless steel.

c. All fire rated doors must comply with NFPA 80.

2. Exterior Wood Doors: Performance Grade: ANSI/WDMA I.S. 1A

i. Exterior wood doors shall not be used unless historic requirements govern and require their usage.

C. Interior Doors

1. Interior doors with glass must have tempered or laminated glass.

2. Interior doors must have kickplates on interior and exterior, unless otherwise directed by the Design Manager.

3. Interior doors shall be one of the following:

a. Metal and glass curtain wall or storefront entry systems

i. All metal and glass doors shall be wide stile doors with ADA-compliant bottom rails.

b. Hollow Metal: Commercial Doors and Frames: NAAMM-HMMA 861; ANSI/SDI a250.4, Physical Performance Level A.

i. Interior doors shall be not less than 18-gauge steel.

c. Wood: Performance Grade: ANSI/WDMA I.S. 1A Heavy Duty.

i. Wood doors shall be solid core, either mineral core where a fire rating is required, or high-density particle board core, or wood stave core.

ii. Wood doors which are to receive clear or stained finish shall be factory finished and pre- machined for hardware. Door edges shall be fabricated of matching wood to the faces. Doors must meet ANSI/WDMA I.S. 1A and be premium grade.

D. Frames

1. Metal curtain wall or storefront entry framing

a. Door frames in metal and glass curtain wall or storefront entry systems shall be an integral part of the main framing system and shall not be secondary members or sub frames installed within the main framing members.

b. Must be in accordance with ASTM standards.

2. Hollow Metal Frames

a. Hollow metal door frames shall be 16 gauge.

b. Knock-down frames are prohibited unless specifically approved by the Amtrak Project Manager

c. Exterior hollow metal frames shall be galvanized, primed, and painted.

d. Exterior metal frame must be anchored to exterior walls.

3. Wood frames shall not be used unless historic requirements govern and require their usage.

E. Sliding Metal Fire Doors

1. Structural Performance, Exterior Doors: Capable of withstanding the design wind components and cladding loads.

a. Design wind load of 20 lbf/sq. ft acting inward and outward

b. Testing: According to ASTM E 330.

c. Operability under wind load: Design sectional doors to remain operable under uniform pressure of 20 PSF wind load acting inward or outward.

II. Access Doors and Frames

A. General

1. Access doors and frames at toilet rooms, janitor's closets, mechanical rooms, and all unconditioned spaces shall be stainless steel.

2. Provide lockable access doors when required by the project.

3. Where required by code, provide fire-rated access doors and frames.

4. All access doors and frames must comply with NFPA 80.

III. Overhead Coiling Doors

1. Structural Performance, Exterior Doors: Capable of withstanding the design wind loads for components and cladding.

a. Minimum design wind load of 20 PSF acting inward or outward.

b. Testing: According to ASTM E 330.

c. Deflection Limits: Design overhead coiling doors to withstand design wind load without evidencing permanent deformation, racking/jamming, or disengagement of door components.

d. Operability under wind load: Design overhead coiling doors to remain operable under uniform pressure of 20 PSF wind load acting inward or outward.

2. Windborne-Debris Impact Resistance: Provide impact-protective overhead coiling doors that pass missile-impact and cyclic-pressure tests according to corresponding ASTM wind zone.

IV. Sectional Doors

1. Structural Performance, Exterior Doors: Capable of withstanding the design wind loads.

   a. Design wind load of 20 PSF acting inward or outward.

   b. Testing: According to ASTM E 330.

   c. Deflection Limits: Design sectional doors to withstand design wind loads without evidence of permanent deformation or disengagement of door components.

   d. Operability under wind load: Design sectional doors to remain operable under uniform pressure of 20 PSF wind load acting inward or outward.

V. Windows

A. General

1. All windows and related accessories shall be heavy commercial grade (HC).

B. Exterior Windows

1. Exterior windows shall be one of the following:

a. Metal and glass curtain wall or storefront systems

b. Individual metal framed windows

c. Windows and frames must be durable and easy to maintain and must meet all Amtrak corporate security requirements.

2. Wood Windows

a. Wood windows shall not be used unless historic requirements govern and require their usage.

i. Specify compliance with AWI and WDMA “Premium Grade” quality standards for the fabrication, reproduction, repair, and installation of wood windows.

b. For wood repair of existing historic window installations, specify epoxy based structural filler (no “Bondo” or similar body filler products shall be employed)

c. Use epoxy consolidates to repair deep damage in wood substrates prior to applying structural filler.

3. Plastic or fiberglass framed windows

a. Plastic or fiberglass framed windows will not be accepted.

C. Interior Windows

1. Interior windows shall be one of the following:

a. Fixed glass in aluminum storefront or hollow metal frames

b. Wood windows must not be used unless historic requirements govern and require their usage and approved by Amtrak Project Manager.

D. Screens

1. Insect screens shall be installed at all operable exterior windows.

a. Where possible, insect screens shall be mounted at the interior of the window.

b. Aluminum-framed window screens and hardware shall comply with ANSI/SMA 1004, "Specifications for Aluminum Tubular Frame Screens for Windows," Architectural C-24 class.

VI. Unit Skylights

A. General

1. Skylights should only be considered where required to provide daylight to interior spaces that cannot be provided with windows in the exterior walls or where required for passive solar heating.

2. Skylights must comply with Amtrak corporate security requirements.

3. Before specifying a skylight, the Design Contractor shall consider the following:

a. How to reduce heat gain from direct sunlight during cooling periods.

b. How to reduce visual glare from direct sunlight.

c. How to reduce heat loss during heating periods.

d. Security and safety.

B. Materials

1. Skylights shall be commercial grade metal framed units with all framing, glass, flashings, and all other accessories supplied by a single source.

C. Installation

1. Install all skylights and roof windows in strict accordance with skylight and roofing manufacturer’s written instructions.

2. Installation Guidelines required to be included in Specifications where applicable.

D. Warranty

1. The manufacturer shall warranty all materials and workmanship for at least 5 years from the date of Substantial Completion.

VII. Door Hardware

A. General

1. All door hardware must comply with Amtrak corporate security standards.

2. Fire-Rated Door Assemblies: Where fire-rated doors are indicated, use door hardware complying with NFPA 180.

3. Electrified Door Hardware: Listed and labeled as defined in NFPA 70.

4. Door hardware shall be Grade I certified per ANSI BHMA A156.1 and must be durable, easy to maintain, and be able to withstand deicing chemicals.

5. Hardware items selected from manufacturers shall be selected as a complete system and not as individual parts unless approved by the manufacturer.
6. At existing buildings, the hardware selected should match what is currently in use at that location, unless the existing hardware is not Code-compliant.
7. All hardware for doors in curtainwall, storefront and entry systems, except for cylinders, shall be furnished by the system manufacturer.
8. All fasteners for hardware shall attach to a solid substrate.
9. Specified hardware shall not contain any plastic components. The only exception to this rule may the plastic bumper on door stops.

B. Hardware

1. Hinges

a. Provide a minimum of 3-barrel type hinges per door.

b. Provide heavy duty continuous geared hinges at high traffic doors, including primary entry doors. Continuous Hinges to comply with BHMA A156.26; minimum 0.120-inch thick, hinge leaves with minimum overall width of 4 inches; fabricated to full height of door and frame and to template screw locations; with components finished after milling and drilling are complete.

c. All barrel hinges to be medium and large heavyweight Grade I certified per ANSI BHMA A156.1. Standard Grade I certified per ANSI BHMA A156.1 is only permitted on small shelter structures and only then with specific written permission from the Amtrak Project Manager.

d. All exterior and security doors are to be fitted with non-removable pin hinges.

e. All hinges must be comprised of solid material. No hollow material is to be permitted on any hinge product.

2. Door Handles and Locks and latch sets

a. Provide Lever Handle lock and latch sets as indicated below:

i. Exterior Doors: Entrance function.

ii. Office Doors: Office Function.

iii. Closet Doors: Passage Function.

iv. Single Occupant Toilet room Doors: Privacy Function.

v. Baggage, Mechanical, Telecommunications and Storage rooms: Storage room function.

vi. Other Doors: Verify with Amtrak

b. Provide Push/Pull hardware with no latch at all multiple occupant toilet room doors.

3. Deadbolts

a. Deadbolts shall not be permitted at any doors that are a means of egress from any passenger occupied spaces.

b. Use of deadbolts and their locations should be determined on a case-by-case basis.

4. Cylinders and Keys

a. All cylindrical locksets shall be Grade I certified per ANSI/BHMA 152.2

b. All mortise locksets shall be Grade I certified per ANSI BHMA 156.13.

c. Verify all keying requirements with the station master who is required to operate the station.

i. A master key set shall be provided to the Stationmaster.

ii. Unless new keying system is proposed for project specifically, new keys should follow existing keying system. Coordinate this requirement with Amtrak Station Engineering.

iii. Restricted keyways: Amtrak Project Manager must be consulted if these are appropriate on the given project.

iv. Unless matching building standards, all new cylinders to use Small Format interchangeable (SFIC) cores.

d. Stations and Corporate Facilities

i. Permanent keys and cores to be provided by Amtrak. Confirm installation responsibility with Project Manager and Design Manager.

ii. Contractor to provide temporary construction cores in the event of permanent core delays.

5. Electromechanical Locks

a. Electromechanical Locks: BHMA A156.25; motor or solenoid driven; with strike that suits frame

6. Exit Locks and Alarms

a. Exit Locks and Alarms must comply with BHMA A156.29, Grade 1.

7. Door Card Readers

a. Door Card Readers: Refer to Amtrak Corporate Security Standards.

8. Closers

a. 1 ½" piston diameter, rated for 5 million cycles preferred.

b. Closer body must be solid aluminum or cast iron.

c. Closers are not to be installed on:

i. Exterior side of building entry doors.

ii. Public-facing or corridor side of door.

d. Provide closers at the following locations:

i. Toilet room doors.

ii. Exterior doors and doors between conditioned and unconditioned spaces.

iii. Interior vestibule doors.

iv. Storage and telecommunications room doors.

v. All doors required by code to have a closer.

vi. Baggage Rooms

vii. Back of House Entry/Exit Doors

9. Floor/Wall Stops

a. Floor Stops or Wall Stops must be installed at all locations with doors.

10. Weather Seals

a. Weather seals must be installed at all locations with doors.Provide compressible neoprene or rubber weather seals at all exterior doors and at all doors between conditioned and unconditioned spaces.

b. Seals shall be continuous at full perimeter of doors.

11. Thresholds

a. Thresholds: BHMA A156.21; fabricated to full width of opening indicated

b. Provide thermally broken aluminum thresholds at all exterior doors and at doors between conditioned and unconditioned spaces.

c. Set threshold in full bed of sealant.

12. Other Hardware as required:

a. Provide other hardware as required for fully functioning, weathertight, and code compliant doors.

C. Finish

1. Except where historic considerations may apply, or there is a requirement to match existing hardware, all hardware shall be satin stainless-steel finish or the nearest equivalent available from the hardware manufacturer.

VIII. Automatic Door Operators

A. General

1. Emergency Breakaway: Where indicated for center-pivoted doors, use emergency breakaway feature for reverse swing of doors.

2. Fire-Rated Doors: use 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.

3. Wind Load: Use door operators on exterior doors that will open and close doors and maintain them in fully closed position when subjected to wind load.

4. All operators must be certified by AAADM.

5. Power Assist and Low Energy door operators for swinging doors must comply with BHMA A156.19.

6. Power Operated Pedestrian doors must comply with BHMA A156.10.

B. Existing Installations

1. Automatic door operators shall only be installed at existing and historic buildings where it is not possible to achieve ADA requirements with manually operated hardware.

IX. Glass Glazing

A. General

1. Structural Performance: Must comply with ASTM E1300

2. Windborne-Debris Impact Resistance: Exterior glazing must pass ASTM E1886 missile-impact and cyclic-pressure tests in accordance with ASTM E1996.

3. Safety Glazing: Where safety glazing is indicated, use glazing that complies with 16 CFR 1201, Category II.

4. All glass must be tempered or laminated.

B. Reglazing of existing windows or doors

1. The glazing selected should match what is currently in use.

C. Exterior Glass Glazing

1. Unless otherwise required for passive solar heating, all exterior wall glazing shall be minimum 1" double pane argon filled insulated glass with low-E coating.

2. Provide tempered safety glass as required by Code.

a. Where tempered safety glass is required in a curtain wall, storefront, or entry system, all glass units in that wall shall be tempered safety glass.

3. Provide laminated safety glass at skylights.

D. Interior Glass Glazing

1. Pre-glazed windows or millwork: Provide standard clear float glass as provided by the manufacturer.

2. Where manufacturer does not provide preglazed window or millwork, provide 6 mm clear float glass for field installation of glazing in the window or millwork.

3. Provide Tempered safety glass where indicated, or as required by Code.

E. Glazing requirements of other types of Glass

1. Requirements for other types of glass will be determined on a case-by-case basis.

X. Louvers

A. Louvers in exterior walls shall be storm-resistant type and rated to resist water infiltration for the location where they are to be installed. Louver blades shall be drainable type.