DIVISION 8

DOORS AND WINDOWS

SECTION 08111
STANDARD STEEL DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Non-rated and fire rated thermally insulated steel doors.

1.02 REFERENCES

A. ANSI A117.1 - Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People.

B. ANSI/SDI-100 - Standard Steel Doors and Frames.

C. ASTM A525 - Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.

D. ASTM E152 - Methods of Fire Tests of Door Assemblies.

E. Door Hardware Institute (DHI) - The Installation of Commercial Steel Doors and Steel Frames, Insulated Steel Doors in Wood Frames and Builder's Hardware.

1.03 SUBMITTALS

A. Submit Shop Drawings: Indicate door elevations, internal reinforcement, closure method, and cut-outs for glazing, louvers, and finish.

1.04 QUALITY ASSURANCE

A. Conform to requirements of ANSI/SDI-100 and ANSI A117.1.

1.05 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, protect, and handle products to site in accordance with manufacturer's recommendations.

B. Accept doors on site in manufacturer's packaging. Inspect for damage.

C. Break seal on-site to permit ventilation.

1.07 FIELD MEASUREMENTS

A. Verify that field measurements are as indicated on shop drawings.

1.08 COORDINATION

A. Coordinate the work with door opening construction, door frame and door hardware installation.

PART 2 PRODUCTS

2.01 DOOR MANUFACTURERS

A. W. Ray Crabb, Inc. (Denver)

B. Steelcraft/Powers (Cheyenne).

C. Western Hollow Metals (Raton).

D. Gateway Metal Products (Raton).

E. Or equal.

2.02 DOORS

A. Exterior Doors (Thermally Broken): SDI-100 Grade II Model 3.

2.03 DOOR CONSTRUCTION

A. Face: Steel sheet in accordance with ANSI/SDI-100 16 gage material.

B. Core: Vertical steel stiffeners with glass fiber butt or polystyrene insulation.

C. Thermal Insulated Door: Total insulation R value of 3.5, measured in accordance with ASTM C236.

2.04 ACCESSORIES

A. Primer: Zinc chromate type.

2.05 FABRICATION

A. Fabricate doors with hardware reinforcement welded in place.

B. Close top and bottom edge of exterior doors with inverted steel channel closure. Seal joints watertight.

2.06 FINISH

A. Steel Sheet: Galvanized to ASTM A525 G60.

B. Primer: Air dried.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that opening sizes and tolerances are acceptable.

3.02 INSTALLATION

A. Install doors in accordance with ANSI/SDI-100 and DHI.

B. Coordinate installation of doors with installation of frames specified in Section 08112 and hardware specified in Section 08710.

3.03 ERECTION TOLERANCES

A. Maximum Diagonal Distortion: 1/8 inch measured with straight edge, corner to corner.

3.04 ADJUSTING

A. Adjust door for smooth and balanced door movement, as necessary.

END OF SECTION

SECTION 08112
STANDARD STEEL FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Rolled steel frames - rated and non-rated.

1.02 REFERENCES

A. ASTM E152 - Methods of Fire Tests of Door Assemblies.

B. DHI - Door Hardware Institute: The Installation of Commercial Steel Doors and Steel Frames, Insulated Steel Doors in Wood Frames and Builder's Hardware.

C. ANSI/SDI-100 - Standard Steel Doors and Frames.

D. ANSI/SDI-105 - Recommended Erection Instructions for Steel Frames.

1.03 QUALITY ASSURANCE

A. Conform to requirements of ANSI/SDI-100.

1.04 SUBMITTALS

A. Submit shop drawings and product data under provisions of Section 01340.

B. Indicate frame configuration, anchor types and spacings, location of cutouts for hardware, reinforcement, finish and rating.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Protect products.

PART 2 PRODUCTS

2.01 FRAME MANUFACTURERS

A. W. Ray Crabb, Inc. (Denver).

B. Steelcraft/Powers (Cheyenne).

B. Western Hollow Metals (Raton).

C. Gateway Metal Products (Raton).

E. Or equal.

2.02 FRAMES

A. Interior Frames: 16 gauge thick material, base metal thickness.

B. Exterior Frames: 14 gauge thick material.

2.03 ACCESSORIES

A. Rubber Silencers: Resilient rubber

2.04 PROTECTIVE COATINGS

A. Primer: Zinc chromate type.

2.05 FABRICATION

A. Fabricate frames as welded unit.

B. Fabricate frames with hardware reinforcement plates welded in place.

C. Reinforce frames wider than 48 inches with roll formed steel channels fitted tightly into frame head, flush with top.

D. Prepare frame for silencers. Provide three single rubber silencers for single doors in strike side, and two single silencers on frame head at double doors without mullions.

2.06 FINISH

A. Primer: Air dried.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install frames in accordance with ANSI/SDI-100 and DHI.

B. Coordinate with wallboard wall construction for anchor placement.

C. Coordinate installation of glass and glazing.

3.02 TOLERANCES

A. Maximum Diagonal Distortion: 1/16 inch measured with straight edges, crossed corner to corner.

3.03 ADJUSTING AND CLEANING

A. Adjust hardware for smooth and balanced door movement.

END OF SECTION

SECTION 08310

HORIZONTAL ACCESS DOOR SPECIFICATION

PART 1 - GENERAL

1.1 Description

A. Work included: Furnishing and installing factory fabricated vault access doors

1.2 References

A. ASTM A 36-93a: Standard Specification for Structural Steel

1.3 Submittals

A. Product Data: Provide manufacturer's product data for all materials in this specification.

B. Shop Drawings: Show profiles, accessories, location, and dimensions.

C. Samples: Manufacturer to provide upon request; sized to represent material adequately.

D. Contract Closeout: Vault access door manufacturer shall provide the manufacturer's Warranty prior to the contract closeout

1.4 Product Delivery, Storage and Handling

A. All materials shall be delivered in manufacturer's original packaging.

B. Store materials in a dry, protected, well-vented area. The contractor shall thoroughly inspect product upon receipt and report damaged material immediately to delivering carrier and note such damage on the carrier's freight bill of lading.

C. Remove protective wrapping immediately after installation if applicable.

1.5 Job Conditions

A. Verify that other trades with related work are complete before installing vault access door(s).

B. Mounting surfaces shall be straight and secure; substrates shall be of proper width.

C. Refer to the construction documents, shop drawings, and manufacturer's installation instructions.

D. Observe all appropriate OSHA safety guidelines for this work.

1.6 Warranty/Guarantee

A. Manufacturer's standard warranty: Materials shall be free of defects in material and workmanship for a period of (5) five years from the date of purchase. Should a part fail to function in normal use within this period, manufacturer shall furnish a new part at no charge. Electrical motors, special finishes, and other special equipment (if applicable) shall be warranted separately by the manufacturers of those products.

PART 2 - PRODUCTS

2.1 Acceptable Manufacturer's

A. The BILCO Company

B. The Williams Brothers Corporation of America

C. Acudor Products, Inc.

D. Or Approved Equal

2.2 Access Hatch

A. Furnish and install where indicated on plans vault access door.

1. Size 3'-0" x 3'-0".

2. Length denotes hinge side.

3. The vault access door shall be single leaf.

4. The vault access door shall be pre-assembled from the manufacturer.

B. Performance characteristics:

1. Cover: Shall be reinforced to support a minimum live load of 300 psf (1464 kg/m^2) with a maximum deflection of 1/150th of the span.

2. Operation of the cover shall be smooth and easy with controlled operation throughout the entire arc of opening and closing.

3. Operation of the cover shall not be affected by temperature.

4. Entire door, including all hardware components, shall be highly corrosion resistant. Please consult the manufacturer when doors are to be installed in unusually harsh environments or extremely corrosive conditions.

C. Cover: Shall be 1/4" (6.3 mm) aluminum diamond pattern.

D. Frame: Channel frame shall be 1/4" (6.3mm) extruded aluminum with bend down anchor tabs around the perimeter. A continuous EPDM gasket shall be mechanically attached to the aluminum frame to create a barrier around the entire perimeter of the cover and significantly reduce the amount of dirt and debris that may enter the channel frame.

E. Hinges: Shall be specifically designed for horizontal installation and shall be through bolted to the cover with tamperproof Type 316 stainless steel lock bolts and shall be through bolted to the frame with Type 316 stainless steel bolts and locknuts.

F. Drain Coupling: Provide a 1-1/2" (38mm) drain coupling located in the right front corner of the channel frame

G. Lifting mechanisms: Manufacturer shall provide the required number and size of compression spring operators enclosed in telescopic tubes to provide, smooth, easy, and controlled cover operation throughout the entire arc of opening and to act as a check in retarding downward motion of the cover when closing. The upper tube shall be the outer tube to prevent accumulation of moisture, grit, and debris inside the lower tube assembly. The lower tube shall interlock with a flanged support shoe fastened to a formed 1/4" gusset support plate.

H. A removable exterior turn/lift handle with a spring loaded ball detent shall be provided to open the cover and the latch release shall be protected by a flush, gasketed, removable screw plug.

I. Hardware:

1. Hinges: Heavy forged aluminum hinges, each having a minimum 1/4" (6.3 mm) diameter Type 316 stainless steel pin, shall be provided and shall pivot so the cover does not protrude into the channel frame.

2. Cover shall be equipped with an hold open arm which automatically locks the cover in the open position.

3. Cover shall be fitted with the required number and size of compression spring operators. Springs shall have an electrocoated acrylic finish. Spring tubes shall be constructed of a reinforced nylon 6/6 based engineered composite material

4. A Type 316 stainless steel snap lock with fixed handle shall be mounted on the underside of the cover.

5. Hardware: Shall be anticorrosion throughout.

J. Finishes: Factory finish shall be mill finish aluminum with bituminous coating applied to the exterior of the frame.

PART 3 - EXECUTION

3.1 Inspection

A. Verify that the vault access door installation will not disrupt other trades. Verify that the substrate is dry, clean, and free of foreign matter. Report and correct defects prior to any installation.

3. 2 Installation

A. Submit product design drawings for review and approval to the Engineer before fabrication.

B. The installer shall check as-built conditions and verify the manufacturer's vault access door details for accuracy to fit the application prior to fabrication. The installer shall comply with the vault access door manufacturer's installation instructions.

C. The installer shall furnish mechanical fasteners consistent with the vault access door manufacturer's instructions.

END OF SECTION

SECTION 08710

FINISH HARDWARE

PART 1 - GENERAL

1.1. DESCRIPTION OF WORK

A. The extent of finish hardware is shown on Drawings and in schedules.

B. Finish hardware is defined to include all items known commercially as builders hardware, as required for swing doors, except special types of unique and non-matching hardware specified in the same section as the door and door frame.

1. The required types of builders hardware may include (but are not necessarily limited to) the following:

a. Butts and hinges.

b. Pivots.

c. Spring hinges.

d. Lock cylinders and keys.

e. Lock and latch sets.

f. Bolts.

g. Panic exit devices.

h. Push/Pull units.

i. Closers.

j. Door control devices.

k. Door trim units.

l. Stripping and seals.

m. Thresholds.

1.2. QUALITY ASSURANCE

A. Acceptable Designs.

1. Part 2 indicates products which are of acceptable design for primary exposure (lock sets, etc.)

2. Do not substitute other products, except with written acceptance.

B. Acceptable Manufacturers: Part 2 indicates acceptable manufacturers for the primary items of builders hardware.

1. Manufacturers' products which comply with the indicated requirements are acceptable for other items.

2. Scheduled Manufacturers' Numbers: An asterisk (*) shown in the listing of acceptable manufacturers indicates which manufacturers' product numbers have been used in schedules and elsewhere to establish minimum requirements.

C. Manufacturer: To the greatest extent possible, obtain each kind of hardware (latch and lock sets, hinges, closers, etc.) from only one (1) manufacturer, even though several are indicated as acceptable manufacturers.

D. Departures From Scheduled Designations.

1. Except as otherwise indicated, the use of one (1) manufacturer's numeric designation system in schedules does not imply that another manufacturer's products will not be acceptable, unless they are not acceptable in design, or not equal in size, weight, finish, function, or other quality of significance.

2. Do not make substitutions after acceptance of submitted hardware schedule.

1.3. SUBMITTALS

A. Final Hardware Schedule.

1. Based on the builders hardware requirements indicated, organize the final hardware schedule into "hardware set", indicating complete designation of every item required for each door or openings.

2. Furnish initial draft of schedule at the earliest possible date, in order to facilitate the fabrication of other work which may be critical in the project construction schedule.

3. Furnish final draft of schedule after samples, manufacturer's data sheets, coordination with Shop Drawings for other work, delivery schedules and similar information has been completed and accepted.

a. Format hardware supplier's schedule in same format as hardware schedules in Part 2.

1.4. JOB CONDITIONS

A. Coordinate hardware with other work.

B. Furnish hardware items of proper design for use on doors and frames of the thicknesses, profile, swing, security, and similar requirements indicated as necessary for proper installation and function.

C. Templates.

1. Furnish hardware templates to each fabricator of doors, frames, and other work to be factory-prepared for the installation of hardware.

2. Upon request, check the Shop Drawings of such other work to confirm that adequate provisions are made for the proper installation of hardware.

1.5. PRODUCT DELIVERY, STORAGE, AND HANDLING.

A. Tag each item or package separately with identification related to the final hardware schedule.

B. Deliver individually packaged hardware items at proper time and to the proper locations (shop or site) for incorporation in the work.

C. Deliver keys to Resident Project Representatvie.

PART 2 - PRODUCTS

2.1. HARDWARE SCHEDULE

A. The requirements for material, type, grade, size, and function of builders hardware items is indicated by scheduled designation numbers.

1. Butts: Hagar, Lawrence Brothers, Stanley, or equal.

2. Locksets/Latchsets: Best, Sargent, Schlage, Or Equal

3. Closers: Norton, LCN, Sargent, Or Equal All closers to have "hold-open" feature.

4. Trim: Quality, Hager, Trimco, Ives or Equal.

5. Weatherstrip/Thresholds: Hager, Pemko, Trimco or Equal

B. Manufacturers Used in Hardware Schedule.

1. Butts: (H) Hager Hinge Company.

2. Locksets: (S) Schlage Lock Company (Rhodes Design - Lever), Grade 1.

3. Closers: (N) Norton

4. Trim: (Q) Quality.

5. Thresholds/Weatherstripping: (R) Reese.

a. Finish: US32D. Closers to be sprayed aluminum.

2.2. MATERIALS AND FABRICATION

A. General

1. Hand of door: The Drawings show the swing or hand of each door leaf (left, right, reverse bevel, etc.).

2. Furnish each item of hardware for proper installation and operation of the door swing as shown.

B. Hinges, Butts, and Pivots.

1. Templates and Screws: Except for hinges and pivots to be installed entirely (both leaves) into wooden doors and frames, provide only template-produced units, complying with CS9 by NBS.

2. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:

a. Steel Hinges: Steel pins.

b. Non-ferrous Hinges: Stainless steel pins.

c. Exterior Doors: Non-removable pins.

d. Out-swing Corridor Doors: Non-removable pins.

e. Interior Doors: Non-rising pins.

f. Tips: Flat button and matching plus, finished to match leaves.

C. Lock Cylinders and Keying.

1. Cylinders shall be keyed independently or alike in sets as directed by Engineer and shall be keyed in the plant of the Lock Company.

D. Hardware Groups.

1. The following items shall be supplied in the quantities indicated. (See Door Schedule).

GROUP 1 (Door NO. 1) UV Building, Exterior Door (Pair)

6 ea.	Hinges	BB1191 4.5 x 4.5	US32D	HHC
1 ea.	Lock	D70PD Rho 2 ¾ BS ASA	US26D	SLC
2 ea.	Flush Bolt	1358 12"	US26D	NTQH
2 ea.	Closer	P8501-H SRI	AL	NDC
2 ea.	Sweep	323C 36"	AL	RE
1 ea.	Weatherstrip	807A 1/72, 2/84	AL	RE

GROUP 2 (Door NO. 2) attached UV Building, Interior Door

3 ea.	Hinges	BB1191 4.5 x 4.5	US32D	HHC
1 ea.	Lock	D70PD Rho 2-3/4 BS ASA	US26D	SLC
1 ea.	Closer	P8501-H SRI	AL	NDC
3 ea.	Silencer	307D	Grey	HA

PART 3 - EXECUTION

3.1. INSTALLATION

A. Mount hardware units at heights recommended in "Recommended Locations for Builders' Hardware" by NBHA except as otherwise specifically indicated or required to comply with governing regulations, or except as may be otherwise directed by the Engineer.

B. Wherever cutting and fitting is required to install hardware onto or into surfaces which are later to be painted or finished in another way, install each item completely and then remove and store in a secure place during the finish application.

1. After completion of the finishes, reinstall each item.

2. Do not install surface-mounted items until finishes have been completed on the substrate.

C. Set units level, plumb, and true to line and location.

1. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

D. Drill and countersink units which are not factory-prepared for anchorage fasteners.

1. Space fasteners and anchors in accordance with industry standards.

E. Cut and fit threshold and floor covers to profile of door frames, with mitered corners and hair-line joints.

1. Join units with concealed welds or concealed mechanical joints.

2. Cut smooth openings for spindles, bolts, and similar items.

F. Screw thresholds to substrate with No. 10 or larger screws, of the proper type for permanent anchorage and of bronze or stainless steel which will not corrode in contact with the threshold metal.

G. At exterior doors, and elsewhere as indicated, set thresholds in a bed of either butyl rubber sealant or polyisobutylene mastic sealant to completely fill concealed voids and exclude moisture from every source.

1. Do not plug drainage holes or block weeps.

2. Remove excess sealant.

3.2. ADJUST AND CLEAN

A. Adjust and check each item of hardware and each door, to ensure proper operation or function of every unit.

1. Lubricate moving parts with type lubrication recommended by manufacturer.

2. Replace units which cannot be adjusted and lubricated to operate freely and smoothly as intended for the application made.

B. Tools for Maintenance: Furnish a complete set of specialized tools as needed for Owner's continued adjustment, maintenance, and removal and replacement of builders' hardware.

END OF SECTION