

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Steel doors.
 - 2. Steel door frames.

1.2 PERFORMANCE REQUIREMENTS

- A. General: Provide exterior steel doors and frames capable of complying with performance requirements indicated, based on testing manufacturer's windows that are representative of those specified.
- B. Codes Compliance: Comply with requirements of the Florida Building Code for wind and impact resistance.
- C. Wind Loads: As indicated on Drawings.

1.3 DEFINITIONS

- A. Steel Sheet Thickness: Thickness dimensions, including those referenced in ANSI A250.8, are minimums as defined in referenced ASTM standards for both uncoated steel sheet and the uncoated base metal of metallic-coated steel sheets.

1.4 SUBMITTALS

- A. Product Approval: Submit current Product Approval in accordance with the Florida Building Code for the following:
 - 1. Exterior steel doors and frames.
- B. Engineering Responsibility: Prepare engineering data for exterior steel doors and frames including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project signed and sealed by a professional engineer registered in the state of Florida.
- C. Testing and Labeling: Comply with the Florida Building Code. Submit manufacturer's certification indicating compliance.
- D. Product Data: For each type of door and frame indicated, include door designation, type, level and model, material description, core description, construction details, label compliance, and finishes.

- E. Certification: Provide written certification indicating Code compliance for all exterior doors and frames.
- F. Shop Drawings: SDI-106 Recommended Standard Door Type Nomenclature and SD-111 Recommended Standard Details for Steel Doors & Frames shall be used as a guide in the development of Schedules and Shop Drawings.
 - 1. Show the following:
 - a. Elevations of each door design.
 - b. Indicate location, size, door and frame types, rating and hand of each door.
 - c. Indicate door construction, details and methods of assembling sections, hardware locations, anchorage & fastening methods and finish requirements.
 - d. Coordination of glazing frames and stops with glass and glazing requirements.
 - e. Include anchoring details engineered to meet wind load requirements to comply with the Code.
 - f. Utilize same designation as Architect's door mark.
- G. Door Schedule: Use same reference designations indicated on Drawings in preparing schedule for doors and frames.
- H. Samples:
 - 1. Submit sample of typical mitered, welded doorframe corner for quality verification.
 - 2. Samples shall be specifically required for non-specified manufacturer's products submitted as a Substitution.
- I. Product Certificates: Product certificates shall be required by manufacturers of non-named products certifying that each product furnished meets the Specifications and with individual project requirements for the purpose intended. Certificates shall be submitted with Shop Drawings.

1.5 QUALITY ASSURANCE

- A. Steel Door and Frame Standard: Comply with requirements contained in SDI 100 Recommended Specifications for Standard Steel Doors and Frames unless more stringent requirements are indicated.
- B. Preparation/Field Verification
 - 1. Verify doorframes are in proper location and have been properly anchored in accordance with Specifications and SDI 105 Recommended Erection Instruction for Steel Frames.
 - 2. Verify that frames comply with indicated requirements for type, size, location and swing characteristics. Verify that frames have been installed with plumb jambs and level heads.
 - 3. Verify that Shop Drawings have been successfully submitted, reviewed and returned.

- C. Frame Tolerances: Utilize UNF Frame Tolerance Check List Report for each opening to verify proper installation.
 - 1. Initiate reports after installation of frame and prior to installation of adjacent walls or construction. Re-verify report during and after completion of adjacent construction.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver doors and frames cardboard-wrapped or crated to provide protection during transit and job storage.
- B. Doors shall be individually wrapped, protected and packaged as standard of manufacturer.
- C. Each door shall be marked on top and bottom rail with same opening number used on Shop Drawings.
- D. Inspect doors and frames on delivery for damage, and notify shipper and supplier if damage is found. Minor damages may be repaired provided refinished items match new work and are acceptable to Architect. Remove and replace damaged items that cannot be repaired as directed.
- E. Store doors and frames at building site under cover. Place units on minimum 4-inch- high wood blocking. Avoid using nonvented plastic or canvas shelters that could create a humidity chamber. If door packaging becomes wet, remove cartons immediately. Provide minimum 1/4-inch spaces between stacked doors to permit air circulation.

1.7 WARRANTY

- A. Manufacturer's Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Failure to meet performance requirements.
 - b. Structural failures including excessive deflection.
 - c. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 2. Warranty Period: Manufacturer's standard from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Steel Doors and Frames:
 - a. Amweld Building Products, Inc.
 - b. Ceco Door Products
 - c. Curries Company
 - d. Steelcraft

2.2 MATERIALS

- A. Hot-Rolled Steel Sheets: ASTM A 569/A 569M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.
- B. Cold-Rolled Steel Sheets: ASTM A 366, Commercial Steel (CS), or ASTM A 620, Drawing Steel (DS), Type B; stretcher-leveled standard of flatness.
- C. Metallic-Coated Steel Sheets: ASTM A 653, Commercial Steel (CS), Type B, with an A40 zinc-iron-alloy (galvannealed) coating; stretcher-leveled standard of flatness.

2.3 STANDARD STEEL DOORS

- A. General: Provide doors of design indicated, not less than thickness indicated; fabricated with smooth surfaces, without visible joints or seams on exposed faces, unless otherwise indicated. Comply with ANSI A250.8.
 - 1. Design: As indicated.
 - 2. Thickness: As indicated.
 - 3. Core Construction: Manufacturer's standard foamed-in-place polyurethane core that produces doors complying with ANSI A250.8.
 - a. Insulated Doors: Provide doors fabricated with thermal-resistance value (R-value) of not less than 6.0 deg F x h x sq. ft./Btu when tested according to ASTM C 1363.
 - 1) Locations: Non-fire rated doors, exterior.
 - 4. Vertical Edges for Single-Acting Doors: Beveled edge.
 - a. Beveled Edge: 1/8 inch in 2 inches.
 - 5. Vertical Edges for Double-Acting Doors: Round vertical edges with 2-1/8-inch radius.

6. Top and Bottom Edges: Closed with flush or inverted 0.042-inch- thick end closures or channels of same material as face sheets.
7. Tolerances: Comply with SDI 117, "Manufacturing Tolerances for Standard Steel Doors and Frames."

2.4 EXTERIOR DOORS

A. Exterior Flush Steel Doors and Frames Requiring Florida Product Approval:

1. Product and Manufacturer – Basis of Design: Steelcraft Steel Doors; Allegion
 - a. Florida Product Approval: Provide current approval certification.

2.5 FRAMES

A. General: ANSI A250.8 and with details indicated for type and profile.

1. Exterior Door Frame Gauge: 14 gauge minimum for all door frames.
2. Interior Door Frame Gauge: 16 gauge minimum for all door frames.

2.6 ACCESSORIES

A. Supports and Anchors: Fabricated from not less than 0.042-inch- thick, electrolytic zinc-coated or metallic-coated steel sheet.

1. Wall Anchors in Masonry Construction: 0.177-inch- diameter, steel wire complying with ASTM A 510 may be used in place of steel sheet.

B. Inserts, Bolts, and Fasteners: Manufacturer's standard units. Where zinc-coated items are to be built into exterior walls, comply with ASTM A 153/A 153M, Class C or D as applicable.

2.7 FABRICATION

A. General: Fabricate steel door and frame units to comply with ANSI A250.8 and to be rigid, neat in appearance, and free from defects including warp and buckle. Where practical, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory assembled before shipment, to assure proper assembly at Project site.

B. Exterior Door Construction: For exterior locations and elsewhere as indicated, fabricate doors, panels, and frames from metallic-coated steel sheet. Close top and bottom edges of doors flush as an integral part of door construction or by addition of 0.053-inch- thick, metallic-coated steel channels with channel webs placed even with top and bottom edges.

1. Face sheets shall be minimum 16 gauge (0.053 in) hot-dipped galvanized steel sheets conforming to ASTM A591, Commercial Steel (CS) Class B coating, mill phosphatized.

- C. Core Construction: Manufacturer's factory installed core materials that produce a door complying with SDI standards:
 - 1. Exterior Doors: Insulated; polyurethane or polystyrene core.
- D. Clearances for Non-Fire-Rated Doors: Not more than 1/8 inch at jambs and heads, except not more than 1/4 inch between pairs of doors. Not more than 3/4 inch at bottom.
- E. Single Acting, Door-Edge Profile: Beveled edge.
- F. Tolerances: Comply with SDI 117, "Manufacturing Tolerances for Standard Steel Doors and Frames."
- G. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat or oval heads for exposed screws and bolts.
- H. Hardware Preparation: Prepare doors and frames to receive mortised and concealed hardware according to final door hardware schedule and templates provided by hardware supplier. Comply with applicable requirements in ANSI A250.6 and ANSI A115 Series specifications for door and frame preparation for hardware.
- I. Frame Construction: Fabricate frames to shape shown.
 - 1. Frames for exterior use shall have shall have mitered corners welded continuously and finished frame faces (seamless).
 - 2. Frames shall be provided with temporary spreader bars for shipping and handling purposes.
 - 3. Frames for exterior use shall be hot-dipped galvanized steel after fabrication.
 - 4. Exterior frames shall be anchored in accordance with the Notice of Acceptance.
 - 5. In addition, frames shall be provided with minimum 18-gauge base anchor. For existing masonry wall conditions that will not accept base anchor, an additional jamb anchor shall be provided.
 - 6. Frames shall be furnished in manufacturer's standard factory-applied coat of rust-inhibiting primer complying with ANSI A250.10 for acceptance criteria.
- J. Hardware Preparation
 - 1. Provide minimum hardware reinforcing gauges as required in ANSI A250.6.
 - 2. Doors and frames shall be reinforced, drilled and tapped to receive mortised hinges, locks, latches, flush bolts, etc, as required in ANSI A115 and ANSI A250.6.
 - 3. Doors shall be reinforced for specified surface-mounted hardware. Drilling and tapping may be completed at the job site by the installers.
 - 4. Hardware shall be located in accordance with locations prescribed in ANSI A250.8/SDI 100.

2.8 FINISHES

- A. Factory Finish: Factory-applied coat of rust-inhibiting primer complying with ANSI A250.10 for acceptance criteria.
 - 1. Coat all surfaces including tops and bottoms of doors.
- B. Field Finishing:
 - 1. Doors and Frames: Refer to Section 099100, Painting.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for embedded and built-in anchors to verify actual locations before frame installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.
- B. Prior to installation, adjust and securely brace welded hollow metal frames for squareness, alignment, twist, and plumbness to the following tolerances:
 - 1. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - 2. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
 - 3. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
 - 4. Plumbness: Plus or minus 1/16 inch, measured at jambs on a perpendicular line from head to floor.
- C. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

3.3 INSTALLATION

- A. General: Install steel doors, frames, and accessories according to Shop Drawings, manufacturer's data, and as specified.

- B. Hollow Metal Frames: Install hollow metal frames of size and profile indicated. Comply with ANSI/SDI A250.11.
1. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
 - a. Remove temporary braces necessary for installation only after frames have been properly set and secured.
 - b. Check plumbness, squareness, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
 2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.
 - a. Floor anchors may be set with powder-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.
 3. Installation Tolerances: Adjust hollow metal door frames for squareness, alignment, twist, and plumb to the following tolerances:
 - a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
 - c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
 - d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.
- C. Hollow Metal Doors: Fit hollow metal doors accurately in frames, within clearances specified below. Shim as necessary.
1. Non-Fire-Rated Standard Steel Doors:
 - a. Jambs and Head: 1/8 inch plus or minus 1/16 inch.
 - b. Between Edges of Pairs of Doors: 1/8 inch plus or minus 1/16 inch.
 - c. Between Bottom of Door and Top of Threshold: Maximum 3/8 inch.
 - d. Between Bottom of Door and Top of Finish Floor (No Threshold): Maximum 3/4 inch.

3.4 PROTECTION DURING CONSTRUCTION

- A. Steel doors shall be protected at all times during construction. After installation, take appropriate measures to protect doors from abuse.
- B. Replace doors and frames that are damaged or do not comply with requirements. Doors and frames may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.

3.5 ADJUSTING AND CLEANING

- A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.
- B. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.
- C. Metallic-Coated Surfaces: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

END OF SECTION 081113

SECTION 081416 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Solid-core doors.
 - 2. Factory machining for hardware.

1.2 SUBMITTALS

- A. Product Data: For doors. Include details of core and edge construction, and trim for openings. Include factory-finishing specifications.
- B. Shop Drawings: For wood doors. Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data, and other pertinent data, including the following:
 - 1. Undercuts.

1.3 QUALITY ASSURANCE

- A. Source Limitations: Obtain flush wood doors through one source from a single manufacturer.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Comply with requirements of referenced standard and manufacturer's written instructions.
- B. Mark each door on top and bottom rail with opening number used on Shop Drawings.

1.5 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install doors until building is enclosed, wet work is complete.

1.6 WARRANTY

- A. Manufacturer's Warranty: Manufacturer's standard form, signed by manufacturer, Installer, and Contractor, in which manufacturer agrees to repair or replace doors that are defective in materials or workmanship, have warped (bow, cup, or twist), or show telegraphing of core construction in face veneers.
 - 1. Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors.
 - 2. Warranty shall be in effect during the following period of time from date of Certificate of Occupancy.
 - a. Solid-Core Interior Doors: Manufacturer's standard warranty.

PART 2 - PRODUCTS

2.1 SOLID-CORE WOOD DOORS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Flush Wood Doors:
 - a. Algoma Hardwoods Inc.; Masonite International Corporation
 - b. Eggers Industries; Architectural Door Division.
 - c. VT Industries, Inc.

2.2 DOOR CONSTRUCTION, GENERAL

- A. Urea-Formaldehyde: Wood materials shall contain no added urea-formaldehyde.

2.3 DOORS WITH TRANSPARENT FINISH

- A. Interior Solid-Core Doors:
 - 1. Grade: Premium.
 - 2. Wood Species, Cut, Match, and Balance: White Oak, rift cut, slip-matched and balanced.
 - 3. Finish: Factory finished; stain color to match Architect's samples.

2.4 FABRICATION

- A. General: Fabricate doors in sizes indicated for Project-site fitting.

- B. Clearances: Additional means of gap covering shall be provided where either code required or the room use dictates privacy.
 - 1. Non-Fire-Rated Doors: Not more than 1/8 inch at jambs and heads, and not more than 1/8 inch between meeting stiles of pairs of doors; 3/4 inch at bottom unless otherwise indicated.
- C. Machining: Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3. Comply with final hardware schedules, door frame Shop Drawings, DHI A115-W series standards, and hardware templates.
 - 1. Coordinate measurements of hardware mortises in metal frames to verify dimensions and alignment before factory machining.
- D. Particleboard-Core Doors:
 - 1. Particleboard: ANSI A208.1, Grade LD-1 or Grade LD-2, made with binder containing no urea-formaldehyde.
 - 2. Blocking: Provide wood blocking in particleboard-core doors as needed to eliminate through-bolting hardware.
 - 3. Edge Construction: At hinge stiles, provide laminated-edge construction with improved screw-holding capability and split resistance. Comply with specified requirements for exposed edges.
 - a. Screw-Holding Capability: Minimum 550 lbf per WDMA T.M.-10.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine doors and installed door frames before hanging doors.
 - 1. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
 - 2. Reject doors with defects.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Hardware: For installation, see Division 08 Section Door Hardware.
- B. Manufacturer's Written Instructions: Install doors to comply with manufacturer's written instructions, referenced quality standard, and as indicated.

- C. Job-Fitted Doors: Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer. Machine doors for hardware. Seal cut surfaces after fitting and machining.
 - 1. Clearances: Provide 1/8 inch at heads, jambs, and between pairs of doors. Provide 1/8 inch from bottom of door to top of decorative floor finish or covering. Where threshold is shown or scheduled, provide 1/4 inch from bottom of door to top of threshold.
 - 2. Bevel non-fire-rated doors 1/8 inch in 2 inches at lock and hinge edges.
- D. Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

3.3 ADJUSTING

- A. Operation: Rehang or replace doors that do not swing or operate freely.
- B. Finished Doors: Replace doors that are damaged or do not comply with requirements. Doors may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION 081416

SECTION 083113 - ACCESS DOORS AND FRAMES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Access doors and frames.

1.2 SUBMITTALS

- A. Product Data: For products indicated.
 - 1. Include construction details material descriptions, dimensions of individual components and profiles, and finishes.

PART 2 - PRODUCTS

2.1 ACCESS DOORS AND FRAMES - INTERIOR

- A. Model and Manufacturer – Basis of Design: Stealth Standard Ceiling Access Panels; GC Products, Inc., Lincoln, CA
 - 1. Description: Flush mounted, glass fiber reinforced gypsum fabrication.
 - 2. Sizes: As indicated on the Drawings.

2.2 FABRICATION

- A. General: Provide access door and frame assemblies manufactured as integral units ready for installation.
- B. Finish: Manufacturer's standard factory finish prepared to receive field applied paint finish.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify substrates are plumb and true. Do not begin installation until unsatisfactory conditions have been resolved.

3.2 PREPARATION

- A. Clean surfaces prior to installation
- B. Prepare surfaces using methods recommended by the manufacturer for applications indicated.
- C. Install supplementary and permanent supports required for a complete installation.

3.3 INSTALLATION

- A. Comply with manufacturer's instructions for installing access doors.
 - 1. Finish joints and surfaces to a Level 5 finish in accordance with ASTM C 840.
- B. Protect installed products until Final Completion.
- C. Touch-up and repair damaged panels to the satisfaction of the Architect. If repairs are not acceptable to the Architect remove and replace panels or frames that are warped, bowed, or otherwise damaged.

END OF SECTION 083113

SECTION 083613 – SECTIONAL OVERHEAD DOORS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Sectional overhead doors.

1.2 SUBMITTALS

- A. Product Data: For doors.
- B. Shop Drawings: For each installation and for special components not dimensioned or detailed in manufacturer's product data.
 - 1. Include plans, elevations, sections, and mounting details.
 - 2. Include details of equipment assemblies. Indicate dimensions, required clearances, method of field assembly, components, and location and size of each field connection.
 - 3. Include points of attachment and their corresponding static and dynamic loads imposed on structure.
- C. Samples: For factory-applied finishes.
- D. Operation and Maintenance Data: For doors.

1.3 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace components of sectional doors 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. Failure of components or operators before reaching required number of operation cycles.
 - c. Faulty operation of hardware.
 - d. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use; rust through.
 - 2. Warranty Period: Manufacturer's standard from date of Substantial Completion.
- B. Finish Warranty: Manufacturer agrees to repair or replace components that show evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Warranty Period: Manufacturer's standard from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SECTIONAL OVERHEAD DOORS

- A. Model and Manufacturer: 426 Series Insulated Steel; Overhead Door Corporation
 - 1. Florida Product Approval Number: FL11734
 - 2. Door Assembly: Insulated steel door assembly.
 - 3. Operation: Manual with chain hoist.
 - 4. Insulation: Manufacturer's standard.
 - 5. Exterior Face: Steel, hot dipped galvanized, minimum 24 gauge.
 - 6. Back Cover: Minimum 26 gauge steel.
 - 7. Finish: Manufacturer's standard; color to be selected by the Architect from manufacturer's full line

- B. Warranty: Manufacturer's standard.

2.2 TRACKS, HARDWARE, AND ACCESSORIES

- A. Tracks: Manufacturer's standard, galvanized-steel track system sized for door size and weight and designed for lift type indicated.

- B. Hardware: Heavy-duty, corrosion-resistant hardware, with hot-dip galvanized, stainless-steel, or other corrosion-resistant fasteners, to suit door type.
 - 1. Locking Slide Bolt: Fabricate with side-locking bolts to engage through slots in tracks for locking by padlock, located on single-jamb side, operable from inside only.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install doors complete with hardware, anchors, inserts, hangers, and equipment supports in accordance with manufacturer's instructions and recommendations.

- B. Adjust hardware and moving parts to function smoothly so that doors operate easily, free of warp, twist, or distortion.

END OF SECTION 083613

SECTION 084113 – ALUMINUM WINDOW SYSTEM AND DOORS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Aluminum window system.
 2. Exterior doors and frames.

1.2 CODE COMPLIANCE

- A. Exterior glazing systems shall meet the requirements of the Florida Building Code.

1.3 PERFORMANCE REQUIREMENTS

- A. Performance Requirements: Provide exterior storefront and entrance systems capable of withstanding loads and thermal and structural movement requirements indicated without failure, based on testing manufacturer's standard units in assemblies similar to those indicated for this Project.
- B. Glazing Systems: Provide glazing systems capable of withstanding normal thermal movement and wind without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, and installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.
- C. Wind Loads: As indicated on Drawings.
- D. Dimensional Tolerances: Provide glazing systems that accommodate dimensional tolerances of building frame and other adjacent construction.
- E. Water Infiltration: No uncontrolled water when tested in accordance with ASTM E 331 at test pressure differential of: 10 PSF (or when required, field tested in accordance with AAMA 503). Fastener Heads must be seated and sealed against Sill Flashing on any fasteners that penetrate through the Sill Flashing.
- F. Deflection: Maximum allowable deflection in any member when tested in accordance with ASTM E 330 with allowable stress in accordance with AA Specifications for Aluminum Structures.
- G. Thermal Movement: Provide for thermal movement caused by 180 degrees F. surface temperature, without causing buckling stresses on glass, joint seal failure, undue stress on structural elements, damaging loads on fasteners, reduction of performance, or detrimental effects.

1.4 SUBMITTALS

- A. Product Approval: Submit current Product Approval documentation in accordance with the Florida Building Code.
- B. Engineering Responsibility: Prepare engineering data, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project as prepared by a professional engineer registered in the state of Florida.
- C. Testing and Labeling: Comply with the Building Code. Submit manufacturer's certification indicating compliance.
- D. Product Data: For each product specified. Include details of construction relative to materials, dimensions of individual components, profiles, and finishes.
- E. Shop Drawings: Show details of fabrication and installation, including plans, elevations, sections, details of components, provisions for expansion and contraction, and attachments to other work.
- F. Installer Certificates: Signed by manufacturer certifying that installers comply with specified requirements.
- G. Samples for Verification: Of exposed finish selected in manufacturer's standard sizes.
- H. Samples:
 - 1. Aluminum Framing: Of exposed metal finish selected in manufacturer's standard sizes.
 - 2. Glass: Glass products, in the form of 12-inch-square Samples for each type of glass indicated.
- I. Test Reports: Provide certified test reports indicating compliance with the Building Code.
- J. Warranties: Warranties specified in this Section.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced installer to assume engineering responsibility and perform work of this Section who has specialized in installing glazing systems similar to those required for this Project and who is acceptable to manufacturer.
 - 1. Engineering Responsibility: Preparation of engineering data including the following:
 - a. Shop Drawings based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.
 - b. Shop Drawings, pre-construction testing program development, and comprehensive engineering analysis by a qualified professional engineer registered in the state of Florida.

- B. Welding Standards: Comply with applicable provisions of AWS D1.2, "Structural Welding Code--Aluminum."

1.6 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace components of aluminum-framed systems that do not comply with requirements or that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: Minimum two years from date of Substantial Completion.
- B. Finish Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components on which finishes do not comply with requirements or that fail in materials or workmanship within specified warranty period. Warranty does not include normal weathering.
 - 1. Warranty Period: Manufacturer's standard from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 ALUMINUM WINDOW SYSTEM

- A. Product and Manufacturer – Basis of Design: Trifab VersaGlaze 451T Non-Impact; Kawneer Co.
 - 1. Florida Product Approval Number: FL10008
- B. Framing Members: Manufacturer's extruded- or formed-aluminum framing members of thickness required and reinforced as required to support imposed loads.
- C. Glass: Insulated, fully tempered glass
 - 1. Product and Manufacturer – Basis of Design: 1-inch VE3-2M Gray glass; Viracon
 - 2. Makeup:
 - a. Outboard Lite: 1/4-inch thick, fully tempered, Gray.
 - b. Spacer: 1/2-inch.
 - c. Inboard Lite: 1/4-inch thick, fully tempered, clear.

2.2 EXTERIOR ENTRANCE DOORS AND FRAMES

- A. Product and Manufacturer – Basis of Design: 350 Entrance Door, non-impact; Kawneer Co.
 - 1. Florida Product Approval Number: Provide current certification.
- B. Framing Members: Manufacturer's extruded- or formed-aluminum framing members of thickness required and reinforced as required to support imposed loads.

- C. Glass: Insulated, fully tempered glass
 - 1. Product and Manufacturer – Basis of Design: 1-inch VE3-2M Gray glass; Viracon
 - 2. Makeup:
 - a. Outboard Lite: 1/4-inch thick, fully tempered, Gray.
 - b. Spacer: 1/2-inch.
 - c. Inboard Lite: 1/4-inch thick, fully tempered, clear.

2.3 MATERIALS

- A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated, complying with the requirements of standards indicated below.
 - 1. Sheet and Plate: ASTM B 209.
 - 2. Extruded Bars, Rods, Shapes, and Tubes: ASTM B 221.
 - 3. Extruded Structural Pipe and Tubes: ASTM B 429.
 - 4. Bars, Rods, and Wire: ASTM B 211.
 - 5. Welding Rods and Bare Electrodes: AWS A5.10.
- B. Steel Reinforcement: Complying with ASTM A 36 for structural shapes, plates, and bars; ASTM A 611 for cold-rolled sheet and strip; or ASTM A 570 for hot-rolled sheet and strip.
- C. Glazing Gaskets: As required to comply with system performance requirements. Provide gasket assemblies that have corners sealed with sealant recommended by gasket manufacturer.
- D. Spacers, Setting Blocks, Gaskets, and Bond Breakers: Manufacturer's standard permanent, nonmigrating types in hardness recommended by manufacturer, compatible with sealants, and suitable for system performance requirements.
- E. Framing system gaskets, sealants, and joint fillers as recommended by manufacturer for joint type.

2.4 COMPONENTS

- A. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.
 - 1. Reinforce members as required to retain fastener threads.
 - 2. Do not use exposed fasteners, except for hardware application. For hardware application, use countersunk Phillips flat-head machine screws finished to match framing members or hardware being fastened, unless otherwise indicated.
- B. Concrete and Masonry Inserts: Hot-dip galvanized cast-iron, malleable-iron, or steel inserts complying with ASTM A 123 or ASTM A 153 requirements.

2.5 ENTRANCE DOOR HARDWARE

- A. General: Provide entrance door hardware for each entrance door to comply with requirements in this Section.
 - 1. Entrance Door Hardware Sets: Refer to Section 087100 Door Hardware; and provide additional hardware required for a complete installation.

2.6 FABRICATION

- A. General: Fabricate components that, when assembled, will have accurately fitted joints with ends coped or mitered to produce hairline joints free of burrs and distortion. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.
 - 1. Fabricate components for screw-spline (concealed fastener) frame construction.
 - 2. Forming: Form shapes with sharp profiles, straight and free of defects or deformations, before finishing.
 - 3. Prepare components to receive concealed fasteners and anchor and connection devices.
 - 4. Fabricate components to drain water passing joints and condensation and moisture occurring or migrating within the system to the exterior.
- B. Welding: Weld components to comply with referenced AWS standard. Weld before finishing components to greatest extent possible. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.
- C. Glazing Channels: Provide minimum clearances for thickness and type of glass indicated according to FGMA's "Glazing Manual."
- D. Metal Protection: 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. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

2.7 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 glazing systems. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Comply with manufacturer's written instructions for protecting, handling, and installing glazing systems. Do not install damaged components. Fit frame joints to produce hairline joints free of burrs and distortion. Rigidly secure non-movement joints. Seal joints watertight.
- B. Metal Protection: 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. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.
- C. Install the system plumb and true in alignment with established lines and grades without warp or rack. Lubricate operating hardware and other moving parts according to hardware manufacturers' written instructions.

3.3 PROTECTION

- A. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer that ensure glazing systems are without damage or deterioration at the time of Substantial Completion.

END OF SECTION 084113

SECTION 085113 - ALUMINUM WINDOWS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Operable windows.

1.2 SUBMITTALS

A. Product Data: For windows indicated.

- B. Shop Drawings: Include plans, elevations, sections, hardware, accessories, operational clearances, and details of installation.

PART 2 - PRODUCTS

2.1 OPERABLE WINDOWS

A. Model and Manufacturer – Basis of Design: D1038A CRL Aluminum Horizontal Pass-Thru Florence, no screen; C.R. Laurence Company

1. Glass: Fully tempered, clear; 1/4-inch thick.
2. Overhead Track: D7.
3. Hardware: Manufacturer's standard operable hardware with LK54 keyed locking device.
4. Metal Finish: Clear anodized.

B. Fasteners and Accessories: Manufacturer's standard fasteners and accessories compatible with adjacent materials.

2.2 FABRICATION

- A. Fabricate aluminum windows in sizes indicated. Include a complete system for assembling components and anchoring windows.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

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

3.2 INSTALLATION

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

3.3 ADJUSTING, CLEANING, AND PROTECTION

- A. Clean exposed surfaces immediately after installing windows. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.
 - 1. Keep protective films and coverings in place until final cleaning.
- B. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.
- C. Protect window surfaces from contact with contaminating substances resulting from construction operations. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written instructions.

END OF SECTION 085113

SECTION 087100 - FINISH HARDWARE

PART I - GENERAL

1.01 WORK INCLUDED

- A. The work in this section shall include furnishing of all items of finish hardware as hereinafter specified or obviously necessary to complete the building, except those items that are specifically excluded from this section of the specification.

1.02 DESCRIPTION OF WORK

- A. Furnish labor and material to complete hardware work indicated, as specified herein, or as may be required by actual conditions at building.
- B. Include all necessary screws, bolts, expansion shields, other devices, if necessary, as required for proper hardware application. The hardware supplier shall assume all responsibility for correct quantities.
- C. All hardware shall meet the requirements of Federal, State and Local codes having jurisdiction over this project, notwithstanding any real or apparent conflict therewith in these specifications.
- D. Fire-Rated Openings:
 - 1. Provide hardware for fire-rated openings in compliance with A.I.A. (NBFU) Pamphlet No. 80, NFPA Standards NO. 101, UBC 702 and UL10C. This requirement takes precedence over other requirements for such hardware. Provide only hardware that has been tested and listed by UL for the types and sizes of doors required, and complies with the requirements of the door and door frame labels.
 - 2. Where panic exit devices are required on fire-rated doors, provide supplementary marking on door UL label indicating Fire Door to be equipped with fire exit hardware and provide UL label on exit device indicating "Fire Exit Hardware".
- E. Fasteners:
 - 1. Hardware as furnished shall conform to published templates generally prepared for machine screw installation.
 - 2. Furnish each item complete with all screws required for installation. Typically, all exposed screws installation.
 - 3. Insofar as practical, furnished concealed type fasteners for hardware units which have exposed screws shall be furnished with Phillips flat heads screws, finished to match adjacent hardware.
 - 4. Door closers and exit devices to be installed on wood or composite fire doors shall be attached with closed head through bolts (sex bolts).

1.03 QUALITY ASSURANCE

- A. The supplier to be a directly franchised distributor of the products to be furnished and have in their employ an AHC (Architectural Hardware Consultant). This person is to be available for consultation to the architect, owner and the general contractor at reasonable times during the course of work.
- B. The finish hardware supplier shall prepare and submit to the architect six (6) copies of a complete schedule identifying each door and each set number, following the numbering system and not creating any separate system himself. He shall submit the schedule for review, make corrections as directed and resubmit the corrected schedule for final approval. Approval of schedule will not relieve Contractor of the responsibility for furnishing all necessary hardware, including the responsibility for furnishing correct quantities.
- C. No manufacturing orders shall be placed until detailed schedule has been submitted to the architect and written approval received.
- D. After hardware schedule has been approved, furnish templates required by manufacturing contractors for making proper provisions in their work for accurate fitting, finishing hardware setting. Furnish templates in ample time to facilitate progress of work.
- E. Hardware supplier shall have an office and warehouse facilities to accommodate the materials used on this project. The supplier must be an authorized distributor of the products specified.
- F. The hardware manufactures are to supply both a pre-installation class as well as a post-installation walk-thru. This is to insure proper installation and provide for any adjustments or replacements of hardware as required.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Wrap, protect finishing hardware items for shipment. Deliver to manufacturing contractors hardware items required by them for their application; deliver balance of hardware to job; store in designated location. Each item shall be clearly marked with its intended location.

1.05 WARRANTY

- A. The material furnished shall be warranted for one year after installation or longer as the individual manufacturer's warranty permits.
- B. Overhead door closers shall be warranted in writing, by the manufacturer, against failure due to defective materials and workmanship for a period of ten (10) years commencing on the Date of Final Completion and Acceptance, and in the event of failure, the manufacture is to promptly repair or replace the defective with no additional cost to the Owner.

PART II - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. To the greatest extent possible, obtain each kind of hardware from one manufacturer only.

B. All numbers and symbols used herein have been taken from the current catalogues of the following manufacturers.

PRODUCT	ACCEPTABLE MANUFACTURER	ACCEPTABLE SUBSTITUTE
1) Hinges	Ives	Hager, Stanley
2) Locks & Latches	Schlage Lock	Falcon, Sargent
3) Cylinders, Keys, Keying	Schlage Lock	NONE (owner preferred)
4) Exit Devices	Von Duprin	Falcon, Precision
5) Door Closers	LCN	Falcon
6) OH Stops/holders	Glynn Johnson	Rixson
7) Wall Stops/Floor Stops, Flushbolts	Ives	Rockwood, Hager
8) Kick Plates	Ives	Rockwood, Hager
9) Threshold/ Weather-strip	Zero	National Guard, Pemko
10) Silencers	Ives	Rockwood, Hager
11) Key Cabinet	Lund	Key Control

C. If material manufactured by other than that specified or listed herewith as an equal, is to be bid upon, permission must be requested from the architect seven (7) days prior to bidding. If substitution is allowed, it will be so noted by addendum.

2.02 FINISH OF HARDWARE:

A. Exterior Hinges to be Stainless Steel (32D) and Interior hinges to be Satin Chrome (26D) Door Closers to be Aluminum, Locks to be Satin Chrome (26D). Exit Devices to be Satin Chrome (26D). Overhead Holders to be Satin Chrome (26D), Stainless Steel (32D) and the Thresholds to be Mill Finish Aluminum.

2.03 HINGES AND PIVOTS:

- A. Exterior butts shall be Stainless Steel. Butts on all out swinging doors shall be furnished with non-removable pins (NRP).
- B. Interior butts shall be as listed.
- C. Doors 5' or less in height shall have two (2) butts. Furnish one (1) additional butt for each 2'6" in height or fraction thereof. Dutch door shall have two (2) butts per leaf.

2.04 KEYING:

- A. Locks and cylinders shall be Schlage Lock. All bittings shall be issued by lock manufacturer in order to create a grand master key system.
- B. Locks and cylinders to be construction master keyed in a manner that does not require the cylinders to be removed.
- C. Provide Two (2) each change keys per lock and Six (6) each construction master keys.

2.05 LOCKSETS:

- A. Locksets shall be Grade 1 Cylindrical, unless specified otherwise, in “ND” series, lever design RHODES as manufactured by Schlage.

- 1. Acceptable substitutions:

- A. Sargent ML

2.06 EXIT DEVICES:

- A. All devices shall be VonDuprin 99/33 Series in types and functions specified. All devices must be listed under “Panic Hardware” in accident equipment list of Underwriters Laboratories. All labeled doors with “Fire Exit Hardware” must have labels attached and be in strict accordance with Underwriters Laboratories.

- B. All exit devices shall be tested to ANSI/BHMA A156.3 test requirements by a BHMA certified testing laboratory.

- C. All surface strikes shall be roller type and come complete with a plate underneath to prevent movement. And shall be provided with a dead-latching feature to prevent latchbolt tampering.

- 1. Acceptable Substitutions:

- A. Falcon 25

2.07 DOOR CLOSERS:

- A. All closers shall be LCN 4040xp series with slim cover having non-ferrous covers, steel arms separate valves for adjusting backcheck, closing and latching cycles and adjustable spring to provide up to 50% increase in spring power. Closers shall be furnished with parallel arm mounted on all doors opening into corridors or other public spaces and shall be mounted to permit 180 degrees door swing wherever wall conditions permit. Furnish with non-hold open arms unless otherwise indicated.

- B. Door closer cylinders shall be of high strength cast construction to provide low wear operating capabilities of internal parts throughout the life of the installation. All door closers shall be tested to ANSI/BHMA A156.4 test requirements by a BHMA certified testing laboratory.

- C. Door closers shall utilize temperature stable fluid capable of withstanding temperature ranges of 120 degrees Fahrenheit to -30 degrees Fahrenheit, without requiring seasonal adjustment of closer speed to properly close the door. Closers for fire-rated doors shall be provided with temperature stabilizing fluid that complies with the standards UBC 7-2 (1997) and UL 10C.

- D. Door closers shall incorporate tamper resistant non-critical screw valves of V-slot design to reduce possible clogging from particles within the closer. Closers shall have separate and independent screw valve adjustments for latch speed, general speed, and hydraulic backcheck. Backcheck shall be properly located so as to effectively slow the swing of the door at a minimum of 10 degrees in advance of the dead stop location to protect the door frame and hardware from damage. Pressure relief valves (PRV) are not acceptable.

- 1. Acceptable Substitutions:

- A. Falcon SC81

2.08 TRIM AND PLATES:

- A. Kick plates, mop plates, and armor plates, shall be .050 gauge with 32D finish. Kick plates to be 12" high, mop plates to be 4" high. All plates shall be two (2) inches less full width of door.
- B. Push plates, pull plates, door pulls, and miscellaneous door trim shall be shown in the hardware schedule.

2.09 DOOR STOPS:

- A. Door stops shall be furnished for all door to prevent damage to doors or hardware from striking adjacent walls or fixtures. Wall bumpers equal to Ives WS407 Series are preferred, but where not practical furnish floor stops equal to Ives FS18S or FS438 series. Where conditions prohibit the use of either wall or floor type stops, furnish surface mounted overhead stops equal to Glynn Johnson, 450 Series.

2.10 THRESHOLDS AND WEATHERSTRIP:

- A. Thresholds and weatherstrip shall be as listed in the hardware schedule.

2.11 DOOR SILENCERS:

- A. Furnish rubber door silencers equal to Ives SR64 for all new interior hollow metal frames, (2) per pair and (3) per single door frame.

PART III - EXECUTION

3.01 INSTALLATION:

- A. All hardware shall be applied and installed in accordance with the Finish Hardware schedule. Care shall be exercised not to mar or damage adjacent work.
- B. Contractor to provide a secure lock-up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items that are not immediately replaceable, so that the completion of the work will not be delayed by hardware losses both before and after installation.
- C. No hardware is to be installed until the hardware manufactures have provided a pre-installation class. This is to insure proper installation of the specified products.

3.02 ADJUSTING AND CLEANING:

- A. Contractor shall adjust all hardware in strict compliance with manufacturer's instructions. Prior to turning project to owner, contractor shall clean and make any final adjustments to the finish hardware.

3.03 PROTECTION:

- A. Contractor shall protect hardware as it is stored on construction site in a covered and dry place.
- B. Contractor shall protect exposed hardware installed on doors during the construction phase.

3.04 KEY CABINET:

- A. Set up and index one (1) Key Cabinet that allows room for expansion for 150% of the number of keys for the project.

3.05 HARDWARE SCHEDULE:

- A. The following schedule is furnished for whatever assistance it may afford the contractor; do not consider it as entirely inclusive. Should any particular door or item be omitted in any scheduled hardware group, provide door or item with hardware same as required for similar purposes. Quantities listed are for each pair of doors; or for each single door.
- B. This hardware schedule prepared by.

Allegion, PLC
3451 Technological Ave, Suite 7
Orlando FL 32817
Ph: 407-571-2000
Fax 407-571-2006

HARDWARE GROUP NO. 1 - ENTRY/STOREFRONT

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	224XY	628	IVE
2	EA	CONT. HINGE	224XY EPT	628	IVE
2	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	FIRE EXIT HARDWARE	HH-3347A-EO-F	626	VON
1	EA	ELEC FIRE EXIT HARDWARE	RX-LC-HH-3347A-NL-OP-F-388	626	VON
1	EA	RIM CYLINDER	20-057-ICX	626	SCH
1	EA	PRIMUS CORE	20-740	626	SCH
1	EA	MAGNETIC LOCK	M490	628	SCE
2	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
2	EA	SURFACE CLOSER	4021 TBSRT	689	LCN
2	EA	FLOOR STOP	FS18S	BLK	IVE
1	EA	THRESHOLD	65A-MSLA-10	A	ZER
2	EA	WIRE HARNESS	CON-32		SCH
2	EA	WIRE HARNESS	CON-12		SCH
1	EA	MOTION SENSOR	SCANII 12/24 VDC	WHT	SCE
2	EA	DOOR CONTACT	679-05HM	BLK	SCE
1	EA	POWER SUPPLY	PS902	LGR	VON
1		CARD READER BY OTHERS			

WIRING DIAGRAMS BY HARDWARE SUPPLIER. BALANCE OF HARDWARE BY ALUMINUM DOOR SUPPLIER.

FUNCTIONAL DESCRIPTION:

IMMEDIATE EGRESS ALWAYS ALLOWED BY EXIT DEVICE. AUTHORIZED CREDENTIAL PRESENTED AT CARD READER MOMENTARILY RELEASES THE MAG LOCK ON THE ACTIVE DOOR ONLY ALLOWING MANUAL INGRESS THRU OPENING. SCAN II AND/OR RX SWITCH RELEASE THE MAG LOCK FOR EGRESS AT ALL TIMES. DOOR CONTACTS ARE CONNECTED TO BUILDING SECURITY SYSTEM.

HARDWARE GROUP NO. 2

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	224XY EPT	628	IVE
1	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	ELEC PANIC HARDWARE	RX-QEL-HH-99-NL-OP-110MD-299F- CON-SNB 24 VDC	626	VON
1	EA	RIM CYLINDER	20-057-ICX	626	SCH
1	EA	PRIMUS CORE	20-740	626	SCH
1	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
1	EA	SURFACE CLOSER	4040XP REG OR PA AS REQ TBSRT	689	LCN
1	EA	OPTIONAL PA SHOE	4040XP-62A	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B4E	630	IVE
1	EA	FLOOR STOP	FS18S	BLK	IVE
1	EA	RAIN DRIP	142AA	AA	ZER
1	EA	GASKETING	31AA-S	AA	ZER
1	EA	THRESHOLD	65A-MSLA-10	A	ZER
1	EA	VIEWER	698	626	IVE
1	EA	WIRE HARNESS	CON-32		SCH
1	EA	WIRE HARNESS	CON-12		SCH
1	EA	DOOR CONTACT	679-05HM	BLK	SCE
1	EA	POWER SUPPLY	PS902	LGR	VON
1			CARD READER BY OTHERS		

WIRING DIAGRAMS BY HARDWARE SUPPLIER.

OPERATIONAL DESCRIPTION:

IMMEDIATE EGRESS ALWAYS ALLOWED BY EXIT DEVICE. ACCESS CONTROL SYSTEM GIVE SIGNAL TO RETRACT QEL IN ORDER TO OPEN THE DOOR FROM THE EXTERIOR. REQUEST TO EXIT AND DOOR CONTACT CONNECTED TO BUILDINGS SECURITY SYSTEM.

HARDWARE GROUP NO. 3

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	224XY EPT	628	IVE
1	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	ELEC PANIC HARDWARE	RX-QEL-33A-NL-OP-388 24 VDC	626	VON
1	EA	RIM CYLINDER	20-057-ICX	626	SCH
1	EA	PRIMUS CORE	20-740	626	SCH
1	EA	90 DEG OFFSET PULL	8190HD 10" O	630	IVE
1	EA	SURFACE CLOSER	4040XP REG OR PA AS REQ TBSRT	689	LCN
1	EA	FLOOR STOP	FS18S	BLK	IVE
1	EA	RAIN DRIP	142AA	AA	ZER
1	EA	THRESHOLD	65A-MSLA-10	A	ZER
1	EA	WIRE HARNESS	CON-32		SCH
1	EA	WIRE HARNESS	CON-12		SCH
1	EA	DOOR CONTACT	679-05HM	BLK	SCE
1	EA	POWER SUPPLY	PS902	LGR	VON
1		CARD READER BY OTHERS			

WIRING DIAGRAMS BY HARDWARE SUPPLIER. BALANCE OF HARDWARE BY ALUMINUM DOOR SUPPLIER

OPERATIONAL DESCRIPTION:

IMMEDIATE EGRESS ALWAYS ALLOWED BY EXIT DEVICE. ACCESS CONTROL SYSTEM GIVE SIGNAL TO RETRACT QEL IN ORDER TO OPEN THE DOOR FROM THE EXTERIOR. REQUEST TO EXIT AND DOOR CONTACT CONNECTED TO BUILDINGS SECURITY SYSTEM.

HARDWARE GROUP NO. 4:

BALANCE OF HARDWARE BY MANUFACTURER

HARDWARE GROUP NO. 5

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
6	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	SET	AUTO FLUSH BOLT	FB41P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	STOREROOM LOCK	ND80JD RHO	626	SCH
1	EA	PRIMUS CORE	20-740	626	SCH
1	EA	COORDINATOR	COR X FL	628	IVE
2	EA	SURFACE CLOSER	4040XP EDA ST-1754	689	LCN
2	EA	KICK PLATE	8400 12" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	EA	GASKETING	188S-BK	S-BK	ZER

HARDWARE GROUP NO. 6

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
6	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	SET	AUTO FLUSH BOLT	FB41P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	STOREROOM LOCK	ND80JD RHO	626	SCH
1	EA	PRIMUS CORE	20-740	626	SCH
1	EA	COORDINATOR	COR X FL	628	IVE
2	EA	SURFACE CLOSER	4040XP EDA ST-1754	689	LCN
2	EA	KICK PLATE	8400 12" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	EA	GASKETING	188S-BK	S-BK	ZER
1	EA	THRESHOLD	566A-223	A	ZER

HARDWARE GROUP NO. 7

Provide each PR door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
6	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	SET	AUTO FLUSH BOLT	FB41P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	CLASSROOM LOCK	ND70JD RHO	626	SCH
1	EA	PRIMUS CORE	20-740	626	SCH
1	EA	COORDINATOR	COR X FL	628	IVE
2	EA	SURFACE CLOSER	4040XP EDA ST-1754	689	LCN
2	EA	KICK PLATE	8400 12" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	EA	GASKETING	188S-BK	S-BK	ZER
1	EA	THRESHOLD	566A-223	A	ZER

HARDWARE GROUP NO. 8

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	ENTRANCE LOCK	ND53JD RHO	626	SCH
1	EA	PRIMUS CORE	20-740	626	SCH
1	EA	SURFACE CLOSER	4040XP SCUSH TBSRT	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B4E	630	IVE
1	EA	GASKETING	188S-BK	S-BK	ZER
1	EA	THRESHOLD	566A-223	A	ZER

HARDWARE GROUP NO. 9

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	ENTRANCE LOCK	ND53JD RHO	626	SCH
1	EA	PRIMUS CORE	20-740	626	SCH
1	EA	SURFACE CLOSER	4040XP REG OR PA AS REQ TBSRT	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B4E	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	EA	GASKETING	188S-BK	S-BK	ZER

HARDWARE GROUP NO. 10

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	ENTRANCE LOCK	ND53JD RHO	626	SCH
1	EA	PRIMUS CORE	20-740	626	SCH
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	EA	GASKETING	188S-BK	S-BK	ZER

HARDWARE GROUP NO. 11

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	ENTRANCE LOCK	ND53JD RHO	626	SCH
1	EA	PRIMUS CORE	20-740	626	SCH
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	EA	GASKETING	188S-BK	S-BK	ZER
1	EA	THRESHOLD	566A-223	A	ZER

HARDWARE GROUP NO. 12

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	ND80JD RHO	626	SCH
1	EA	PRIMUS CORE	20-740	626	SCH
1	EA	ELECTRIC STRIKE	4211 FSAFSE 12/24 VDC	630	VON
1	EA	SURFACE CLOSER	4040XP REG OR PA AS REQ TBSRT	689	LCN
1	EA	KICK PLATE	8400 12" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	EA	GASKETING	188S-BK	S-BK	ZER
1	EA	PUSH BUTTON	621AL 12/24 VDC	626	SCE
1	EA	POWER SUPPLY	PS902	LGR	VON

HARDWARE GROUP NO. 13

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	ND80JD RHO	626	SCH
1	EA	PRIMUS CORE	20-740	626	SCH
1	EA	SURFACE CLOSER	4040XP REG OR PA AS REQ TBSRT	689	LCN
1	EA	KICK PLATE	8400 12" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	EA	GASKETING	188S-BK	S-BK	ZER
1	EA	THRESHOLD	566A-223	A	ZER

HARDWARE GROUP NO. 14

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PULL PLATE	8302 10" 4" X 16"	630	IVE
1	EA	PUSH PLATE	8200 4" X 16"	US32D	IVE
1	EA	SURFACE CLOSER	4040XP SCUSH TBSRT	689	LCN
1	EA	KICK PLATE	8400 12" X 2" LDW B-CS	630	IVE
1	EA	GASKETING	188S-BK	S-BK	ZER

END OF SECTION 087100

SECTION 088000 - GLAZING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Glass.

1.2 DEFINITIONS

- A. Manufacturer: A firm that produces primary glass or fabricated glass as defined in referenced glazing publications.

1.3 PERFORMANCE REQUIREMENTS

- A. General: Provide glazing systems capable of withstanding normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, and installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.
- B. Glass Design: Glass thickness indicated is minimums and is for detailing only. Confirm glass thickness by analyzing Project wind loads for exterior glass and in-service conditions for exterior and interior glass.
- C. Thermal Movements: Provide glazing that allows for thermal movements resulting from the maximum change (range) in ambient and surface temperatures acting on glass framing members and glazing components.

1.4 SUBMITTALS

- A. Product Data: For each glass product and glazing material indicated.
- B. Samples: For the following products, in the form of 12-inch-square Samples for glass.
1. Each glass type indicated.
- C. Warranties: For glass types indicated.

1.5 QUALITY ASSURANCE

- A. Source Limitations for Glazing Accessories: Obtain glazing accessories from one source for each product and installation method indicated.

- B. Safety Glass: Category II materials complying with testing requirements in 16 CFR 1201 and ANSI Z97.1.
 - 1. Subject to compliance with requirements, permanently mark safety glass with certification label of Safety Glazing Certification Council or another certification agency acceptable to authorities having jurisdiction.
- C. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, unless more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards.
 - 1. GANA Publications: GANA'S "Glazing Manual".
- D. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of IGCC.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect glazing materials according to manufacturer's written instructions and as needed to prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not proceed with glazing when ambient and substrate temperature conditions are outside limits permitted by glazing material manufacturers and when glazing channel substrates are wet from rain, frost, condensation, or other causes.
 - 1. Do not install liquid glazing sealants when ambient and substrate temperature conditions are outside limits permitted by glazing sealant manufacturer or below 40 degrees F.

1.8 WARRANTY

- A. Manufacturer's Warranty on Insulating Glass: Manufacturer's standard form in which insulating-glass manufacturer agrees to replace insulating-glass units that deteriorate within specified warranty period.
 - 1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 HEAT TREATED FLOAT GLASS:

- A. Fabrication Process: By vertical (tong-held) or horizontal (roller-hearth) process, at manufacturer's option, except provide horizontal process where indicated as tongless or free of tong marks.

- B. Heat-Treated Float Glass: ASTM C 1048; Type I (transparent glass, flat); Quality q3 (glazing select); class, kind, and condition as indicated.

2.2 TEMPERED GLASS

- A. Tempered Glass: Clear fully tempered float glass.
 - 1. Thickness: 1/4-inch, minimum.
 - 2. Labeling: Provide safety glazing labeling.

2.3 MONOLITHIC-GLASS TYPES

- A. Tempered Glass: Clear fully tempered float glass.
 - 1. Thickness: 1/4-inch, minimum.
 - 2. Labeling: Provide safety glazing labeling.

2.4 INSULATING GLASS

- A. Insulating-Glass Units: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, qualified according to ASTM E 2190, and complying with other requirements specified.
 - 1. Sealing System: Dual seal.
 - 2. Spacer: Manufacturer's standard spacer material and construction.

2.5 ELASTOMERIC GLAZING SEALANTS

- A. General: Provide products of type indicated, complying with the following requirements:
 - 1. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
 - 2. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range for this characteristic.
- B. Elastomeric Glazing Sealant Standard: Comply with ASTM C 920 and other requirements indicated for each liquid-applied, chemically curing sealant in the Glazing Sealant Schedule at the end of Part 3, including those referencing ASTM C 920 classifications for type, grade, class, and uses.
 - 1. Additional Movement Capability: Where additional movement capability is specified in the Glazing Sealant Schedule, provide products with the capability, when tested for adhesion and cohesion under maximum cyclic movement per ASTM C 719, to withstand the specified percentage change in the joint width existing at time of installation and remain in compliance with other requirements in ASTM C 920 for uses indicated.

2.6 MISCELLANEOUS GLAZING MATERIALS

- A. General: Provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.
- B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.
- C. Setting Blocks: Elastomeric material with a Shore A durometer hardness of 85, plus or minus 5.
- D. Spacers: Elastomeric blocks or continuous extrusions with a Shore A durometer hardness required by glass manufacturer to maintain glass lites in place for installation indicated.
- E. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).
- F. Cylindrical Glazing Sealant Backing: ASTM C 1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.

2.7 FABRICATION OF GLASS AND OTHER GLAZING PRODUCTS

- A. Fabricate glass and other glazing products in sizes required to glaze openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing standard, to comply with system performance requirements.
- B. Clean-cut or flat-grind vertical edges of butt-glazed monolithic lites in a manner that produces square edges with slight kerfs at junctions with indoor and outdoor faces.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine framing glazing, with Installer present, for compliance with the following:
 - 1. Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.
 - 2. Presence and functioning of weep system.
 - 3. Minimum required face or edge clearances.
 - 4. Effective sealing between joints of glass-framing members.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.

3.3 GLAZING, GENERAL

- A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.
- B. Glazing channel dimensions, as indicated on Drawings, provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances. Adjust as required by Project conditions during installation.
- C. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.
- D. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction sealant-substrate testing.
- E. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.
- F. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.
- G. Provide spacers for glass lites where the length plus width is larger than 50 inches as follows:
 - 1. Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.
 - 2. Provide 1/8-inch minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.
- H. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.
- I. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.
- J. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.
- K. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.

3.4 SEALANT GLAZING (WET)

- A. Install continuous spacers, or spacers combined with cylindrical sealant backing, between glass lites and glazing stops to maintain glass face clearances and to prevent sealant from extruding into glass channel and blocking weep systems until sealants cure. Secure spacers or spacers and backings in place and in position to control depth of installed sealant relative to edge clearance for optimum sealant performance.
- B. Force sealants into glazing channels to eliminate voids and to ensure complete wetting or bond of sealant to glass and channel surfaces.
- C. Tool exposed surfaces of sealants to provide a substantial wash away from glass.

3.5 PROTECTION AND CLEANING

- A. Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels, and clean surfaces.
- B. Protect glass from contact with contaminating substances resulting from construction operations, including weld splatter. If, despite such protection, contaminating substances do come into contact with glass, remove them immediately as recommended by glass manufacturer.
- C. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for build-up of dirt, scum, alkaline deposits, or stains; remove as recommended by glass manufacturer.
- D. Remove and replace glass that is broken, chipped, cracked, abraded, or damaged in any way, including natural causes, accidents, and vandalism, during construction period.
- E. Wash glass on both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended by glass manufacturer.

END OF SECTION 088000