



Red Rocks Community College

Police Relocation

Project Manual

Final Review 21 September 2020



Table of Contents

024119	Selective Demolition
061000	Rough Carpentry
064113	Plastic Laminate Faced Architectural Cabinets
079200	Joint Sealants
081113	Hollow Metal Doors and Frames
081416	Flush Wood Doors
083113	Access Doors and Frames
087100	Door Hardware
092216	Non-Structural Metal Framing
092900	Gypsum Board
095113	Acoustical Panel Ceilings
096513	Resilient Base and Accessories
099123	Interior Painting
123661.16	Solid Surfacing Countertops
130700	Bullet Resistant Fiberglass
130700	Bullet Resistant Baffle Transaction Window

Mechanical, Electrical, Plumbing and I.T. is to be design-build.

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Items indicated to be removed and salvaged remain Owner's property. Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner[**ready for reuse**]. Include fasteners or brackets needed for reattachment elsewhere.
- B. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- C. It is not expected that hazardous materials will be encountered in the Work. If hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with EPA regulations and with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 DEMOLITION

- A. Maintain services/systems indicated to remain and protect them against damage during selective demolition operations. Before proceeding with demolition, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of the building.
- B. Locate, identify, shut off, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
- C. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
- D. Protect walls, ceilings, floors, and other existing finish work that are to remain. Erect and maintain dustproof partitions. Cover and protect furniture, furnishings, and equipment that have not been removed.

- E. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction.
- F. Remove demolition waste materials from Project site and legally dispose of them in an EPA-approved landfill. Do not burn demolished materials.
- G. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: None required

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: Provide dressed lumber, S4S, marked with grade stamp of inspection agency.

2.2 TREATED MATERIALS

- A. Preservative-Treated Materials: AWWA U1; Use Category UC2 for interior construction not in contact with the ground.
 - 1. Use treatment containing no arsenic or chromium.
 - 2. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent.
 - 3. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- B. Provide preservative-treated materials for all rough carpentry unless otherwise indicated.
 - 1. Wood sills, blocking, furring, and similar concealed members in contact with masonry or concrete.
 - 2. Wood floor plates that are installed over concrete slabs-on-grade.
- C. Fire-Retardant-Treated Materials: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet (3.2 m) beyond the centerline of the burners at any time during the test.
 - 1. Use Interior Type A unless otherwise indicated.
 - 2. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent.
 - 3. Identify with appropriate classification marking of a testing and inspecting agency acceptable to authorities having jurisdiction.
- D. Provide fire-retardant treated materials for all rough carpentry.

2.3 MISCELLANEOUS LUMBER

- A. Miscellaneous Dimension Lumber: Standard, Stud, or No. 3 grade with 15 percent maximum moisture content of any species. Provide for nailers, blocking, and similar members.

2.4 PLYWOOD BACKING PANELS

- A. Equipment Backing Panels: Plywood, Exposure 1, C-D Plugged, fire-retardant treated, not less than 1/2-inch nominal thickness.

2.5 MISCELLANEOUS PRODUCTS

- A. Fasteners: Size and type indicated.
 - 1. Power-Driven Fasteners: CABO NER-272.
 - 2. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- B. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- C. Do not splice structural members between supports unless otherwise indicated.
- D. Securely attach rough carpentry to substrates, complying with the following:
 - 1. CABO NER-272 for power-driven fasteners.
 - 2. Published requirements of metal framing anchor manufacturer.

END OF SECTION 061000

SECTION 064116 - PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: Shop Drawings, component cut sheets.

PART 2 - PRODUCTS

2.1 ARCHITECTURAL CABINETS

- A. Quality Standard: AWI, AWMAC, and WI's "Architectural Woodwork Standards."
- B. Plastic-Laminate Cabinets: Custom grade.
 - 1. Type of Construction: Frameless.
 - 2. Cabinet Door and Drawer Style: Flush overlay.
 - 3. Laminate Cladding: Horizontal surfaces other than tops, Grade HGS; postformed surfaces, Grade HGP; vertical surfaces, Grade HGS; edges, Grade HGS; semiexposed surfaces, LPDL.
 - 4. Drawer Sides and Backs: Thermoset decorative panels.
 - 5. Drawer Bottoms: Thermoset decorative panels.

2.2 MATERIALS

- A. Wood Moisture Content: 4 to 9 percent.
- B. Medium-Density Fiberboard: ANSI A208.2, Grade 130, made with binder containing no urea formaldehyde.
- C. Particleboard: ANSI A208.1, Grade M-2, made with binder containing no urea formaldehyde.
- D. High-Pressure Decorative Laminate: NEMA LD 3.

2.3 CABINET HARDWARE AND ACCESSORY MATERIALS

- A. Butt Hinges: 2-3/4-inch (70-mm), five-knuckle steel hinges made from 0.095-inch- (2.4-mm-) thick metal, and as follows:
 - 1. Semiconcealed Hinges for Flush Doors: BHMA A156.9, B01361.
 - 2. Semiconcealed Hinges for Overlay Doors: BHMA A156.9, B01521.
- B. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 135 degrees of opening.

- C. Wire Pulls: Back mounted, solid metal, 4 inches (100 mm) long, 5/16 inch (8 mm) in diameter.
- D. Adjustable Shelf Standards and Supports: BHMA A156.9, B04071; with shelf rests, B04081.
- E. Shelf Rests: BHMA A156.9, B04013; metal.
- F. Drawer Slides: BHMA A156.9, B05091.
 - 1. Box Drawer Slides: Grade 1.
- G. Drawer Locks: BHMA A156.11, E07041.
- H. Exposed Hardware Finishes: Comply with BHMA A156.18 for BHMA code number indicated.
 - 1. Finish: Satin Stainless Steel: BHMA 630.
- I. Furring, Blocking, Shims, and Hanging Strips: Fire-retardant-treated lumber, kiln dried to 15 percent moisture content.

2.4 FABRICATION

- A. Complete fabrication to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Before installation, condition cabinets to average prevailing humidity conditions in installation areas.
- B. Install cabinets to comply with referenced quality standard for grade specified.
- C. Install cabinets level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb (including tops) to a tolerance of 1/8 inch in 96 inches (3 mm in 2400 mm).
- D. Scribe and cut cabinets to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
- E. Anchor cabinets to anchors or blocking built into or directly attached to substrates. Fasten with countersunk concealed fasteners and blind nailing.
- F. Cabinets: Install so doors and drawers are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation.
 - 1. Fasten wall cabinets through back, near top and bottom, at ends and not more than 16 inches (400 mm) o.c. through metal backing or metal framing behind wall finish].

END OF SECTION 064116

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data and color Samples.

PART 2 - PRODUCTS

2.1 JOINT SEALANTS

- A. Compatibility: Provide joint sealants, joint fillers, and other related materials that are compatible with one another and with joint substrates under service and application conditions.
 - 1. Single-component, neutral-curing silicone sealant, ASTM C 920, Type S; Grade NS; Class 25; for Use NT.
 - a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1) Dow Corning Corporation.
 - 2) GE Construction Sealants; Momentive Performance Materials Inc.
 - 3) Polymeric Systems, Inc.
 - 2. Single-component, non-sag urethane sealant, ASTM C 920, Type S; Grade NS; Class 25; and for Use NT.
 - a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1) BASF Corporation-Construction Systems.
 - 2) Pecora Corporation.
 - 3) Sherwin-Williams Company (The).
 - 4) Sika Corporation.
 - 5) Tremco Incorporated.
- B. Sealant for Use in Interior Joints in Ceramic Tile and Other Hard Surfaces in Kitchens and Toilet Rooms and around Plumbing Fixtures:
 - 1. Single-component, mildew-resistant silicone sealant, ASTM C 920, Type S; Grade NS; Class 25; for Use NT; formulated with fungicide.

- a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1) Dow Corning Corporation.
 - 2) GE Construction Sealants; Momentive Performance Materials Inc.
 - 3) Tremco Incorporated.

C. Sealant for Interior Use at Perimeters of Door and Window Frames:

- 1. Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.
 - a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1) BASF Corporation-Construction Systems.
 - 2) Pecora Corporation.
 - 3) Sherwin-Williams Company (The).
 - 4) Tremco Incorporated.

D. Acoustical Sealant:

- 1. Non-sag, paintable, non-staining latex sealant complying with ASTM C 834 that effectively reduces airborne sound transmission as demonstrated by testing according to ASTM E 90.
 - a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1) GE Construction Sealants; Momentive Performance Materials Inc.
 - 2) Pecora Corporation.
 - 3) Tremco Incorporated.
 - 4) United States Gypsum Company.

2.2 MISCELLANEOUS MATERIALS

- A. Provide sealant backings of materials that are non-staining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C 1330, of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

- D. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with ASTM C 1193.
- B. Install sealant backings to support sealants during application and to produce cross-sectional shapes and depths of installed sealants that allow optimum sealant movement capability.
- C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- D. Acoustical Sealant Installation: At sound-rated assemblies and elsewhere as indicated, seal perimeters, control joints, openings, and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions. Comply with ASTM C 919.

END OF SECTION 079200

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data and Shop Drawings.

PART 2 - PRODUCTS

2.1 HOLLOW METAL FRAMES

- A. Fire-Rated Frames: Labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, based on testing at positive pressure according to NFPA 252 or UL 10C.
 - 1. Where indicated, provide doors that that have a temperature rise rating of 450 deg F (250 deg C).
- B. Smoke- and Draft-Control Door Assemblies: Listed and labeled for smoke and draft control, based on testing according to UL 1784 and installed in compliance with NFPA 105.
- C. Frames: ANSI A250.8; conceal fastenings unless otherwise indicated.
 - 1. Steel Sheet for Interior Frames: 16 ga. minimum thickness.
 - 2. Interior Frame Construction: Knocked down.
 - 3. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement plates from same material as frames.
 - 4. Frame Anchors: Not less than 0.042 inch (1.0 mm) thick.
- D. Door Silencers: Three on strike jambs of single-door frames and two on heads of double-door frames.
- E. Prepare doors and frames to receive mortised and concealed hardware according to SDI A250.6 and BHMA A156.115.
- F. Reinforce doors and frames to receive surface-applied hardware.
- G. Prime Finish: Manufacturer's standard, factory-applied coat of lead- and chromate-free primer complying with SDI A250.10 acceptance criteria.

2.2 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, suitable for exposed applications.
- B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, free of scale, pitting, or surface defects.

- C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, G60 (Z180) or A60 (ZF180).
- D. Frame Anchors: ASTM A 879/A 879M, 4Z (12G) coating designation; mill phosphatized.
 - 1. For anchors built into exterior walls, sheet steel complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.
- E. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install hollow metal frames to comply with SDI A250.11.
 - 1. Fire-Rated Frames: Install according to NFPA 80.
- B. Install doors to provide clearances between doors and frames as indicated in SDI A250.11.
- C. 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.

END OF SECTION 081113

SECTION 081416 - FLUSH WOOD DOORS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Solid-core doors with wood-veneer faces.
2. Factory finishing flush wood doors.

B. Related Requirements:

1. Tempered glass view panels in flush wood doors.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of door. Include details of core and edge construction and trim for openings. Include factory-finishing specifications.

- B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and the following:

1. Dimensions and locations of blocking.
2. Dimensions and locations of mortises and holes for hardware.
3. Dimensions and locations of cutouts.
4. Undercuts.
5. Requirements for veneer matching.
6. Doors to be factory finished and finish requirements.
7. Fire-protection ratings for fire-rated doors.

- C. Samples for Initial Selection: For factory-finished doors.

1.4 INFORMATIONAL SUBMITTALS

- A. Sample Warranty: For special warranty.

1.5 QUALITY ASSURANCE

- A. Vendor Qualifications: A vendor that is certified for chain of custody by an FSC-accredited certification body.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Comply with requirements of referenced standard and manufacturer's written instructions.
- B. Package doors individually in plastic bags or cardboard cartons.
- C. Mark each door on bottom rail with opening number used on Shop Drawings.

1.7 FIELD CONDITIONS

- A. Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during remainder of construction period.
- B. Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and HVAC system is operating and maintaining temperature between 60 and 90 deg F (16 and 32 deg C) and relative humidity between 17 and 50 percent during remainder of construction period.

1.8 WARRANTY

- A. Special Warranty: 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. Warping (bow, cup, or twist) more than 1/4 inch (6.4 mm) in a 42-by-84-inch (1067-by-2134-mm) section.
 - b. Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch (0.25 mm in a 76.2-mm) span.
 - 2. Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors.
 - 3. Warranty Period for Solid-Core Interior Doors: Life of installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Graham Wood Doors; ASSA ABLOY Group company.
 - 2. Marshfield Door Systems, Inc; Wood Veneered Doors.
 - 3. VT Industries Inc.
- B. Source Limitations: Obtain flush wood doors from single manufacturer.

2.2 FLUSH WOOD DOORS, GENERAL

- A. Quality Standard: In addition to requirements specified, comply with WDMA I.S.1-A, "Architectural Wood Flush Doors."
- B. WDMA I.S.1-A Performance Grade: Extra Heavy Duty.
- C. Fire-Rated Wood Doors: Doors complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to UL 10C.
 - 1. Oversize Fire-Rated Door Assemblies: For units exceeding sizes of tested assemblies, provide certification by a qualified testing agency that doors comply with standard construction requirements for tested and labeled fire-rated door assemblies except for size.
 - 2. Temperature-Rise Limit: At vertical exit enclosures and exit passageways, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire-test exposure.
 - 3. Cores: Provide core specified or mineral core as needed to provide fire-protection rating indicated.
 - 4. Edge Construction: Provide edge construction with intumescent seals concealed by outer stile. Comply with specified requirements for exposed edges.
 - 5. Pairs: Provide fire-retardant stiles that are listed and labeled for applications indicated without formed-steel edges and astragals. Provide stiles with concealed intumescent seals. Comply with specified requirements for exposed edges.
- D. Smoke- and Draft-Control Door Assemblies: Listed and labeled for smoke and draft control, based on testing according to UL 1784.
- E. Particleboard-Core Doors:
 - 1. Particleboard: ANSI A208.1, Grade LD-2.
 - 2. Blocking: Provide wood blocking in particleboard-core doors as follows:
 - a. 5-inch (125-mm) top-rail blocking, in doors indicated to have closers.
 - b. 5-inch (125-mm) mid-rail blocking, in doors indicated to have exit devices.
- F. Glazing to be tempered glass in all glazed doors.

2.3 VENEER-FACED DOORS FOR TRANSPARENT FINISH

- A. Interior Solid-Core Doors:
 - 1. Grade: Premium, with Grade A faces.
 - 2. Species: Red oak.
 - 3. Cut: Plain sliced (flat sliced).
 - 4. Match between Veneer Leaves: Book match.
 - 5. Assembly of Veneer Leaves on Door Faces: Running match.

6. Pair and Set Match: Provide for doors hung in same opening or separated only by mullions.
7. Exposed Vertical Edges: Same species as faces - edge Type A.
8. Core: Particleboard.
9. Construction: Five plies. Stiles and rails are bonded to core, then entire unit is abrasive planed before veneering.
10. WDMA I.S.1-A Performance Grade: Extra Heavy Duty.

2.4 LIGHT FRAMES AND LOUVERS

- A. Metal Frames for Light Openings in Fire-Rated Doors: Manufacturer's standard frame formed of 0.048-inch-(1.2-mm-) thick, cold-rolled steel sheet; with baked-enamel- or powder-coated finish; and approved for use in doors of fire-protection rating indicated.

2.5 FABRICATION

- A. Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.
 1. Comply with NFPA 80 requirements for fire-rated doors.
- B. 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, BHMA-156.115-W, and hardware templates.
 1. Coordinate with hardware mortises in metal frames to verify dimensions and alignment before factory machining.
- C. Openings: Factory cut and trim openings through doors.

2.6 FACTORY FINISHING

- A. General: Comply with referenced quality standard for factory finishing. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.
 1. Finish faces, all four edges, edges of cutouts, and mortises. Stains and fillers may be omitted on top and bottom edges, edges of cutouts, and mortises.
- B. Factory finish doors where indicated in schedules or on Drawings as factory finished.
- C. Transparent Finish:
 1. Grade: Premium.
 2. Finish: WDMA TR-6 catalyzed polyurethane. Finish doors using three (3) coats of water-clear 100% solids, modified urethane, cured immediately with ultra-violet light.
 3. Effect: Semi-filled finish, produced by applying an additional finish coat to partially fill the wood pores.
 4. Sheen: Satin.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine doors and installed door frames, with Installer present, before hanging doors.
 - 1. Verify that installed 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 Section 087100 "Door Hardware."
- B. Installation Instructions: Install doors to comply with manufacturer's written instructions and referenced quality standard, and as indicated.
 - 1. Install fire-rated doors according to NFPA 80.
 - 2. Install smoke- and draft-control doors according to NFPA 105.

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 that 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 SECTION REQUIREMENTS

- A. Submittals: Product Data.

PART 2 - PRODUCTS

2.1 ACCESS DOORS AND FRAMES FOR WALLS AND CEILINGS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Access Panel Solutions.
 - 2. Broan.; a Broan-NuTone LLC brand; a Nortek company.
 - 3. JL Industries, Inc.; a division of the Activar Construction Products Group.
 - 4. Milcor; Commercial Products Group of Hart & Cooley, Inc.
- B. Flush Access Doors with Exposed Flanges: Prime-painted steel units.
- C. Locks: Flush to finished surface, key operated.
- D. Size: Sized to provide access to controls, valves, equipment.

2.2 MATERIALS

- A. Steel Sheets: ASTM A 1008/A 1008M or ASTM A 591/A 591M.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install access doors and panels accurately in position. Adjust hardware and door and panels for proper operation.

END OF SECTION 083113

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes

1. Finish hardware for doors as scheduled and specified herein, including:
 - a. Mechanical hardware for swinging doors.
2. Electro-mechanical devices and access control components as specified herein.
3. Any parts, components, materials, and accessories, whether specified or not, that are required for a complete and operational access control system. Provide access control system with features, capabilities, and operation at each door as specified herein.

B. Related Sections

1. Provide hardware complying with division 01 section "references" as well as the following publications to the extent referenced within this specification.
 - a. Division 06 Section: "Finish Carpentry"
 - b. Division 08 Section: "Hollow Metal Doors and Frames"
 - c. Division 08 Section: "Wood Doors"
 - d. Division 08 Section: "Aluminum-Framed Entrances and Storefronts"
 - e. Division 28 Section: "Access Control"

1.02 REFERENCED STANDARDS

A. Provide hardware in accordance with the following standards in addition to those specified in Division 01 Section "References."

1. American National Standards Institute (ANSI), A117.1: Accessible and Usable Buildings and Facilities, edition as adopted by local Authority Having Jurisdiction (AHJ).
2. Builders Hardware Manufacturer's Association (BHMA)
 - a. ANSI/BHMA A156.18: Materials and Finishes, 2006 edition
3. Door and Hardware Institute (DHI)
 - a. Recommended Locations for Architectural Hardware for Flush Wood Doors, 1993 edition
 - b. Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames, 2004 edition
 - c. Installation Guide for Doors and Hardware, 1994 edition
 - d. Keying Systems and Nomenclature, 2003 edition
 - e. Sequence and Format for the Hardware Schedule, 2001 edition
4. National Fire Protection Association (NFPA)
 - a. NFPA 80: Standard for Fire Doors and Other Opening Protectives, edition as adopted by local AHJ.
 - b. NFPA 105: Standard for the Installation of Smoke Door Assemblies and Other Opening Protectives, edition as adopted by local AHJ.
 - c. NFPA 252: Standard Methods of Fire Tests of Door Assemblies, edition as adopted by local AHJ.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordination

1. Coordinate layout, templating, and installation of work with other sections as required. Provide templates, product information, schedules, and diagrams required to fully coordinate the work.
 - a. Coordinate blocking for wall stops and other surface-applied hardware with Division 06 Section "Rough Carpentry."
 - b. Coordinate hardware locations and templating with the appropriate Division 08 door and frame sections.
 - c. Coordinate conduit, raceways, wiring, and connection as required for electrical and pneumatic hardware items with the appropriate electrical, access control, intrusion detection, and fire alarm sections.
 - d. Fire Rated Openings: Coordinate with door and frame manufacturer to ensure that total opening complies with requirements for fire doors.

B. Pre-installation Meetings

1. Upon approval of hardware schedule and wiring diagram submittals and before hardware installation, conduct a pre-installation meeting complying with Division 01 Section "Project Management and Coordination."
2. Meeting attendees shall include the owner's representative, architect, contractor, hardware supplier, hardware installer, other affected trades, and manufacturer representative(s) for locks, exit hardware, operators, and closers.
3. Discuss the installation of continuous hinges, locksets, door closers, exit devices, electromechanical finish hardware, and finish hardware. Coordinate installation between trades.
 - a. Discuss special installation requirements.
 - b. Inspect and discuss electrical rough-in and other preparatory work performed by other trades.
 - c. Review sequence of operation for each electrified door opening.
 - d. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - e. Review required testing, inspecting, and certifying procedures
4. At the meeting, distribute installation manuals, templates, wiring diagrams, and approved hardware schedule submittals to each attendee.
5. Notify participants at least five (5) working days before meeting.

1.04 SUBMITTALS

A. General

1. Provide submittals in accordance with Division 01 Section "Submittal Procedures."
2. Advise architect within the submittal package of incompatibility or issues which may detrimentally affect the work of this section.
3. Submittals shall be prepared by or under the supervision of Architectural Hardware Consultant. Stamp submittals with the DHI certification seal and signature of the supervising Architectural Hardware Consultant.

- a. Submittals submitted without the above certification seal shall be marked incomplete and returned.
4. Submittal sequence: Submit product data, hardware schedule, samples, and qualification data concurrently. Coordinate submission of finish hardware schedule with scheduling requirements of other work to facilitate the fabrication of other work that is critical in project construction schedule. Upon approval of first submittal package, submit wiring diagrams and key schedule.

B. Product Data

1. Submit manufacturer's technical product data for each item of finish hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
2. Highlight relevant product information such as model, function, trim, finish, options, electrical requirements, and accessories

C. Hardware Schedule

1. Submit hardware schedule detailing fabrication and assembly of finish hardware, as well as procedures and diagrams. Coordinate the final finish hardware sets with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of finish hardware.
2. Check specified hardware for suitability and adaptability to details and surrounding conditions. Indicate unsuitable or incompatible items and proposed substitutions.
 - a. Format schedule complying with the vertical format in DHI's "Sequence and Format for the Hardware Schedule" publication. Double space entries, and number and date each page. Use same scheduling sequence and door numbers as in the Contract Documents
 - b. Include the following information:
 - 1) Numerical door index indicating door number, heading number, and architect's specified hardware set number.
 - 2) Identification number, location, hand, fire rating and material of each door and frame.
 - 3) Type, style, function, size, quantity, and finish of each finish hardware item. Include description and function of each lockset and exit device.
 - 4) Complete designations of every item required for each door or opening including name and manufacturer.
 - 5) Fastenings and other pertinent information.
 - a) Where universal-type closers are scheduled, indicate the application method to be used for installation at each door (e.g. regular arm, parallel arm, or top jamb).
 - 6) Location of each finish hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 - 7) Explanation of abbreviations, symbols, and codes contained in schedule.
 - 8) Mounting locations for finish hardware.
 - 9) Door and frame sizes and materials.
 - 10) Description of each electrified finish hardware function, including location, sequence of operation, and interface with other building control systems.
 - a) Sequence of Operation: Include description of component functions that occur in the following situations: authorized person wants to enter;

authorized person wants to exit; unauthorized person wants to enter;
unauthorized person wants to exit; loss of power; fire alarm sounds.

- 11) List of related door devices specified in other Sections for each door and frame.
- c. Submit, with the hardware schedule, a list of lead times for hardware items.

D. Shop Drawings

1. Submit details of electrified finish hardware, indicating the following:
 - a. System schematic.
 - b. Point-to-point wiring diagram.
 - c. Riser diagram.
 - d. Elevation of each door.
2. Detail interface between electrified finish hardware and fire alarm, access control, security building control system.
3. Operation Narrative: Describe the operation of doors controlled by electrified finish hardware.
4. Include specific cable requirements; indicate twisted, shielded, and plenum rated cable requirements where required by manufacture or relevant building codes and standards.

E. Manufacturer's Templates

1. After final approval of the hardware schedule, provide templates for doors, frames, and other work specified to be factory prepared for the installation of finish hardware. Check shop drawings of other work to ensure that adequate provisions are made for locating and installing finish hardware to comply with indicated requirements. Provide additional templates, template lists, hardware schedules, and product information to other trades upon request.

F. Qualification Certificates

1. For installer, supplier, and Architectural Hardware Consultant provide letters of certification that indicate compliance with the requirements specified herein. Submit certifications concurrently with hardware schedule submittal. Submittals will not be considered without certifications.
 - a. Installer: Provide documentation showing installer's past experience.
 - b. Supplier: Provide letters of certification from the hardware manufacturer stating that the supplier is a factory direct authorized distributor. Provide documentation showing suppliers past experience.
 - c. Architectural Hardware Consultant: Provide certificate showing consultant holds the required certificate(s) from DHI.

1.05 CLOSE OUT SUBMITTALS

A. General

1. Upon substantial completion, provide two (2) copies of the closeout submittals complying with Division 01 Section "Close Out Submittals."

B. Operation And Maintenance Data

1. Provide operation and maintenance manuals that include the following for each hardware item:

- a. Project information including contact information for architect, contractor, supplier, installer, Architectural Hardware Consultant, and local representative of each hardware manufacturer
- b. Complete information on care, maintenance, adjustment, repair and replacement of parts, and preservation of finishes
- c. Product data, templates, installation information, service manual, and parts lists.
- d. Copy of final hardware and keying schedules and wiring diagrams for each opening connected to either 120V or low voltage power. Edit schedules and diagrams to reflect "As installed" conditions.

C. Warranty Documentation

- 1. Provide information required for warranty service or replacement of each hardware item including:
 - a. Warranty certificates from manufacturer stating warranty period and conditions, complying with warranty requirements specified herein.
 - b. Copy of manufacturer's order confirmation or original packing slip with manufacturer's original order #, date of manufacture, and ship date.

1.06 QUALITY ASSURANCE

A. Qualifications

- 1. Supplier Qualifications: Supplier shall have documented experience in the supply of finish hardware for five (5) years or for three (3) prior projects similar in scope, size, and quality. Supplier shall have an Architectural Hardware Consultant, complying with the requirements specified herein, available to properly handle, detail, and service hardware in a satisfactory manner. Architectural Hardware Consultant shall be available during the course of the work to consult with contractor, architect, and owner about finish hardware and keying.
 - a. Supplier shall be a certified direct distributor and be a full sales and service organization for the manufacturer(s) listed.
 - b. Supplier shall have warehousing facilities within 150 miles of the project site.
- 2. Installer Qualifications: Installer shall have documented experience in the installation of finish hardware for (5) years or for three (3) prior projects similar in scope, size, and quality.
- 3. Manufacturer Sourcing Qualifications: Obtain each type of finish hardware (hinges, latch & locksets, exit devices, closers, etc.) from a single manufacturer, although several may be indicated as offering products complying with requirements.
 - a. Provide electrified hardware from same manufacturer as mechanical finish hardware unless otherwise indicated. Manufacturer's that perform electrical modifications that are listed by a testing and inspecting agency acceptable to authorities having jurisdiction (AHJ) are acceptable.
- 4. Architectural Hardware Consultant Qualifications: A person who is certified by DHI as an Architectural Hardware Consultant (AHC) or Architectural Openings Consultant (AOC) and is enrolled in the DHI Continuing Education Program. Consultant shall be experienced in providing consulting services for finish hardware installations that are comparable in material, design, and extent indicated.

B. Fire Door Assemblies

1. Provide finish hardware for fire rated openings that complies with NFPA 80 and the requirements of the AHJ. Provide only items of finish hardware that are listed by a testing and inspecting agency acceptable to the AHJ for use on types and sizes of doors indicated, based on testing at positive pressure and according to NFPA 252 or UL 10C and in compliance with fire-rated door and frame labels.
 - a. Where exit devices are required on fire rated doors (with supplementary marking on door label indicating “Fire Door to be Equipped with “Fire Exit Hardware”), provide label on exit device indicating “Fire Exit Hardware.”
 - b. Provide proper latching hardware, non-flaming door closers, approved bearing type hinges, and required gasketing if not furnished with door or frame.

C. Smoke And Draft Control Door Assemblies

1. Where smoke and draft control door assemblies are required, provide finish hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Marking And Packaging

1. Package hardware items manufacturer’s standard packaging, clearly marked with hardware set number correlating to finish hardware schedule and architect’s door number.

B. Delivery And Acceptance

1. Coordinate with construction schedule and deliver packaged hardware items to place of installation (e.g. project site, fabrication shop). Upon delivery, inspect and inventory finish hardware. Immediately notify supplier of defective or missing items.
2. Deliver keys and cores to owner by registered mail or overnight package service. Ship keys separately from cores.

C. Storage And Handling

1. Provide secure, dry storage area complying with Division 01 Section “Product Storage and Handling Requirements” for finish hardware delivered to the project site, but not yet installed. Store items on shelves or pallets to prevent damage.
2. Control handling and installation of hardware items that are not immediately replaceable so that completion of work will not be delayed by hardware losses both before and after installation.

D. Packaging Waste Management

1. Upon delivery and installation of finish hardware, discard packaging and other waste items in accord with Division 01 Section “Cleaning and Waste Management.”

1.08 WARRANTY

A. General Warranty

1. Warrant finish hardware against defects in material and workmanship as set forth in Division 01 Section "Warranties."
2. Special warranties specified herein shall not deprive owner of other rights specified in the contract documents, but shall be in addition to, and run concurrent with, other warranty requirements.

B. Special Warranty

1. Provide a written warranty, executed by the product manufacturer agreeing to repair or replace components of finish hardware that fail in materials or workmanship within the specified warranty period.
 - a. Failures include, but are not limited to, the following:
 - 1) Structural failures including excessive deflection, cracking, or breakage.
 - 2) Faulty operation of operators and finish hardware.
 - 3) Deterioration of metals, metal finishes, and other materials beyond normal wear.
 - b. Warranty Period: Two (2) years from date of Substantial Completion, except for:
 - 1) Cylindrical Locks: Lifetime
 - 2) Exit Devices: Three (3) years
 - 3) Door Closers: Thirty (30) years
 - 4) Electrified Hardware Items: One (1) year
 - 5) Auto Operators: Two (2) years

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Substitutions submitted, no later than 10 business days prior to bid and complying with Division 01 Section "Substitutions" requirements will be reviewed for conformance to basis of design. Substitutions found in compliance will be approved by bid addendum.

2.02 MATERIALS

- A. Base Metals: Produce hardware units of basic metal and forming method indicated using manufacturer's standard metal alloy, composition, temper, and hardness, but in no case of lesser (commercially recognized) quality than specified for applicable hardware units for finish designations indicated.
- B. Provide hardware manufactured to conform to published templates generally prepared for machine screw installation. Do not provide hardware that has been prepared for self-tapping sheet metal screws, except as specifically indicated.

2.03 FASTENERS

- A. Furnish screws for installation with each hardware item. Provide Phillips flat-head screws except as otherwise indicated. Furnish stainless steel (exposed under any condition) screws to match hardware finish or, if exposed in surfaces of other work, to match finish of this other work as closely as possible including "prepared for paint" surfaces to receive painted finish.
- B. Provide concealed fasteners for hardware units that are exposed when door is closed except to the extent no standard units of type specified are available with concealed fasteners. Use through bolts only as indicated in this section unless their use is the only means of reinforcing the work

adequately to fasten the hardware securely. Where thru-bolts are used as a means of reinforcing the work, provide sleeves for each thru-bolt or use sex screw fasteners.

2.04 HINGES

A. Manufacturers that may be incorporated into the Work:

1. Ives
2. Stanley
3. Bommer

B. Requirements:

1. Screws: Provide Phillips flat-head screws complying with the following requirements:
 - a. For metal doors and frames install machine screws into drilled and tapped holes.
 - b. For wood doors and frames install wood screws.
 - c. For fire-rated wood doors install #12 x 1-1/4-inch, threaded-to-the-head steel wood screws.
2. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
 - a. Out-Swing Doors with Locks: Non-Removable Pins (NRP).
 - b. Interior Doors: Non-rising pins.
 - c. Tips: Flat button and matching plug, finished to match leaves.
3. All hinges to be ball bearing.
4. Number of Hinges: At non-rated openings, provide two hinges for each door leaf 60 inches or less in height and one additional hinge for each 30 inches of additional height or portion thereof. At fire rated openings, provide no less than three ball bearing hinges for each door leaf 86 inches or less in height and one additional hinge for each 30 inches of additional height or portion thereof.
5. Hinge Width: Where applied trim or closer templating require hinge widths wider than 4-1/2 inches, provide minimum width required. Otherwise, provide hinges 4-1/2 inches in width.
6. Hinge Height: Provide hinges 5 inches in height where door leaf exceeds 3'0 in width or where door is a high-use door utilizing panic or push/pull hardware. Otherwise, provide hinges 4-1/2 inches in height.
7. Hinge Weight: Provide heavy weight hinges where door leaf exceeds 3'0 in width, exterior doors, and at doors scheduled with swing clear hinges, panic hardware, push/pull hardware, edge guards, or armor plates. Otherwise provide standard weight hinges.

2.05 ELECTRIC STRIKES

A. Products that may be incorporated into the Work:

1. Von Duprin: 6200 Series, Campus Standard

B. Requirements:

1. Provide electric strikes that are continuous duty rated without the use of external rectifiers.
2. Provide electric strikes with function (fail safe, fail secure) and power requirements as scheduled.

2.06 LOCKS AND LATCHES

A. Cylindrical Locks

1. Products that may be incorporated into the Work:
 - a. Marks USA: 175 Series, Campus Standard
2. Requirements:
 - a. Provide cylindrical locks conforming to ANSI/BHMA A156.2 Series 4000, Grade 2, and UL Listed for 3 hour fire doors.
 - b. Provide locks with standard 2-3/4 inches (70 mm) backset, unless noted otherwise, with 1/2 inch latch throw. Provide proper latch throw for UL listing at pairs.
 - c. Provide locksets with separate anti-rotation thru-bolts, and no exposed screws.
 - d. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.

B. Keypad Locks

1. Products that may be incorporated into the Work:
 - a. Yale: Nextouch, Campus Standard
2. Requirements:
 - a. Provide Certified ANSI/BHMA Grade 1 keypad lock as scheduled.
 - b. Provide lever prep as required to accommodate the cylinder that is being provided by Owner.

2.07 CYLINDERS AND KEYING

- A. Products that may be incorporated into the Work:
 1. Owner to provide and install all cylinders/ cores.

2.08 EXIT DEVICES

- A. Products that may be incorporated into the Work:

1. Von Duprin: 98 Series, Campus Standard

- B. Requirements:

1. Device Construction:
 - a. Exit device(s) shall have a mechanism case constructed of extruded aluminum or, base plates constructed of cold rolled steel, push pad of extruded aluminum with stainless steel covering, and end caps with flush mounted, sloped design. At full-glass doors, provide exit devices with no exposed fasteners or rivets visible through glass. Where required by stile width, provide narrow-stile type device.
 - b. Latch return springs shall be compression type.
 - c. Dogging Mechanism: where dogging or latch-retraction options are not specifically scheduled for non-fire rated doors, provide device with a hex-key activated hook-type dogging mechanism constructed of steel.
 - d. Plastic or nylon used for the push pad, or parts in the dogging mechanism or latchbolt mechanism are unacceptable.
 - e. Sound Dampening: Device shall be provided with factory-installed sound dampening materials.
 - f. Provide device type, function, and trim style as indicated in hardware schedules.
2. Where exit device(s) are provided for fire rated door, provide with fire listing and label indicating "Fire Exit Hardware." If device is mounted on wood doors, provide sex nuts and bolts.
3. Provide shim kits, filler plates, and other accessories as required for each opening.

4. Unless otherwise indicated in the sets, provide device with roller-type strike.

2.09 MECHANICAL DOOR CLOSERS

A. General:

1. Valves: Closers shall have separate valves for latch speed, main speed, and back check. Valves shall be staked to prevent accidental removal. Internal Pressure Relief Valves (PRVs) are prohibited.
2. Provide the appropriate closer body, handing, and brackets to mount closer inside the building on the least-public side of the door.
 - a. Where closers are to be mounted regular arm and the opening can otherwise be opened to 180 degrees, provide closer with the appropriate special templating to allow 180 degree door swing. Where a special template is not available for 180 degree swing, provide closer arm with integrated stop.
3. Integrated Stop Closer Arms: Where a closer with integrated stop is required, provide the appropriate closer and arm as follows:
 - a. Parallel arm with spring-cushioned stop arm: Provide where door is otherwise able to open to 95 degrees and requires a parallel arm mount closer.
 - b. Parallel arm with dead stop arm: Provide where door is obstructed from opening to 95 degrees and requires a parallel arm mount closer.
 - c. Regular arm with push side surface-mounted overhead stop: Provide where door closer should mount on pull side of door.
4. Provide closers with any special templates, brackets, plates, or other accessories required for interface with header, door, wall, and other hardware. Provide closers with screw packs containing thru-bolts, machine screws, and wood screws.
5. Closers shall be provided with all-weather fluid and shall not require readjustment from 120 degrees F to -30 degrees F. Fluid shall be non-flaming and shall not fuel door or floor covering fires. Upon request, provide data indicating thermal properties of fluid.
6. Closers shall close and latch door when adjusted to meet accessibility requirements for door opening force: 8.5 lbs at exterior doors, 5 lbs at interior doors, and 15 lbs at labeled fire doors.

B. Heavy Duty Door Closers:

1. Products that may be incorporated into the Work:
 - a. LCN: 4040XP Series, Campus Standard
2. Requirements:
 - a. Closer Construction: Closer shall have cast iron body with 1-1/2 inch steel piston, double heat treated pinion, 3/4 inch bearing journals, and full complement needle bearings. Closer shall be adjustable from sizes 1 through 6.
 - b. Provide closers with spring size adjustment dial for ease of adjusting.

2.10 AUTOMATIC OPERATORS (ELECTRO-HYDRAULIC)

A. Products that may be incorporated into the Work:

1. LCN: 4600 Series

B. Requirements:

1. Provide low energy automatic operator units with hydraulic closer complying with ANSI A156.19.
2. Provide units with conventional door closer opening and closing forces unless power operator motor is activated. Provide door closer assembly with adjustable spring size, back-check, and opening and closing speed adjustment valves to control door.
 - a. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
3. Provide units with on/off switch for manual operation, motor start up delay, vestibule interface delay, electric lock delay, and door hold open delay.
4. Provide drop plates, brackets, or adapters for arms as required for details.
5. Provide actuator switches for operation as specified. Provide weather-resistant actuators at exterior applications.
6. Provide complete assemblies of controls, switches, power supplies, relays, and parts/material recommended and approved by manufacturer of automatic operator for each individual leaf.
7. Provide units with vestibule inputs that allow sequencing operation of two units, and SPDT relay for interfacing with latching or locking devices.

2.11 AUTOMATIC OPERATORS (ELECTRO-MECHANICAL)

A. Products that may be incorporated into the Work:

1. LCN: 9500 Series

B. Requirements:

1. Provide low energy automatic operator units that are electro-mechanical design complying with ANSI A156.19.
 - a. Opening: Powered by DC motor working through reduction gears.
 - b. Closing: Spring force.
 - c. Manual, hydraulic, or chain drive closers: Not permitted.
 - d. Operation: Motor is off when door is in closing mode. Door can be manually operated with power on or off without damage to operator. Provide variable adjustments, including opening and closing speed adjustment.
2. Provide units with manual off/auto/hold-open switch, push and go function to activate power operator, vestibule interface delay, electric lock delay, hold-open delay adjustable from 2 to 30 seconds, and logic terminal to interface with accessories, mats, and sensors.
3. Provide drop plates, brackets, or adapters for arms as required to suit details.
4. Provide motion sensors and/or actuator switches for operation as specified. Provide weather-resistant actuators at exterior applications.
5. Provide complete assemblies of controls, switches, power supplies, relays, and parts/material recommended and approved by manufacturer of automatic operator for each individual leaf.

2.12 ARCHITECTURAL DOOR TRIM

A. Protection Plates

1. Manufacturers that may be incorporated into the Work:
 - a. Ives
 - b. Rockwood
 - c. Trimco

2. Requirements:
 - a. Provide .050 inch thick stainless steel protection plates with height as scheduled. Plate shall have four beveled edges. Provide no screw holes and adhesive as required by door manufacturer's fire labeling requirements. Otherwise provide plate manufacturer's standard countersunk fasteners.
 - b. Provide plate with width as follows:
 - 1) Pairs of Doors: Provide plate to be 1 inch less door width.
 - 2) Single Doors: Provide plate to be 2 inches less door width on push side, pull side mounted plates to be 1 inch less door width.

B. Door Stops

1. Manufacturers that may be incorporated into the Work:
 - a. Ives
 - b. Rockwood
 - c. Trimco
2. Requirements:
 - a. Provide wall stops wherever possible.
 - b. Provide stops and holders as indicated in the HW sets.

2.13 OVERHEAD STOPS AND HOLDERS

A. Manufacturers that may be incorporated into the Work:

1. Glynn Johnson
2. Rixson
3. Sargent

B. Requirements:

1. Provide overhead stops and holders as scheduled, sized per manufacturer's recommendations based on door width.
2. Provide concealed overhead stops with adjustable jamb bracket.
3. Where possible without conflicting with other hardware, mount surface overhead stops on least public side of door.
4. Provide stops with any special templates, brackets, plates, or other accessories required for interface with header, door, wall, and other hardware.

2.14 WEATHERSTRIP AND GASKET

A. General:

1. Provide weather strip and gasketing as scheduled.
2. Size weather strip and gasket to provide a continuous seal around opening and at meeting stiles.

B. Perimeter Seals

1. Manufacturers that may be incorporated into the Work:
 - a. Zero International
 - b. National Guard

c. Pemko

2.15 MISCELLANEOUS HARDWARE

A. Silencers

1. Manufacturers that may be incorporated into the Work:
 - a. Ives
 - b. Rockwood
 - c. Trimco
2. Requirements:
 - a. Where indicated on single openings, provide 3 each grey rubber silencers on lock jamb.
 - b. Where indicated on paired openings, provide 2 each grey rubber silencers on header.

2.16 FINISHES

- A. Match items to the manufacturer's standard color and texture finish for the latch and locksets (or push-pull units if no latch or locksets).
- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware.
- C. The designations used in schedules and elsewhere to indicate hardware finishes are those listed in ANSI/BHMA A156.18, "Materials and Finishes," including coordination with the traditional U.S. finishes shown by certain manufacturers for their products.
- D. The designations used in schedules and elsewhere to indicate hardware finishes are the industry-recognized standard commercial finishes, except as otherwise noted.
 1. Brushed Chrome and/or Stainless Steel Appearance
 - a. Brushed Stainless Steel, no coating: ANSI 630.
 - b. Satin Chrome, Clear Coated: ANSI 626, ANSI 652.
 - c. Powder Coated Aluminum finish: ANSI 689.
 - d. Saddle and Panic Thresholds: Mill Aluminum finish.
 - e. Weatherstrip and Gasket: Clear Anodized Aluminum finish.

3.01 EXAMINATION

- A. Verify conditions of walls, flooring, doors, frames, and hardware are satisfactory for installation of hardware.
 1. Prior to installing doors and hardware, wash down of masonry and painting or staining of doors and frames shall be completed.
 2. Verify that walls have blocking behind wall mounted stop locations.
 3. Verify that flooring does not interfere with door or hardware operation.
 4. Ensure that frames are installed plumb, square, and true. Verify that doors and frames are properly sized and handed and are correctly prepared for hardware installation.
 5. Verify function, quantity, type, hand, and finish of hardware to be installed with the approved hardware schedule.
 6. Verify that electrical rough-in is complete and correctly located for each door.
- B. Conditions that do not allow proper installation of hardware shall be corrected before proceeding.

3.02 INSTALLATION

A. General

1. Install door hardware as detailed in the approved hardware schedule using only approved fasteners and in accordance with manufacturer's recommended procedures and methods.
2. Install hardware and signage at fire rated openings in accordance with NFPA 80 requirements.

B. Hardware Mounting Heights

1. Mount door hardware units at heights indicated, as follows, unless otherwise indicated or required to comply with governing regulations.
 - a. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
 - b. Custom Steel Doors and Frames: DHI's "Recommended Locations for Builders' Hardware for Custom Steel Doors and Frames."
 - c. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."

C. Clearances

1. Install doors, both rated and non-rated, in accordance with NFPA 80 requirements for door clearances as follows:
 - a. 1/8 inch between door and frame head and jambs for wood doors
 - b. 3/8 inch between door and frame head and jambs for metal doors
 - c. 1/8 inch at meeting stiles of pairs of doors.
 - d. 3/4 inch undercut maximum.

D. Surface Mounted Door Closers

1. Install surface mounted door closers on room side of openings, except where prohibited by scheduled hardware. Use appropriate arms, spacers, brackets, and accessories to properly install surface mounted door closers. Adjust spring power to the appropriate setting to ensure the doors reliably close under normal operating conditions.

E. Wall Mounted Door Stops

1. Locate wall mounted door stops at the appropriate height and location to properly contact protruding door trim.

F. Gasketing

1. Install gasketing to provide a continuous seal around the perimeter of the opening. Install soffit mounted hardware using the proper brackets, spacers, and accessories to allow proper installation without cutting or notching gasketing material or mounting channels.

3.03 FIELD QUALITY CONTROL

- A. Architectural Hardware Consultant: Architect will engage a qualified Architectural Hardware Consultant to perform inspections and to prepare inspection reports.
- B. Architectural Hardware Consultant will inspect door hardware and state in each report whether installed work complies with or deviates from requirements, including whether door hardware is properly installed and adjusted.

3.04 ADJUSTING

- A. After building HVAC system is balanced and adjusted, conduct final adjustment of door closers. Verify spring power of the surface mounted door closer is properly adjusted to close and latch the door and to comply with the opening force requirements of ANSI A117.1 as follows:
 - 1. Doors with Closers shall take five (5) seconds to close from 90 degrees to 12 degrees.
 - 2. Interior, non-fire rated swinging doors shall open with a maximum of 5 lbs of pressure.
 - 3. Exterior doors and fire rated doors shall open with the minimum amount of pressure required to positively close and latch the door.

3.05 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items as necessary to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

3.06 SCHEDULE

- A. The following schedule of hardware sets shall be considered a guide and the supplier is cautioned to refer to general conditions, special conditions, and the full requirements of this section. It shall be the hardware supplier's responsibility to furnish all required hardware.
- B. Where items of hardware are not definitely or correctly specified and are required for completion of the Work, a written statement of such omission, error, conflict, or other discrepancy shall be sent to the Architect, prior to date specified for receipt of bids, for clarification by addendum.
- C. Adjustments to the Contract Sum will not be allowed for omissions or items of hardware not clarified prior to bid opening.

END OF SECTION 087100

SECTION 092216 - NON-STRUCTURAL METAL FRAMING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Resistance-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

2.2 METAL FRAMING AND SUPPORTS

- A. Steel Framing Members, General: ASTM C 754.

1. Steel Sheet Components: ASTM C 645. Thickness specified is minimum uncoated base-metal thickness.
2. Protective Coating: **ASTM A 653/A 653M, G40 (Z120), hot-dip galvanized** zinc coating.

- B. Framing Systems:

1. Studs and Runners: In depth indicated unless otherwise indicated.
2. Flat Strap and Backing: **0.033 inch (0.84 mm)** thick.
3. Hat-Shaped, Rigid Furring Channels: In depth indicated and **0.033 inch (0.84 mm)** thick.
4. Resilient Furring Channels: 1/2 inch (13 mm) deep, with single- or double-leg configuration.
5. Cold-Rolled Furring Channels: 0.053 inch (1.34 mm) thick, 3/4 inch (19 mm) deep.
6. Z-Furring: In depth required by insulation, 1-1/4-inch (32-mm) face flange, 7/8-inch (22-mm) wall-attachment flange, and 0.018 inch (0.45 mm) thick.

- C. Suspension Systems:

1. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch (1.59-mm) diameter, or double strand of 0.048-inch- (1.21-mm-) diameter wire.
2. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, and 0.162-inch (4.12-mm) diameter.
3. Carrying Channels: Cold-rolled steel, 0.053 inch (1.34 mm) thick, **2-1/2 inches (64 mm)** deep.
4. Furring Channels: As indicated.
5. Grid Suspension System for Gypsum Board Ceilings: Interlocking, direct-hung system.

- a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1) Armstrong World Industries, Inc.
 - 2) Chicago Metallic Corporation.
 - 3) United States Gypsum Company.

2.3 ACCESSORIES

- A. General: Comply with referenced installation standards.
 - 1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install steel framing to comply with ASTM C 754."
 - 1. Gypsum Board Assemblies: Also comply with ASTM C 840.
- B. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
- C. Isolate steel framing from building structure, except at floor, to prevent transfer of loading imposed by structural movement.
 - 1. Where studs are installed directly against exterior walls, install isolation strip between studs and wall.
- D. Fire-Resistance-Rated Assemblies: Comply with requirements of listed assemblies.
- E. Install suspension systems level to within **1/8 inch in 12 feet (3 mm in 3.6 m)**.

END OF SECTION 092216

SECTION 092900 - GYPSUM BOARD

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Resistance-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

2.2 PANEL PRODUCTS

- A. Provide in maximum lengths available to minimize end-to-end butt joints.
- B. Interior Gypsum Board: ASTM C 1396/C 1396M, in thickness indicated, with manufacturer's standard edges. Type X where indicated and Sag-resistant type for ceiling surfaces.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. American Gypsum.
 - b. CertainTeed Corporation.
 - c. Georgia-Pacific Building Products.
 - d. Lafarge North America Inc.
 - e. National Gypsum Company.
 - f. United States Gypsum Company.

2.3 ACCESSORIES

- A. Trim Accessories: ASTM C 1047, formed from galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet. For exterior trim, use accessories formed from hot-dip galvanized-steel sheet, plastic, or rolled zinc.
 - 1. Provide cornerbead at outside corners unless otherwise indicated.
 - 2. Provide LC-bead (J-bead) at exposed panel edges.
 - 3. Provide control joints where indicated.

- B. Aluminum Accessories: Extruded-aluminum accessories indicated with manufacturer's standard corrosion-resistant primer.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Fry Reglet Corporation.
- C. Joint-Treatment Materials: ASTM C 475/C 475M.
 - 1. Joint Tape: Paper unless otherwise recommended by panel manufacturer.
 - 2. Joint Compounds: Setting-type compounds, Drying-type, ready-mixed, all-purpose compounds, Setting-type taping compound and drying-type, ready-mixed, compounds for topping.
 - 3. Cementitious Backer Unit Joint-Treatment Materials: Products recommended by cementitious backer unit manufacturer.
- D. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.
- E. Sound-Attenuation Blankets: ASTM C 665, Type I (unfaced).
- F. Textured Finish: To match existing.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Georgia-Pacific Building Products.
 - b. National Gypsum Company.
 - c. United States Gypsum Company.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install gypsum board to comply with ASTM C 840.
 - 1. Isolate gypsum board assemblies from abutting structural and masonry work. Provide edge trim and acoustical sealant.
 - 2. Single-Layer Fastening Methods: Fasten gypsum panels to supports with screws.
 - 3. Multilayer Fastening Methods: Per UL requirements.
- B. Fire-Resistance-Rated Assemblies: Comply with requirements of listed assemblies.
- C. Finishing Gypsum Board: ASTM C 840.
 - 1. At concealed areas, unless a higher level of finish is required for fire-resistance-rated assemblies, provide Level 1 finish: Embed tape at joints.

2. Unless otherwise indicated, provide Level 4 finish: Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges.

END OF SECTION 092900

SECTION 095113 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data and Samples.

PART 2 - PRODUCTS

2.1 ACOUSTICAL PANELS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1. Armstrong World Industries, Inc.
- B. Classification: As follows, per ASTM E 1264:
 - 1. Type and Form: As noted on the drawings.
 - 2. Pattern: As noted on the drawings.
 - 3. Surface-Burning Characteristics: Class A.
- C. Color: White.
- D. Edge Detail: To match existing.
- E. Thickness: To match existing.
- F. Modular Size: 24 by 48 inches (610 by 1220 mm) as indicated.

2.2 CEILING SUSPENSION SYSTEM

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1. Armstrong World Industries, Inc.
- B. Ceiling Suspension System: To match existing.
 - 1. Face Design: To match existing.
 - 2. Face Finish: To match existing.
- C. Attachment Devices: Sized for 5 times the design load indicated in ASTM C 635, Table 1, Direct Hung, unless otherwise indicated.

- D. Wire Hangers, Braces, and Ties: Zinc-coated carbon-steel wire; ASTM A 641/A 641M, Class 1 zinc coating, soft temper.
 - 1. Size: Provide yield strength at least 3 times the hanger design load (ASTM C 635, Table 1, Direct Hung), but not less than 0.106-inch- (2.69-mm-) diameter wire.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install acoustical ceilings to comply with ASTM C 636/C 636M and seismic design requirements indicated, according to manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."
- B. Install acoustical panels with undamaged edges and fit accurately into suspension system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit.
- C. Arrange directionally patterned acoustical units as indicated on Drawings.

END OF SECTION 095113

SECTION 096513 - RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data and Samples.
- B. Extra Materials: Deliver to Owner at least 10 linear feet (3 linear m) of each type and color of resilient wall base installed.

PART 2 - PRODUCTS

2.1 RESILIENT BASE

- A. Rubber Base: ASTM F 1861, Type TP (rubber, thermoplastic).
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Roppe Corporation, USA.
- B. Style: Cove (base with toe).
- C. Minimum Thickness: 0.125 inch (3.2 mm).
- D. Height: 4 inches (102 mm) and 6 inches (152 mm).
- E. Lengths: coils in manufacturer's standard lengths. Sections of base not acceptable.
- F. Outside Corners: Job formed or preformed.
- G. Inside Corners: Job formed or preformed.

2.2 RESILIENT MOLDING ACCESSORY

- A. Rubber Molding Accessories.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Roppe Corporation, USA.
- B. Description: Transition strips.
 - 1. Provide matching transition strips at all flooring material transitions.

2.3 INSTALLATION ACCESSORIES

- A. Adhesives: Water-resistant type recommended by manufacturer to suit floor covering and substrate conditions indicated.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Prepare horizontal surfaces according to ASTM F 710. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
- B. Adhesively install resilient wall base and accessories.
- C. Install wall base in maximum lengths possible. Apply to walls, columns, pilasters, casework, and other permanent fixtures in rooms or areas where base is required.
- D. Install reducer strips at edges of floor coverings that would otherwise be exposed.

END OF SECTION 096513

SECTION 099123 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals:
 - 1. Product Data
 - 2. Samples.
- B. Extra Materials: Deliver to Owner **1 gal.** of each color and type of finish-coat paint used on Project, in containers, properly labeled and sealed.

PART 2 - PRODUCTS

2.1 PAINT

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1. Benjamin Moore & Co.
 - 2. Sherwin-Williams Company (The).
- B. MPI Standards: Provide materials that comply with MPI standards indicated and listed in its "MPI Approved Products List."
 - 1. Primer Sealer, Latex: MPI #50.
 - 2. Primer, Alkali Resistant, Water Based: MPI #3.
 - 3. Primer Sealer, Institutional Low Odor/VOC: MPI #149.
 - 4. Primer, Latex, for Interior Wood: MPI #39.
 - 5. Primer Sealer, Alkyd, Interior: MPI #45.
 - 6. Primer, Bonding, Water Based: MPI #17.
 - 7. Primer, Bonding, Solvent Based: MPI #69.
 - 8. Primer, Alkyd, Anticorrosive: MPI #79.
 - 9. Primer, Galvanized, Water Based: MPI #134.
 - 10. Primer, Quick Dry, for Aluminum: MPI #95.
 - 11. Latex, Interior, Flat, (Gloss Level 1): MPI #53.
 - 12. Latex, Interior, (Gloss Level 2): MPI #44.
 - 13. Latex, Interior, (Gloss Level 4): MPI #43.
 - 14. Latex, Interior, Semigloss, (Gloss Level 5): MPI #54.
 - 15. Latex, Interior, Gloss, (Gloss Level 6, except Minimum Gloss of 65 Units at 60 Degrees): MPI #114.
 - 16. Latex, Institutional Low Odor/VOC, Flat (Gloss Level 1): MPI #143.
 - 17. Latex, Institutional Low Odor/VOC, (Gloss Level 2): MPI #144.
 - 18. Latex, Institutional Low Odor/VOC, Semigloss (Gloss Level 5): MPI #147.
 - 19. Latex, High-Performance Architectural, (Gloss Level 2): MPI #138.

20. Latex, High-Performance Architectural, Semigloss (Gloss Level 5): MPI #141.
 21. Alkyd, Interior, Flat (Gloss Level 1): MPI #49.
 22. Alkyd, Interior, Semigloss (Gloss Level 5): MPI #47.
 23. Alkyd, Interior, Gloss (Gloss Level 6): MPI #48.
 24. Alkyd, Quick Dry, Semigloss (Gloss Level 5): MPI #81.
 25. Alkyd, Quick Dry, Gloss (Gloss Level 7): MPI #96.
- C. Material Compatibility: Provide materials that are compatible with one another and with substrates.
1. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- D. Paints and coatings shall comply with the following limits for VOC content:
1. Flat Paints and Coatings: **50 g/L**.
 2. Nonflat Paints, Coatings: **150 g/L**.
 3. Primers, Sealers, and Undercoaters: **200 g/L**.
- E. Colors: To match existing.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Comply with recommendations in MPI's "MPI Architectural Painting Specification Manual" applicable to substrates indicated.
- B. Remove hardware, lighting fixtures, and similar items that are not to be painted. Mask items that cannot be removed. Reinstall items in each area after painting is complete.
- C. Clean and prepare surfaces in an area before beginning painting in that area. Schedule painting so cleaning operations will not damage newly painted surfaces.

3.2 APPLICATION

- A. Comply with recommendations in MPI's "MPI Architectural Painting Specification Manual" applicable to substrates indicated.
- B. Paint exposed surfaces, **new and existing**, unless otherwise indicated.
 1. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces.
 2. Paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 3. Paint the back side of access panels.
 4. Color-code mechanical piping in accessible ceiling spaces.
 5. Do not paint prefinished items, items with an integral finish, operating parts, and labels unless otherwise indicated.
- C. Apply paints according to manufacturer's written instructions.

1. Use brushes only where the use of other applicators is not practical.
 2. Use rollers for finish coat on interior walls and ceilings.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
1. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

3.3 INTERIOR PAINT APPLICATION SCHEDULE

A. Steel:

1. **Semigloss, Quick-Dry Enamel: Two coats** over quick-drying alkyd metal primer: MPI INT 5.1A.
2. **Semigloss Latex: Two coats** over **quick-drying alkyd** primer: MPI INT 5.1Q.
3. **Semigloss, Alkyd Enamel: Two coats** over **quick-drying alkyd** primer: MPI INT 5.1E.

B. **Gypsum Board:**

1. Latex with gloss level to match existing: **Two coats** over latex primer/sealer: MPI INT 9.2A.

C. Spray-Textured Ceilings:

1. **Semigloss Latex: One coat** over alkyd primer/sealer: MPI INT 9.1B.

END OF SECTION 099123

SECTION 123661.16 - SOLID SURFACING COUNTERTOPS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Solid surface material countertops.
 - 2. Solid surface material backsplashes.
 - 3. Solid surface material end splashes.
 - 4. Solid surface material apron fronts.
 - 5.

1.3 ACTION SUBMITTALS

- A. Product Data: For countertop materials.
- B. Shop Drawings: For countertops. Show materials, finishes, edge and backsplash profiles, methods of joining, and cutouts for plumbing fixtures.
 - 1. Show locations and details of joints.
- C. Samples for Initial Selection: For each type of material exposed to view.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For solid surface material countertops to include in maintenance manuals. Include Product Data for care products used or recommended by Installer and names, addresses, and telephone numbers of local sources for products.

1.5 FIELD CONDITIONS

- A. Field Measurements: Verify dimensions of countertops by field measurements after base cabinets are installed but] before countertop fabrication is complete.

1.6 COORDINATION

- A. Coordinate locations of utilities that will penetrate countertops or backsplashes.

PART 2 - PRODUCTS

2.1 SOLID SURFACE COUNTERTOP MATERIALS

- A. Solid Surface Material: Homogeneous-filled plastic resin complying with ICPA SS-1.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. MSI
 - 2. Type: Provide Standard type.
 - 3. Colors and Patterns: As indicated on drawings.

2.2 COUNTERTOP FABRICATION

- A. Fabricate countertops according to solid surface material manufacturer's written instructions and to the AWI/AWMAC/WI's "Architectural Woodwork Standards."
 - 1. Grade: Custom.
- B. Countertops: 1/2-inch- or 3/4-inch- thick, solid surface material with front edge built up with same material.
- C. Backsplashes: 1/2-inch- or 3/4-inch- thick, solid surface material.
- D. Joints: Fabricate countertops without joints.
- E. Cutouts and Holes:
 - 1. Counter-Mounted Plumbing Fixtures: Prepare countertops in shop for field cutting openings for counter-mounted fixtures. Mark tops for cutouts and drill holes at corners of cutout locations. Make corner holes of largest radius practical.
 - 2. Counter-Mounted Cooktops: Prepare countertops in shop for field cutting openings for cooktops. Mark tops for cutouts and drill holes at corners of cutout locations. Make corner holes of largest radius practical.

2.3 INSTALLATION MATERIALS

- A. Adhesive: Product recommended by solid surface material manufacturer.
 - 1. Adhesives shall have a VOC content of 70 g/L or less.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates to receive solid surface material countertops and conditions under which countertops will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of countertops.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install countertops level to a tolerance of 1/8 inch in 8 feet, 1/4 inch maximum. Do not exceed 1/64-inch difference between planes of adjacent units.
- B. Fasten countertops by screwing through corner blocks of base units into underside of countertop. Pre-drill holes for screws as recommended by manufacturer. Align adjacent surfaces and, using adhesive in color to match countertop, form seams to comply with manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
- C. Fasten subtops to cabinets by screwing through subtops into cornerblocks of base cabinets. Shim as needed to align subtops in a level plane.
- D. Secure countertops to subtops with adhesive according to solid surface material manufacturer's written instructions. Align adjacent surfaces and, using adhesive in color to match countertop, form seams to comply with manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
- E. Bond joints with adhesive and draw tight as countertops are set. Mask areas of countertops adjacent to joints to prevent adhesive smears.
 - 1. Install metal splines in kerfs in countertop edges at joints. Fill kerfs with adhesive before inserting splines and remove excess immediately after adjoining units are drawn into position.
 - 2. Clamp units to temporary bracing, supports, or each other to ensure that countertops are properly aligned and joints are of specified width.
- F. Install backsplashes and end splashes by adhering to wall and countertops with adhesive. Mask areas of countertops and splashes adjacent to joints to prevent adhesive smears.
- G. Install aprons to backing and countertops with adhesive. Mask areas of countertops and splashes adjacent to joints to prevent adhesive smears. Fasten by screwing through backing. Pre-drill holes for screws as recommended by manufacturer.

- H. Complete cutouts not finished in shop. Mask areas of countertops adjacent to cutouts to prevent damage while cutting. Make cutouts to accurately fit items to be installed, and at right angles to finished surfaces unless beveling is required for clearance. Ease edges slightly to prevent snipping.
 - 1. Seal edges of cutouts in particleboard subtops by saturating with varnish.
- I. Apply sealant to gaps at walls; comply with Section 079200 "Joint Sealants."

END OF SECTION 123661.16

BULLET RESISTANT COMPOSITE (FIBERGLASS) - 130700

PART 1 GENERAL

1.1 REFERENCE

- A. Underwriters Laboratory UL 752-Standard for Bullet Resisting Equipment & ASTM E119-98- Standard Test Methods for Fire Tests of Building Construction and Materials, NIJ Standard 0108.01-(National Institute of Justice) Standard for Ballistic Resistant Protective Materials, MIL-P-46593A-Numerical simulation of ballistic impact on composite laminates, MIL-STD-622F- V50 Ballistic Test for Armor.

1.2 SUBMITTALS

- A. The following shall be submitted by the manufacturer in accordance with Sections 13070 and any Special Contract Requirements: Submit for approval prior to fabrication: samples, test reports, shop drawings (dimensioned profiles including anchorage and finishes), product specifications, test reports (current UL Listing Verification & UL 752 Test Results as provided by Underwriters Laboratories), and printed data in sufficient detail to indicate compliance with the contract documents. ASTM E119-98 One Hour Fire Rating of Building and Construction Materials. Manufacturer's Instructions for installation of TSS Bullet Resistant Fiberglass Panels. All required submittals shall be approved prior to installation.

1.3 DESIGN

- A. Through the design, manufacturing techniques and material application the Bullet Resistant Fiberglass shall be of the "non-ricochet" type. This design is intended to permit the encapture and retention of an attacking projectile lessening the potential of a random injury or lateral penetration.

1.4 QUALITY ASSURANCE

- A. Manufacturer shall be a Company that specializes in manufacturing products of the specified type with a minimum of three years experience. Installer shall be a Company that specializes in product type.

1.5 DELIVERY, STORAGE & HANDLING

- A. Delivery of the materials to the project with the manufacturer's Labels intact and legible. Handle the materials with care to prevent damage. Store materials inside and under cover, stack flat and off floor. Project conditions (temperature, humidity, and ventilation) shall be within the maximum limit recommendations set by manufacturer. Do not install products that are under conditions outside these limits.

1.6 WARRANTY

- A. All materials shall be warranted against defects for a period of 1 year for the date of receipt at the project site. All workmanship, shall be installed by a certified installer, shall be guaranteed against defects for a period of 1 year from the date of installation. Certificates of warranty shall be provided at project completion.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Basis of Design: Total Security Solutions, Inc, 170 National Park Drive, Fowlerville, MI 48836, 866-930-7807., www.tssbulletproof.com

B. Substitutions to be of equal quality and construction.

2.2 BULLET RESISTANT COMPOSITE (FIBERGLASS) MATERIAL

A. Composite Panel Product: TSS Total Armor Ballistic Resistant Fiberglass Panel, shall be selected from the chart below. The panels shall be made of multiple layers of woven roving ballistic grade fiberglass cloth impregnated with a thermoset polyester resin and compressed into flat rigid sheets. Fabrication: the technique and materials used shall provide the controlled internal delamination to permit the encapture of the penetrating projectile with Carbide grit edge saw blades. Exposed fasteners shall be non-corrosive.

Product shall be: TSS Total ARMOR Ballistic Resistant Fiberglass Panel TA-3___

TSS BULLET RESISTANT FIBERGLASS PANELS

PRODUCT	TEST CRITERIA/PERFORMANCE LEVEL	BALLISTIC DATA	NOMINAL THICKNESS	LBS/SQ FT
TA-1	UL 752/Level 1 (UL Listed)	9MM, 124 Gr, 1175 Ft. Sec, FMJ	1/4"	2.4
	NIJ 0108.01 / Level IIA	9MM, 124 Gr, 1090 Ft. Sec, FMJ		
TA-2	UL 752/Level 2 (UL Listed)	357 Mag, 158 Gr, 1250 Ft. Sec, LSP	5/16"	3.0
	NIJ 0108.01 / Level II	357 Mag, 158 Gr, 1395 Ft. Sec, JSP		
TA-3	UL 752/Level 3 (UL Listed)	44 Mag, 240 Gr, 1350 Ft. Sec, SWC	1/2"	4.0
	NIJ 0108.01 / Level IIIA	44 Mag, 158 Gr, 1400Ft. Sec, SWC		

A. Size shall be: As required

2.3 SECURITY LEVEL

A. The TSS Bullet Resistant Fiberglass will be rated and tested for UL 752 and NIJ—0108.01 at the Level indicated by the product selected.

PART 3 EXECUTION

3.1 CONTRACT DOCUMENTS

A. Prior to installing the bullet resistant material, the contractor shall verify that all supports have been installed as required by the contract documents and architectural drawings, and approved shop/CAD drawings, if required.

3.2 INSTALLATION

A. Do not begin installation until openings have been verified and surfaces properly prepared in accordance with Drawings. Prepare all surfaces per recommendations of manufacturer. Install in accordance with manufacturer's instructions and UL 752. Set all equipment plumb. Fire rated assemblies in accordance with NFPA80.

B. TSS Bullet Resistant Fiberglass panels can be installed using industrial adhesive, mastic, screws and bolts. Method of application shall maintain bullet resistive rating at junctures with concrete floor, door and window frames and other penetrations. Installation tolerance shall not exceed 1/16th of an inch (1.6mm) for squareness, alignment, twist and plumb. Install hardware as specified.

3.3 JOINTS

A. All joints shall be reinforced by a back-up layer of bullet resistive material. The bullet resistance of the joint, as reinforced, shall be at least equal to that of the panel. Minimum width of reinforcing layer shall be 4" (2" on each panel) or a 2" overlap minimum. No rigid high-density material shall be used adjacent to the panel's inner surface, allow 1/4" gap.

3.4 POST APPLICATION

A. Total Security Solution (TSS) Bullet Resistant Fiberglass Panels shall be installed in accordance with manufacturer's printed recommendations, including adhering to industrial adhesive, mastic, screws, and bolts. Method of application shall maintain the bullet resistive rating at junctures with concrete floor slabs, the concrete roof slabs, the bullet resistive door frames, the bullet resistive window frames and all required penetrations.

B. Inspection and Cleaning: Verify installation is complete and complies with manufacturer's requirements. Clean product and accessories, removing excess sealant, labels and protective covers.

C. Touch-up, repair or replace damaged products before Substantial Completion.

D. Product Warranty: Applicable warranty shall be issued to owner upon final release of completed project.

END OF SECTION 130700

BULLET RESISTANT BAFFLE TRANSACTION WINDOW ASSEMBLY - 130701

PART 1 GENERAL

1.1 REFERENCE

- A. Underwriters Laboratory UL 752-Standard for Bullet Resisting Equipment & ASTM E119-98- Standard Test Methods for Fire Tests of Building Construction and Materials, NIJ Standard 0108.01-(National Institute of Justice) Standard for Ballistic Resistant Protective Materials, ASTM B 209/B 209M- Standard Specification for Aluminum and Aluminum Alloy Sheet and Plate, ASTM A 666-Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate and Flat Bar..

1.2 SUBMITTALS

- A. The following shall be submitted by the manufacturer in accordance with Sections 13070 and any Special Contract Requirements and coordinate with Sections 01340: Submit for approval prior to fabrication: samples, product data (including preparation, storage and installation methods), cuts & anchor spacing, reinforcement & location , product specifications, shop drawings, test reports (current UL Listing Verification & UL 752 Test Results as provided by Underwriters Laboratories), and printed data in sufficient detail to indicate compliance with the contract documents.
- B. Manufacturer's Instructions for installation and cleaning of TSS Bullet Baffle Design Transaction Window Assemblies. All required submittals shall be approved prior to installation.

1.3 DESIGN PERFORMANCE

- A. Through the design, manufacturing techniques and material application the TSS Bullet Baffle Design Transaction Window shall be of the "non-ricochet" type. This design is intended to permit the encapture and retention of an attacking projectile lessening the potential of a random injury or lateral penetration. This assembly shall provide single or multiple transaction positions utilizing the "natural voice" baffle configuration. This design shall employ offset vertical standing vision panels and 5" baffles to complete the "natural voice" design as well as to protect against angled ballistic penetrations. Each transaction position shall have a stainless steel dip tray as shown on the drawings. Components must be manufactured in strict accordance with the specifications, design and details. All vision panels and baffles shall be cut to size with all exposed edges polished. Necessary holes shall be pre drilled and tapped where required. Stainless Steel assembly screws and acrylic spacers shall be provided. Clear anodized angles and channels shall be provided in field lengths. Anchor screws shall be provided by the installer.
- B. No field alterations to the construction of the units fabricated under the acceptable standards shall be allowed unless approved by the manufacturer and the architect. Standard manufacturing tolerances shall be +/- 1/16".
- C. Materials shall meet or exceed UL 752 requirements.

1.4 QUALITY ASSURANCE

- A. Manufacturer shall be a Company that specializes in manufacturing products of the specified type with a minimum of five years experience. Installer shall be a Company that specializes in product type specified and Certified for the installation by the manufacturer. Manufacturer shall provide a Mock-up, if required, for evaluation of surface preparation and application workmanship and color/finish to the Architect for approval prior to start of work.

1.5 DELIVERY, STORAGE & HANDLING

- A. Delivery the materials to the project with the manufacturer's UL Listed Labels intact and legible. Handle the materials with care to prevent damage. Store materials inside and under cover, stack flat and off floor. Project conditions (temperature, humidity, and ventilation) shall be within the maximum limit recommendations set by manufacturer. Do not install products that are under conditions outside these limits.

1.6 WARRANTY

- A. All materials shall be warranted against defects for a period of 1 year for the date of receipt at the project site. . Certificates of manufacturer's standard limited warranty shall be provided at project completion.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Basis of Design: Total Security Solutions, Inc, 170 National Park Drive, Fowlerville, MI 48836, 866-930-7807. Web: www.tssbulletproof.com .

B. Substitutions to be of equal construction and quality.

2.2 BULLET RESISTANT GLAZING PANELS-BAFFLES

A. Glazing Panels and baffles shall be Level 3 laminated acrylic/polycarbonate composite as shown on the drawings with "Natural Voice" . The frame shall be of the "non-ricochet" type, lined with UL Listed Bullet Resistant Composite.

B. Aluminum sections to be manufactured in accordance with ASTM B209, Extruded aluminum alloy 6063 T5 Anodized or powder coated finish to match the existing décor and be free of sharp edges or burrs when in place. Glazing Channel: U-Channel specifically designed for securing transparencies tightly in place. Angles and stops are only acceptable for top attachment.

1) Frame to be 18 ga. Primed steel. Glazing must be removable from the secure side and not require the removal of the frame from opening. The bottom of the glazing to be capped with corresponding material on the frame (ie: stainless steel on stainless steel). Provide a shelf 2" thick with a recessed deal tray. The shelf to be full width of window, 12" deep, centered under the glazing and covered with a black high pressure laminate.

2). Deal tray to be 16 ga. stainless steel, # 4 finish 12" x 10" from the outside edge of flanges with a clear opening .

E. Product shall be: TSS Aluminum Interior Transaction Window
BULLET RESISTANT WINDOW ASSEMBLY

130701- 2

- 1) Size shall be 36" X48"
 - 2) Color options shall be Clear
 - 3) Glazing Material shall be Laminated Polycarb
 - 4) Security Level shall be 3
- A) Bullet Resisting Glazing Materials**
Bullet Resistant Level 3: 1 1/4" LP 1250 Laminated
- 5) Integral plastic laminate countertop – Color: Black plastic laminate

PART 3 EXECUTION

3.1 PREPARATION

A. Prior to installing the bullet resistive material, the contractor shall verify that all supports have been installed as required by the contract documents and architectural drawings, and approved shop/CAD drawings, if required. Installer shall notify architect of any unsatisfactory preparation that is responsibility of another installer.

B. Clean and prepare all surfaces per manufacturers recommendations for achieving the best results for the substrate under the project conditions.

3.2 INSTALLATION

A. Do not begin installation until openings have been verified and surfaces properly prepared in accordance with Drawings. Install in accordance with manufacturer's instructions and UL 752. Set all equipment plumb. All product shall be installed per manufacturer's installation instructions provided, if warranty is to be issued.

B. Window shall arrive on site as a completed unit. Unit shall be installed in provided opening (wall/door), secured to structure (anchors by others).

3.3 POST APPLICATION

A. Window shall be installed in accordance with manufacturer's printed recommendations, including adhering to anchoring and finishing details.

B. Inspection and Cleaning: Verify installation is complete and complies with manufacturer's requirements. Clean product and accessories, removing excess sealant, labels and protective covers.

C. Touch-up, repair or replace damaged products before Substantial Completion.

D. Product Warranty: Applicable warranty shall be issued to owner upon final release of completed project.

END OF SECTION 130701