

**U.S EMBASSY
COMPOUND EMERGENCY
SANCTUARY (CES)
DESIGN**

**100% Construction Documents
Phase Report**
Contract Number:SGR100-13-M-0915

SPECIFICATIONS

Division 5 - Division 8 - Division 9

March 28,2014



Doxiadis Associates

DIVISION 5 – METALS

SECTION 05500 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Loose bearing and leveling plates.
2. Loose steel lintels.
3. Shelf angles.
4. Support angles for elevator door sills.
5. Elevator machine beams.
6. Steel framing and supports for overhead doors.
7. Steel framing and supports for operable partitions and ceiling hung toilet partitions.
8. Steel framing and supports for countertops.
9. Metal angle corner guards for columns, walls and bading deck edge subject to vehicular impact.
10. Metal edgings.
11. Bicycle Racks.
12. Flack Jacket Hanger Racks in the Marine Security Guard React Room.
13. Pipe bollards.

1.2 PERFORMANCE REQUIREMENTS

- A. Structural Performance of Ladders: Provide ladders capable of withstanding the effects of loads and stresses within limits and under conditions specified in ANSI A14.3.
- B. Thermal Movements: Provide exterior metal fabrications that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
1. Temperature Change (Range): 67 deg C, ambient; 100 deg C, material surfaces.

1.3 SUBMITTALS

A. Product Data: For the following:

1. Metal nosings and treads.
2. Paint products.
3. Grout.

B. Shop Drawings: Show fabrication and installation details for metal fabrications.

1. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.
 2. Provide templates for anchors and bolts specified for installation under other Sections.
 3. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
- C. Mill Certificates: Signed by manufacturers of stainless-steel sheet certifying that products furnished comply with requirements.
- D. Welding certificates.
- E. Qualification Data: For professional engineer.

1.4 QUALITY ASSURANCE

- A. Fabricator Qualifications: A firm experienced in producing metal fabrications similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- B. Welding: Qualify procedures and personnel according to the following:
1. AWS D1.1, "Structural Welding Code--Steel."
 2. AWS D1.2, "Structural Welding Code--Aluminum."
 3. AWS D1.3, "Structural Welding Code--Sheet Steel."
 4. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

PART 2 - PRODUCTS

2.1 METALS, GENERAL

- A. Metal Surfaces, General: For metal fabrications exposed to view in the completed Work, provide materials with smooth, flat surfaces without blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.

2.2 FERROUS METALS

- A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- B. Stainless-Steel Sheet, Strip, Plate, and Flat Bars: ASTM A 666, Type 304.
- C. Stainless-Steel Bars and Shapes: ASTM A 276, Type 304.
- D. Steel Tubing: Cold-formed steel tubing complying with ASTM A 500.

- E. Steel Pipe: ASTM A 53, standard weight (Schedule 40), unless another weight is indicated or required by structural loads.
- F. Cast-in-Place Anchors in Concrete: Anchors of type indicated below, fabricated from corrosion-resistant materials capable of sustaining, without failure, the load imposed within a safety factor of 4, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.
 - 1. Threaded or wedge type; galvanized ferrous castings, either ASTM A 47M malleable iron or ASTM A 27/A 27M cast steel. Provide bolts, washers, and shims as needed, hot-dip galvanized per ASTM A 153/A 153M.
- G. Galvanized Pipe and Sleeves: Galvanized steel complying with ASTM A 653/A 653M, commercial steel, Type B, with Z275 coating; 2.8-mm nominal thickness.
- H. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

2.3 NONFERROUS METALS

- A. Aluminum Plate and Sheet: ASTM B 209M , Alloy 6061-T6.
- B. Aluminum Extrusions: ASTM B 221M , Alloy 6063-T6.
- C. Aluminum-Alloy Rolled Tread Plate: ASTM B 632/B 632M, Alloy 6061-T6.
- D. Aluminum Castings: ASTM B 26/B 26M, Alloy 443.0-F.
- E. Bronze Plate, Sheet, Strip, and Bars: ASTM B 36/B 36M, Alloy UNS No. C28000 (muntz metal, 60 percent copper).
- F. Bronze Extrusions: ASTM B 455, Alloy UNS No. C38500 (extruded Architectural bronze).
- G. Bronze Castings: ASTM B 584, Alloy UNS No. C83600 (leaded red brass) or No. C84400 (leaded semired brass).

2.4 FASTENERS

- A. General: Provide Type 304 or 316 stainless-steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B 633, Class Fe/Zn 5, where built into exterior walls. Select fasteners for type, grade, and class required.
- B. Bolts and Nuts: Regular hexagon-head bolts, ASTM F 568M, Property Class 4.6; with hex nuts, ASTM A 563M; and, where indicated, flat washers.
- C. Anchor Bolts: ASTM F 1554, Grade 36.
- D. Machine Screws: ASME B18.6.7M.

- E. Lag Bolts: ASME B18.2.3.8M.
- F. Wood Screws: Flat head, carbon steel, ASME B18.6.1.
- G. Plain Washers: Round, carbon steel, ASME B18.22M.
- H. Lock Washers: Helical, spring type, carbon steel, ASME B18.21.2M.
- I. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.
 - 1. Material: Carbon-steel components zinc-plated to comply with ASTM B 633, Class Fe/Zn 5.
 - 2. Material: Alloy Group 1 or 2 stainless-steel bolts complying with ASTM F 738M and nuts complying with ASTM F 836M.
- J. Toggle Bolts: FS FF-B-588, tumble-wing type, class and style as needed.

2.5 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- B. Shop Primers: Provide primers that comply with Division 9 painting Sections.
- C. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79.
 - 1. Use primer with a VOC content of 420 g/L (3.5 lb/gal.) or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - 2. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.
- D. Zinc-Rich Primer: Complying with SSPC-Paint 20 or SSPC-Paint 29 and compatible with topcoat.
 - 1. Use primer with a VOC content of 420 g/L (3.5 lb/gal.) or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- E. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds in steel, complying with SSPC-Paint 20.
- F. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.
- G. Nonshrink, Metallic Grout: Factory-packaged, ferrous-aggregate grout complying with ASTM C 1107, specifically recommended by manufacturer for heavy-duty loading applications.

- H. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.
- I. Concrete Materials and Properties: Comply with requirements in Division 3 Section "Cast-in-Place Concrete" for normal-weight, air-entrained, ready-mix concrete with a minimum 28-day compressive strength of 20 MPa , unless otherwise indicated.

2.6 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
- B. Shear and punch metals cleanly and accurately. Remove burrs.
- C. Ease exposed edges to a radius of approximately 1 mm, unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- D. Weld corners and seams continuously to comply with the following:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- E. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
- F. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
- G. Fabricate joints that will be exposed to weather in a manner to exclude water, or provide weep holes where water may accumulate.
- H. Allow for thermal movement resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening up of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change (Range): 67 deg C, ambient; 100 deg C, material surfaces.

- I. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.
- J. Remove sharp or rough areas on exposed traffic surfaces.
- K. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts. Locate joints where least conspicuous.

2.7 LOOSE BEARING AND LEVELING PLATES

- A. Provide loose bearing and leveling plates for steel items bearing on masonry or concrete construction. Drill plates to receive anchor bolts and for grouting.
- B. Galvanize plates after fabrication.

2.8 LOOSE STEEL LINTELS

- A. Fabricate loose structural-steel lintels from steel angles and shapes of size indicated for openings and recesses in masonry walls and partitions at locations indicated.
- B. Weld adjoining members together to form a single unit where indicated.
- C. Size loose lintels to provide bearing length at each side of openings equal to one-twelfth of clear span, but not less than 200 mm, unless otherwise indicated.
- D. Galvanize loose steel lintels located in exterior walls.

2.9 MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Provide steel framing and supports indicated and as necessary to complete the Work.
- B. Fabricate units from structural-steel shapes, plates, and bars of welded construction, unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction retained by framing and supports. Cut, drill, and tap units to receive hardware, hangers, and similar items.
 - 1. Fabricate units from slotted channel framing where indicated.
 - 2. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors 32 mm wide by 6 mm thick by 200 mm long at 600 mm o.c., unless otherwise indicated.
 - 3. Furnish inserts if units must be installed after concrete is placed.
- C. Fabricate supports for operable partitions as follows:

1. Beams: Continuous steel shapes of sizes indicated with attached bearing plates, anchors, and braces as indicated. Drill bottom flanges of beams to receive partition track hanger rods; locate holes where indicated on operable partition Shop Drawings.

D. Galvanize miscellaneous framing and supports where indicated.

2.10 MISCELLANEOUS STEEL TRIM

A. Unless otherwise indicated, fabricate units from structural-steel shapes, plates, and bars of profiles shown with continuously welded joints, and smooth exposed edges. Miter corners and use concealed field splices where possible.

B. Provide cutouts, fittings, and anchorages as needed to coordinate assembly and installation with other work. Provide anchors, welded to trim, for embedding in concrete or masonry construction, spaced not more than 150 mm from each end, 150 mm from corners, and 600 mm o.c., unless otherwise indicated.

C. Galvanize miscellaneous steel trim in the following locations:

1. Exterior.
2. Interior, where indicated.

2.11 STEEL PIPE BOLLARDS

A. Type: Standard schedule 40 steel pipe.

1. Fill with standard weight concrete; set in concrete foundations.
2. Continuously weld steel plate to top; grind smooth.

B. Finish: Paint.

2.12 FLACK JACKET HANGER RACKS

A. Fabricate racks from metal material specified in this Section according to drawings.

1. Fasteners for attachment to walls specified in this Section according to drawings.
2. Steel Plate: 6 mm thick.
3. Steel Rods: 6 mm.
4. Pipe Sleeve: From similar material for fabrication of pipes.

B. Helmet Shelf: Fabricate from wire fabric.

2.13 BICYCLE RACKS

A. Fabricate from Schedule 40 steel pipe, fully welded together, to lengths indicated.

- B. Fabricate with DN 80 top rails and end posts, DN 40 bottom rails and intermediate posts not more than 1800 mm o.c., and DN 20 vertical separators at approximately 200 mm o.c.
- C. Make top rails 900 mm above pavement/floor and bottom rails 100 mm above pavement/floor.
- D. Fabricate end posts and intermediate posts with 6.4-mm (1/4") thick steel baseplates for bolting to concrete slab. Drill end post baseplates at all 4 corners and intermediate-post baseplates at 2 opposite sides for 12.7-mm (1/2") anchor bolts.
- E. Galvanize bicycle racks after fabrication.
- F. Prime bicycle racks with zinc-rich primer.

2.14 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish metal fabrications after assembly.

2.15 STEEL AND IRON FINISHES

- A. Galvanizing: Hot-dip galvanize items as indicated to comply with applicable standard listed below:
 - 1. ASTM A 123, for galvanizing steel and iron products.
 - 2. ASTM A 153/A 153M, for galvanizing steel and iron hardware.
- B. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with minimum requirements indicated below for SSPC surface-preparation specifications and environmental exposure conditions of installed metal fabrications:
 - 1. Exteriors (SSPC Zone 1B): SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
 - 2. Interiors (SSPC Zone 1A): SSPC-SP 3, "Power Tool Cleaning."
- C. Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized finishes and those to be embedded in concrete, sprayed-on fireproofing, or masonry, unless otherwise indicated. Comply with SSPC-PA 1, "Paint Application Specification No. 1," for shop painting.

2.16 STAINLESS-STEEL FINISHES

- A. Remove tool and die marks and stretch lines or blend into finish.
- B. Grind and polish surfaces to produce uniform, directionally textured, polished finish indicated, free of cross scratches. Run grain with long dimension of each piece.

- C. Bright, Directional Polish: No. 4 finish.
- D. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.

2.17 ALUMINUM FINISHES

- A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
- B. As-Fabricated Finish: AA-M10 (Mechanical Finish: as fabricated, unspecified).
- C. Class I, Clear Anodic Finish: AA-M12C22A41 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker) complying with AAMA 607.1.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing metal fabrications to in-place construction. Include threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws, and other connectors.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- C. Provide temporary bracing or anchors in formwork for items that are to be built into concrete or similar construction.
- D. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
- E. Field Welding: Comply with the following requirements:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

- F. Corrosion Protection: Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood, or dissimilar metals with a heavy coat of bituminous paint.

3.2 INSTALLING BICYCLE RACKS

- A. Anchor bicycle racks to existing construction with expansion anchors. Provide four 12.7-mm bolts at each end post and 2 at each intermediate post.

3.3 SETTING BEARING AND LEVELING PLATES

- A. Clean concrete and masonry bearing surfaces of bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of plates.
- B. Set bearing and leveling plates on wedges, shims, or leveling nuts. After bearing members have been positioned and plumbed, tighten anchor bolts. Do not remove wedges or shims but, if protruding, cut off flush with edge of bearing plate before packing with grout.
 - 1. Use nonshrink grout, either metallic or nonmetallic, in concealed locations where not exposed to moisture; use nonshrink, nonmetallic grout in exposed locations, unless otherwise indicated.
 - 2. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

3.4 INSTALLING MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings, if any.
- B. Anchor supports for operable partitions securely to and rigidly brace from building structure.

3.5 ADJUSTING AND CLEANING

- A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
 - 1. Apply by brush or spray to provide a minimum 0.05-mm dry film thickness.
- B. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Division 9 Section "Painting."
- C. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

END OF SECTION 05500

DIVISION 8 – DOORS AND WINDOWS

SECTION 08010 – GPE WINDOW AND DOOR REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

- A. This Section identifies administrative requirements and applicability of product and installation requirements associated with windows and doors included in OBO's Government Procured Equipment (GPE) program for those items. If the GPE program is applicable for a project, that will be identified in the project Statement of Work or elsewhere in the contract.
- B. Definitions and Scope:
1. GPE Program: A program of the Overseas Buildings Operations (OBO) in which OBO procures security doors and windows in advance of and for the use of upcoming Standard Embassy Design (SED) projects.
 2. Fabricator: This entity is the fabricator of GPE items.
 3. Contractor: This entity is responsible for the design and construction of the overall facility, as well as the installation of the GPE items selected by the Contractor in conformance with the overall requirements of the project.
- C. Related Sections for the GPE Program: The Sections contain requirements that relate to this Section. Note that Part 1 of these sections is applicable for the GPE Program as identified in this section. Note also that the applicability of Part 2 and Part 3 of these sections is identified at the end of this section:
1. Section 08318 – "Forced Entry (FE)/Ballistic Resistant (BR) Door Assemblies." All items in this section are part of the GPE Program.
 2. Section 08584 – "Blast Resistant Structural Muntin Window Systems." All items in this section are part of the GPE Program.
 3. Section 08661 - "Exterior Security Windows" for exterior windows designed for blast resistance and forced entry/ballistic resistance. All items in this section are part of the GPE Program.
 4. Section 08667 - "Interior Security and Teller Windows" for interior windows designed for forced entry/ballistic resistance, but not blast resistance. All items in this section are part of the GPE Program.
 5. Section 08714 – "Door Hardware." Security hardware sets in non-FE/BR doors, and non-security hardware sets, are not part of the GPE Program. All requirements in Section 08714 remain unchanged for items that are not part of the GPE Program.
 6. Section 08800 – General glazing requirements for both security and non-security glazing. General definitions and requirements for installation of glazing within frames apply to windows that are part of the GPE Program.
 7. Section 08845 – "Security Glazing" for blast resistant and/or FE/BR glazing. All items in this section are part of the GPE Program.
 8. Section 11022 – "Vault Doors and Accessories." All items in this section are part of the GPE Program.

1.2 REFERENCES

- A. Fabricator and Contractor: References included in the specifications sections identified under the “Summary” article of this section, in the paragraph on “Related Sections for the GPE Program,” apply to both the Fabricator and Contractor.

1.3 SYSTEM DESCRIPTION AND PERFORMANCE REQUIREMENTS

- A. Fabricator: System descriptions and performance requirements included in the specifications sections identified in the paragraph on “Related Sections for the GPE Program” apply to the Fabricator. They are included for information only for the Contractor, and shall be validated through the COR by the Contractor if the Contractor requires the information.

1.4 SUBMITTALS

- A. General: For each of the specifications sections identified in the paragraph on “Related Sections for the GPE Program,” submit the following for GPE items in accordance with applicable contract clauses. For non-GPE items, the submittal requirements within each of those related sections govern.
 - 1. Fabricator: The Fabricator will submit copies of product data, test reports, maintenance manuals, and installation instructions to the COR for the GPE Program.
 - 2. Contractor: Request one copy of installation instructions of applicable GPE items, as selected by the Contractor, through the project COR for use by the Contractor. The Contractor is not required to submit the installation instruction as part of their construction submittals.
- B. Shop Drawings:
 - 1. Fabricator: The Fabricator will submit hardcopy shop drawings for each GPE item showing manufacturer's design for the item. In addition, they will submit shop drawings in electronic format, including DWG version using AutoCAD 2005. As applicable, they will show subframe attachment anchorages and supports; unit elevations; details including profiles; dimensioning; attachments and connections within GPE items; and GPE provisions for thermal movements water control, and thermal breaks.
 - 2. Contractor: Request two CD-ROMs of electronic version of shop drawings of applicable GPE items, as selected by the Contractor, through the project COR. Submit shop drawings for each GPE item incorporating Fabricator's details for products into the project construction. Provide drawings in accordance with Division 1 requirements for construction submittals. Show interface with building construction and glazing details; attachments, connections and securements of frames to building construction; and provisions for thermal movements and water control in relation to general building construction. All shop drawings shall indicate both the GPE contract number and the project contract number, as well as locations within the project.

1.5 QUALITY ASSURANCE

- A. Requirements by Reference: Quality assurance requirements in the specifications sections identified in the paragraph on “Related Sections for the GPE Program” generally apply to both the Fabricator and Contractor, as modified by this Article.
- B. Definitions: Where the specifications sections identified in the paragraph on “Related Sections for the GPE Program” identify the quality assurance requirement as applying to the supplier, it shall apply to the Fabricator of the GPE item. Where the related sections identify the requirement as applying to the installer, it shall apply to the Contractor.
- C. Alterations: Do not change any material, component, or procedure which could affect GPE unit integrity or performance, after compliance with specified performance requirements has been established and certified, without written acknowledgement and acceptance through the COR by Testing Laboratory, DS/PSD, and OBO/PE/DE/CSB.
- D. Manufacturer’s Technical Representative: Where required in the specifications sections identified in the paragraph on “Related Sections for the GPE Program,” the Contractor shall obtain the services of a Certified FE/BR Installer to assist with the project, as identified in the respective specifications sections. The Contractor should contact the project COR for assistance from the manufacturer in locating a Certified FE/BR Installer.
- E. Preinstallation Conference: Where required in the specifications sections identified in the paragraph on “Related Sections for the GPE Program,” and before beginning installation, the Contractor shall conduct a preinstallation conference with the Manufacturer’s Technical Representative as identified above, the installer for the Contractor, and other interested parties to review procedures, schedules, and coordination of installation with other elements of the Work.
- F. Quality Control Compliance Forms:
 - 1. Fabricator: The Fabricator will complete their own QA/QC documentation.
 - 2. Contractor: The Contractor shall complete the Quality Control compliance forms attached at the end of Specification Section 08318, “Forced Entry (FE)/Ballistic Resistant (BR) Door Assemblies,” to the extent that they relate to the Contractor’s responsibilities.

1.6 IDENTIFICATION SYSTEMS

- A. General: For GPE items, requirements in this Article replace requirements in the same Article of each specification section identified in the paragraph on “Related Sections for the GPE Program.” Each GPE item shall be identified to provide Government with ready reference to original manufacturer to facilitate reorders, replacement parts, service, resolution of complaints, and inventory.
- B. Fabricator: The Fabricator will provide all identification labels for GPE items. These labels will include project-specific door and window numbers. The Contractor is responsible for identifying for the Fabricator, through project-specific door and window schedules, the Fabricator’s GPE number associated with each GPE door and window used in a project.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Requirements by Reference: Delivery, storage, and handling requirements in the specifications sections identified in the paragraph on “Related Sections for the GPE Program” generally apply to the entities as summarized below.
- B. Fabricator:
1. Prior to selection of GPE items by the Contractor and subsequent packing for shipment, store GPE items to prevent edge damage or other damage to assembly resulting from effects of moisture, condensation, temperature changes, direct exposure to sun, and contact with chemical solvents.
 2. Protect systems during transit storage and handling to prevent damage, soiling, and deterioration to project sites, including crating, packaging, packing, marking, and banding.
 3. Provide protection of pre-finished units and window assemblies.
 4. Clearly mark and package sub-frames/embeds.
 5. Permit the Contractor to inspect each assembly before final packing by the Fabricator.
 6. Store the fabricated items at the Fabricator’s storage facilities in the United States.
 7. Once the Contractor selects GPE items for the project, pack each assembly suitable for shipping to the project site. Installation hardware (e.g., anchors and shims) will be included in the same crate as the associated assembly.
 8. The Contractor is responsible for inspecting each assembly before final packing by Fabricator.
 9. Load each crate onto the Contractor’s shipping vehicle at the Fabricator’s storage facility.
- C. Contractor: The Contractor is responsible for shipment of all GPE products from the Fabricator’s warehouse to the project site. The Contractor shall coordinate shipment pickups with the COR in coordination with the Fabricator.

1.8 PROJECT CONDITIONS

- A. Contractor: Project Conditions included in the specifications sections identified in the paragraph on “Related Sections for the GPE Program” apply to the Contractor. It is included for information only for the Fabricator.

1.9 WARRANTY

- A. Fabricator: The Fabricator has responsibilities for extended warranties associated with the GPE Program.
- B. Contractor: The Contractor’s standard project warranty applies for their work on these GPE items.

PART 2 PRODUCTS

2.1 GENERAL

- A. Contract Applicability: Part 2, "Products" for each of the specifications sections identified in the paragraph on "Related Sections for the GPE Program" in this section, applies to work carried out by to the Fabricator for GPE items. For those items, the Contractor shall not rely on the product requirements in Part 2, but shall obtain information on available GPE products from the COR.
1. Trim: Fabricator shall provide all metal trim for doors and windows associated with GPE products. Contractor shall provide stone trim, for those building types with stone cladding, associated with GPE doors and windows. Refer to SED drawings for typical stone trim details.

PART 3 EXECUTION

3.1 GENERAL

- A. Contract Applicability: Part 3, "Execution" for each of the specifications sections identified in the paragraph on "Related Sections for the GPE Program" applies to the Contractor for GPE items. For those items, the "Execution" requirements shall be treated as information only for the Fabricator.

END OF SECTION 08010

SECTION 08110 - STEEL DOORS AND FRAMES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Steel doors.
2. Steel door frames.
3. Stainless-steel doors and frames.
4. Sidelight or borrowed-light frames.
5. Hollow-metal panels and frames.
6. Fire-rated door and frame assemblies.
7. Louvers in doors.

B. Related Sections include the following:

1. Division 4 Section "Unit Masonry Assemblies" for building anchors into and grouting frames in masonry construction.
2. Division 5 Section "Formed-Metal Fabrications" for customized hollow-metal work other than doors, panels, and frames.
3. Division 8 Section "Flush Wood Doors" for wood doors installed in steel frames.
4. Division 8 Section "Sound Control Doors" for acoustical doors with an STC rating of 43 to 52.
5. Division 8 Sections for door hardware and weather stripping.
6. Division 8 Section "Glazing" for glass in doors and sidelights or borrowed lights.
7. Division 9 Section "Gypsum Board Assemblies" for steel stud and gypsum board partitions.
8. Division 9 Section "Painting" for field painting primed doors and frames.

1.2 DEFINITIONS

- A. Uncoated steel sheet thickness is indicated as the minimum thickness according to HMMA 803, Steel Tables.
- B. Metallic-coated steel sheet thickness is indicated as the minimum thickness of the uncoated base metal.
- C. Stainless-steel sheet thicknesses are indicated as the specified thickness for which over and under thickness tolerances apply according to ASTM A 480/A 480M.

1.3 SUBMITTALS

- A. Product Data: Include construction details, material descriptions, core descriptions, label compliance, sound and fire-resistance ratings, and finishes for each type of door and frame specified.
- B. Shop Drawings: Show fabrication and installation of doors and frames. Include details of each frame type, elevations of door design types, conditions at openings, details of construction, dimensions of profiles and hardware preparation, location and installation requirements of door and frame hardware and reinforcements, location and thickness of lead lining, and details of joints and connections. Show anchorage and accessories.
 - 1. Electric Hardware Devices: Indicated routing of electrical conduit for electric hardware devices.
 - 2. Security System Components: Indicate all cutouts required to metal door and frame components to accept security system components.
- C. Door Schedule: Submit schedule of doors and frames using same reference numbers for details and openings as those on Drawings.
 - 1. Coordinate glazing frames and stops with glass and glazing requirements.
- D. Product Certificates: Signed by manufacturers of doors certifying that products furnished comply with or exceed the acceptance criteria of ANSI A250.4 for Level A doors.
- E. Oversize Construction Certification: For door assemblies required to be fire rated and exceeding limitations of labeled assemblies, submit certification of a testing agency acceptable to authorities having jurisdiction that each door and frame assembly has been constructed to comply with design, materials, and construction equivalent to requirements for labeled construction.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A firm experienced in manufacturing custom steel doors and frames similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- B. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 252.
 - 1. Test Pressure: Test at atmospheric pressure.
 - 2. Oversize Fire-Rated Door Assemblies: For units exceeding sizes of tested assemblies, provide certification by a testing agency acceptable to authorities having jurisdiction that doors comply with standard construction requirements for tested and labeled fire-rated door assemblies except for size.
 - 3. Temperature-Rise Rating: If indicated, provide doors that have a temperature-rise rating of 250 deg C maximum in 30 minutes of fire exposure.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver doors and frames palleted, wrapped, or crated to provide protection during transit and Project site storage. Do not use nonvented plastic.
- B. Inspect doors and frames, on delivery, for damage. Minor damage may be repaired provided refinished items match new work and are approved by COR; otherwise, remove and replace damaged items as directed.
- C. Store doors and frames under cover at building site. Place units on minimum 100-mm-high wood blocking. Avoid using nonvented plastic or canvas shelters that could create a humidity chamber. If wrappers on doors become wet, remove cartons immediately. Provide minimum 6-mm spaces between stacked doors to permit air circulation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide doors and frame by one of the following:
 - 1. Steel Doors and Frames:
 - a. Amweld Building Products, Inc.
 - b. Ceco Door Products.
 - c. Curries Company.
 - d. Deronde Products, Inc.
 - e. Firedoor Corporation of Florida.
 - f. Fleming: S. W. Fleming Limited.
 - g. Steelcraft; a division of Ingersoll-Rand.
 - h. Tex-Steel Corporation.
 - 2. Stainless-Steel Doors and Frames:
 - a. Curries Company.
 - b. Deronde Products, Inc.
 - c. Fleming: S. W. Fleming Limited.
 - d. Next Door Company.
 - e. Steelcraft; a division of Ingersoll-Rand.
 - f. Tex-Steel Corporation.

2.2 MATERIALS

- A. Hot-Rolled Steel Sheets: ASTM A 569/A 569M, CS (commercial steel), Type B; free of scale, pitting, or surface defects; pickled and oiled.
- B. Cold-Rolled Steel Sheets: ASTM A 366/A 366M, CS (commercial steel), Type B.

- C. Metallic-Coated Steel Sheets: ASTM A 653/A 653M, CS (commercial steel), Type B; with Z180 zinc (galvanized) or ZF180 zinc-iron-alloy (galvannealed) coating.
- D. Stainless-Steel Sheets Where Required for Finish: AISI Type 302/304, complying with ASTM A 167, commercial quality, No. 4 directional polish. Finish is intended to match that of those Forced Entry/Ballistic Resistant (FE/BR) doors in Section 08318 which have stainless steel finish in cases where comparable FE/BR and non-FE/BR doors are seen in relation to each other. (#73738, D. Hammes, 1/20/06)
- E. Inserts, Bolts, and Fasteners: Manufacturer's standard units. Where items are to be built to exterior walls, zinc coat according to ASTM A 153/A 153M, Class C or D as applicable.
- F. Filler: Sound deadening and heat-retarding mineral fiber insulating material. At doors required to have temperature rise rating provide mineral fiberboard core.
- G. Glazing and Glazing Felt: Clear Wire Glass: Type II, Class 1, Form 1, with pattern M1 (diamond) wire mesh where shown.
 - 1. Fire Resistance Rated Wire Glass: Provide wire glass products that are identical to those tested per ASTM E163 (UL 9) and are labeled and listed by UL or other testing and inspecting agency acceptable to authorities having jurisdiction.
- H. Lead Lining: Rolled sheet lead conforming to requirements of FS QQ-L-201, Grade C (Chemical Lead) in sizes and thicknesses indicated.

2.3 DOORS

- A. General: Provide flush-design doors, 44 mm thick, of seamless hollow construction, unless otherwise indicated. Construct doors with smooth, flush surfaces without visible joints or seams on exposed faces or stile edges. Exterior doors to be IGGA (1.5mm) galvanized interior doors 18 GA (1.2mm).
 - 1. Visible joints or seams around glazed or louvered panel inserts are permitted.
 - 2. For single-acting swing doors, bevel both vertical edges 3 mm in 50 mm.
 - 3. For double-acting swing doors, round vertical edges with 54-mm radius.
 - 4. Exterior doors to have flush tops.
- B. Metallic Core Construction: Provide the following core construction welded to both door faces:
 - 1. Continuous Truss-Form Inner Core: 0.33-mm- thick steel reinforcement spot welded to face sheets a maximum of 75 mm o.c. vertically and horizontally.
- C. Fire Door Cores: As required to provide fire-protection and temperature-rise ratings indicated.
- D. Astragals: As required by NFPA 80 to provide fire ratings indicated.
- E. Top and Bottom Channels: Spot weld metal channel not less than thickness of face sheet to face sheets not more than 150 mm o.c.

1. Reinforce tops and bottoms of doors with inverted horizontal channels of same material as face sheet so flanges of channels are even with bottom and top edges of face sheets.
 2. For exterior doors, close bottom edge with metallic-coated steel closing channel and top edge with filler channel of same material, so webs of channels are flush with bottom and top door edges.
- F. Hardware Reinforcement: Fabricate reinforcing plates from the same material as door to comply with the following:
1. Hinges and Pivots: 4.2 mm thick by 38 mm wide by 150 mm longer than hinge, secured by not less than six spot welds.
 2. Lock Face, Flush Bolts, Closers, and Concealed Holders: 2.3 mm thick.
 3. All Other Surface-Mounted Hardware: 1.3 mm thick.
- G. Interior Doors: Fabricate face sheets of doors from two 1.06-mm- thick, cold-rolled, stretcher-leveled steel sheets and other metal components from hot- or cold-rolled steel sheets.
- H. Exterior Steel Doors: Fabricate face sheets of doors from two 1.3-mm-thick, stretcher - leveled, metallic-coated steel sheets. Provide weep-hole openings in bottom of doors to permit entrapped moisture to escape. Seal joints in top edges of doors against water penetration.
- I. Stainless-Steel Doors: Fabricate face sheets of doors from two 1.3-mm-thick, stainless-steel sheets permanently and continuously bonded to nonmetallic cores or welded to rigid, internal stainless-steel core.
1. Internal Construction: Vertically reinforced with 1.3-mm-thick, stainless-steel sheet sections, spaced not more than 150 mm o.c., extended full-door height, and spot welded to both face sheets at not more than 125 mm o.c.
 2. Reinforce tops and bottoms of doors with 1.3-mm-thick, stainless-steel horizontal channels spot welded a maximum of 150 mm o.c. to door faces.
 - a. For exterior doors, close bottom edge with minimum 1.3-mm-thick, stainless-steel closing channel and top edge with same thickness of stainless-steel filler channel, so webs of channels are flush with bottom and top door edges. Provide weep-hole openings in bottom of doors to permit entrapped moisture to escape. Seal joints in top edges of doors against water penetration.
- J. Electrical Requirements: Provisions for installation of electrical items specified elsewhere; arrange so that wiring can be readily removed and replaced.
1. Security System Components: Provide all cutouts and reinforcements required for metal doors to accept security system components.
- K. Doors With Electric Hinges: General: Provide with metal conduit raceway to permit wiring from electric hinge to other electric door hardware.
1. Hinge Location: Center for doors less than 2286 mm or 2nd hinge from door bottom for doors greater than 2286 mm; top or bottom electric hinge locations shall not be permitted.

2.4 PANELS

- A. Provide panels of same materials, construction, and finish as specified for doors.

2.5 FRAMES

- A. Fabricate frames of full-welded unit construction, with corners mitered, reinforced, and continuously welded full width of mitre. Knockdown frames are acceptable for drywall construction only.
 - 1. For exterior use, form frames from 1.9-mm-thick, metallic-coated steel sheets galvanized.
 - 2. For interior use, form frames from cold- or hot-rolled steel sheet of the following thicknesses:
 - a. Openings up to and Including 1200 mm Wide: 1.5 mm.
 - b. Openings More than 1200 mm Wide: 1.9 mm.
 - 3. For stainless-steel doors, form frames from 1.6-mm-thick, stainless-steel sheets with No. 4 finish.
 - 4. Lead Lined Frames: 1.519 mm thick steel.
- B. Hardware Reinforcement: Fabricate from same material as frame. Minimum thickness of steel reinforcing plates for the following hardware:
 - 1. Hinges and Pivots: 4.2 mm thick by 38 mm wide by 150 mm longer than hinge, secured by not less than six spot welds.
 - 2. Strikes, Flush Bolts, and Closers: 2.3 mm.
 - 3. Surface-Mounted Hold-Open Arms and Panic Devices: 2.3 mm.
- C. Mullions and Transom Bars: Provide closed or tubular mullions and transom bars where indicated. Fasten mullions and transom bars at crossings and to jambs by butt welding. Reinforce joints between frame members with concealed clip angles or sleeves of same metal and thickness as frame.
 - 1. Provide false head member to receive lower ceiling where frames extend to finish ceilings of different heights.
- D. Head Reinforcement: Where installed in masonry, leave vertical mullions in frames open top for grouting.
- E. Supports and Anchors: After fabricating, galvanize units to be built into exterior walls according to ASTM A 153/A 153M, Class B.
- F. Jamb Anchors: Weld jamb anchors to frames near hinges and directly opposite on strike jamb as required to secure frames to adjacent construction.

1. Masonry Construction: Adjustable, flat, corrugated, or perforated T-shaped anchors to suit frame size; formed of same material as frame; not less than 1.3 mm thick; with leg not less than 50 mm wide by 250 mm long. Furnish at least the number of anchors per jamb according to the following frame heights:
 - a. Two anchors per jamb up to 1500 mm in height.
 - b. Three anchors per jamb from 1500 to 2250 mm in height.
 - c. Four anchors per jamb from 2250 to 2400 mm in height.
 - d. One additional anchor per jamb for each 600 mm or fraction thereof more than 2400 mm in height.
 2. Metal-Stud Partitions: Insert type with notched clip to engage metal stud, welded to back of frames, formed of same material as frame, not less than 1.0 mm thick. Provide at least the number of anchors for each jamb according to the following heights:
 - a. Three anchors per jamb up to 1500 mm in height.
 - b. Four anchors per jamb from 1500 to 2250 mm in height.
 - c. Five anchors per jamb from 2250 to 2400 mm in height.
 - d. One additional anchor per jamb for each 600 mm or fraction thereof more than 2400 mm in height.
 3. In-Place Concrete or Masonry: Anchor frame jambs with minimum 9-mm-diameter concealed bolts into expansion shields or inserts 150 mm from top and bottom and 650 mm o.c., unless otherwise indicated. Reinforce frames at anchor locations. Except for fire-rated openings, apply removable stop to cover anchor bolts, unless otherwise indicated.
- G. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, formed of same material as frame, 1.7 mm thick, as follows:
1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners, welded to bottom of jambs and mullions.
 2. Separate Topping Concrete Slabs: Adjustable type with extension clips, allowing not less than 50-mm height adjustment. Terminate bottom of frames at finish floor surface.
- H. Head Anchors: Provide two head anchors for frames more than 1066 mm wide and mounted in steel-stud walls.
- I. Head Strut Supports: Provide 9-by-50-mm vertical steel struts extending from top of frame at each jamb to supporting construction above, unless frame is anchored to masonry or to other structural support at each jamb. Bend top of struts to provide flush contact for securing to supporting construction above. Provide adjustable wedged or bolted anchorage to frame jamb members.
- J. Structural Reinforcing Metals: Provide as part of frame assembly, where indicated at mullions, transoms, or other locations to be built into frame.
- K. Head Reinforcement: For frames more than 1200 mm wide in masonry wall openings, provide continuous steel channel or angle stiffener, 2.3 mm thick for full width of opening, welded to back of frame at head.

- L. Spreader Bars: Provide removable spreader bar across bottom of frames, tack welded to jambs and mullions.
- M. Rubber Door Silencers: Except on weather-stripped doors, drill stop in strike jamb to receive three silencers on single-door frames and drill head jamb stop to receive two silencers on double-door frames. Install plastic plugs to keep holes clear during construction.
- N. Plaster Guards: Provide 0.4-mm-thick plaster guards or dust-cover boxes of same material as frame, welded to frame at back of hardware cutouts to close off interior of openings and prevent mortar or other materials from obstructing hardware operation.
- O. X-Ray Door Frame Struts and Lead Linings:
 - 1. Struts: Provide vertical steel struts, 9.525 mm x 50 mm extended from top of frame at each jamb to supporting structural construction above, unless frame is set in masonry or attached directly to concrete. Bend top of struts at a right angle and attach to supporting structural construction above by bolting. Use inserts or expansion anchors into supporting structural construction above. Provide bolted attachment of struts to frame at jambs to permit height adjustment during installation. Adapt jamb anchor clips at struts to permit adjustment.
 - 2. Lead Lining: All X-ray door frames shall be provided with a minimum 25 mm x 50 mm x 4.76 mm continuous structural angle welded to the full length of the hinge, head, and strike jambs. The door frame and structural angle shall then receive a single 1.5 mm thickness of lead sheet having a width to provide an effective lead lap with the lead of the adjoining wall construction lead shielding materials. Lead sheet shall be factory installed as a continuous lining formed to the contour of the door frame and structural angle and around areas prepared to receive hardware. Lead lining shall be held in place with retaining clip devices.

2.6 LOUVERS

- A. Door Louvers: Fabricate louvers and mount flush into doors without overlapping moldings on surface of door face sheets. Provide internal support as recommended by louver manufacturer. Prime paint steel louvers after fabrication.
 - 1. Interior Louvers: Sightproof, stationary type, constructed of inverted Y-shaped blades formed of same material as door.
 - a. Steel: 0.8 mm thick.
 - b. Stainless Steel: 0.95 mm thick.

2.7 STOPS AND MOULDINGS

- A. Provide stops and moldings around solid, glazed, and louvered panels where indicated.
- B. Form fixed stops and moldings integral with frame, unless otherwise indicated.

- C. Provide removable stops and moldings where indicated or required, formed of 0.8-mm-thick steel sheets matching steel frames. Secure with countersunk flat or oval head machine screws spaced uniformly not more than 300 mm o.c. Form corners with butted hairline joints.
- D. Coordinate rabbet width between fixed and removable stops with type of glass or panel and type of installation indicated.

2.8 FABRICATION

- A. Fabricate doors and frames rigid, neat in appearance, and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles. Weld exposed joints continuously; grind, fill, dress, and make smooth, flush, and invisible. Where practical, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory assembled before shipment, to assure proper assembly at Project site.
 - 1. Fabricate doors to comply with acceptance criteria of ANSI A250.4 for a Level A door.
- B. For doors with metallic core constructions, weld cores to both door face sheets.
- C. Exposed Fasteners: Provide countersunk flat or oval heads for exposed screws and bolts, unless otherwise indicated.
- D. Thermal-Rated (insulating) Assemblies: At exterior locations and elsewhere as shown or scheduled, provide doors and frames fabricated as thermal-insulating assemblies and tested according to STM C 236 or ASTM C 976.
 - 1. Provide thermal-rated assemblies with U-factor of 1.7 W/sq. m x K, unless otherwise indicated.
- E. Sound-Rated (Acoustical) Assemblies: Where shown or scheduled, provide door and frame assemblies fabricated as sound-reducing type, tested according to ASTM E 1408, and classified according to ASTM E 413.
 - 1. Provide acoustical assemblies with STC sound ratings of 33 or better, unless otherwise indicated.
- F. Hardware Preparation: Prepare doors and frames to receive hardware, including cutouts, reinforcement, mortising, drilling, and tapping, according to final hardware schedule and templates provided by hardware supplier. Comply with applicable requirements of ANSIA115 Series specifications for door and frame preparation for hardware.
 - 1. Reinforce doors and frames to receive surface-applied hardware. Drilling and tapping for surface-applied hardware may be done at Project site.
 - 2. Locate hardware as indicated or, if not indicated, according to HMMA 831, "Recommended Hardware Locations for Custom Hollow Metal Doors and Frames."

2.9 GLAZED LIGHT FRAMES

- A. Form glazed light frames to the profiles shown. Provide anchors at jambs same as for door frames. Provide closed mullion sections same as for door frames. Fabricate from 1.519 mm thick steel for interior work.
- B. Miter, fit, and weld corners of panel moldings for glass panels in sidelights and borrowed lights to form continuous frame around panels. Provide non-removable panel moldings on the exterior. Secure removable moldings with not less than No. 6 x 32 Phillips oval-head countersunk machine screws at 300 mm on center.
- C. Provide continuous felt strips cemented in place, on all bed and stop surfaces for interior light frames to be glazed so that at no time does metal touch glass.
 - 1. Glaze light frames with wire glass.

2.10 BULLET RESISTANT ACOUSTICAL DOORS

- A. Provide special bullet resistant acoustical doors fabricated from sheet steel where shown with Z180 zinc (galvanized) or ZF180 zinc-iron-alloy (galvannealed) coating or scheduled, compete with frames. Provide a Sound Transmission Class of 49, as determined in accordance with ASTM E413, for each door, threshold and frame assembly when installed. The door and frame assembly shall be designed to withstand a commercially loaded handgun or rifle ammunition, including armor piercing ammunition, having a muzzle velocity not to exceed 3,500 feet per second and maximum energy of 5,250 foot pounds. The assembly shall be complete with necessary gasketing, thresholds and sound seals to achieve the specified STC rating and bullet resistance. Doors shall be designed for use with standard builder's hardware as scheduled.
- B. Basis of Design: Moduline APR Type Single Leaf Personnel Doors Modified to comply with the requirements; Industrial Acoustics Company, or equal.

2.11 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for cleaning, treating, priming, and when specified, finishing.
- B. Finish products specified in this Section after fabrication.

2.12 METALLIC-COATED STEEL FINISHES

- A. Surface Preparation: Clean surfaces with nonpetroleum solvent so surfaces are free of oil and other contaminants. After cleaning, apply a conversion coating suited to the organic coating to be applied over it. Clean welds, mechanical connections, and abraded areas, and apply galvanizing repair paint specified below to comply with ASTM A 780.
 - 1. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds in steel, complying with SSPC-Paint 20.

- B. Factory Priming for Field-Painted Finish: Apply shop primer specified below immediately after surface preparation and pretreatment. Apply a smooth coat of even consistency to provide a uniform dry film thickness of not less than 0.02 mm.
 - 1. Shop Primer: Manufacturer's or fabricator's standard, fast-curing, lead- and chromate-free, primer complying with ANSI A 224.1 acceptance criteria; recommended by primer manufacturer for zinc-coated steel; compatible with substrate and field-applied finish paint system indicated; and providing a sound foundation for field-applied topcoats despite prolonged exposure.

2.13 STEEL SHEET FINISHES

- A. Surface Preparation: Clean surfaces to comply with SSPC-SP 1, "Solvent Cleaning"; remove dirt, oil, grease, or other contaminants that could impair paint bond. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 3, "Power Tool Cleaning," or SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
- B. Factory Priming for Field-Painted Finish: Apply shop primer specified below immediately after surface preparation and pretreatment. Apply a smooth coat of even consistency to provide a uniform dry film thickness of not less than 0.02 mm.
 - 1. Shop Primer: Manufacturer's or fabricator's standard, fast-curing, corrosion-inhibiting, lead- and chromate-free, universal primer complying with ANSI A 224.1 acceptance criteria; compatible with substrate and field-applied finish paint system indicated; and providing a sound foundation for field-applied topcoats despite prolonged exposure.

2.14 STAINLESS-STEEL FINISHES

- A. Remove tool and die marks and stretch lines or blend into finish. Grind and polish surfaces to produce uniform, directionally textured polished finish indicated, free cross scratches. Run grain with long dimension of each piece.
 - 1. Bright, Directional Polish: No. 4 finish.
 - 2. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General: Install doors and frames according to DHI A115.IG and manufacturer's written instructions.
- B. Frames: Install frames for doors, transoms, sidelights, borrowed lights, and other openings, of size and profile indicated.

1. Set masonry anchorage devices where required for securing frames to in-place concrete or masonry construction.
 - a. Set anchorage devices opposite each anchor location according to details on Shop Drawings and anchorage device manufacturer's written instructions. Leave drilled holes rough, not reamed, and free of dust and debris.
 2. Floor anchors may be set with powder-actuated fasteners instead of masonry anchorage devices and machine screws, if so indicated on Shop Drawings.
 3. Placing Frames: Set frames accurately in position; plumb; align, and brace securely until permanent anchors are set. After wall construction is complete, remove temporary braces and spreaders, leaving surfaces smooth and undamaged.
 - a. At existing concrete or masonry construction, set frames and secure in place with machine screws and masonry anchorage devices.
 - b. At fire-rated openings, install frames according to NFPA 80.
 - c. Field splice only at approved locations. Weld, grind, and finish as required to conceal evidence of splicing on exposed faces.
 - d. Remove spreader bars from each frame only after frame is properly set and secured.
 - C. Doors: Fit non-fire-rated doors accurately in their respective frames, with the following clearances:
 1. Jambs and Head: 2 mm.
 2. Meeting Edges, Pairs of Doors: 3 mm.
 3. Bottom: 9 mm, if no threshold or carpet.
 4. Bottom: 3 mm, at threshold or carpet.
 - D. Fire-Rated Doors: Install with clearances as specified in NFPA 80.
 - E. Smoke Control Doors: Install according to NFPA 105.
- 3.2 ADJUSTING AND CLEANING
- A. Final Adjustments: Check and readjust operating hardware items just before final inspection. leave work in complete and proper operating condition. Remove and replace defective work, including doors or frames that are warped, bowed, or otherwise unacceptable.
 - B. Prime-Coat Touchup: Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touchup of compatible air-drying primer.
 - C. Stainless-Steel Touchup: Immediately after erection, smooth any abraded areas of stainless steel and polish to match undamaged finish.

END OF SECTION 08110

SECTION 08318 - FORCED ENTRY (FE) / BALLISTIC RESISTANT (BR) DOOR ASSEMBLIES

PART 1 - GENERAL

1.1 SUMMARY

- A. The extent of forced-entry resistant (FE) and ballistic resistant (BR) door assemblies required for the Project is indicated on Construction Drawings, and in Door/Frame/Hardware schedules, including construction, profiles, swing, sizes, hardware, accessories, devices, and locations.
- B. The applicability of administrative, product, and installation requirements in this section for projects involving OBO's Government Procured Equipment (GPE) program for FE/BR and blast resistant products is identified in Section 08010, "GPE Door and Window Requirements." Section 08010 is only included in projects which use the GPE program. If the GPE Program is applicable for a project, that will be identified in the project Statement of Work or elsewhere in the project contract.
- C. Related Sections include the following:
 - 1. List below only products, construction, and equipment that the reader might expect to find in this Section but are specified elsewhere.
 - 2. Division 5 Sections "Metal Fabrications" for steel supports.
 - 3. Division 8 Sections for doors not designated for special security performances.
 - 4. Division 8 Section "Security Hardware" for hardware to be installed as work of this Section.
 - 5. Division 8 Section "Glazing."
 - 6. Division 8 Section "Security Glazing."
 - 7. Other sections of these specifications for interface of door hardware and device units, with alarm/security/safety/access/monitoring systems; not work of this section.

1.2 PERFORMANCE REQUIREMENTS

- A. General: Fabricate and install FE/BR door assemblies to achieve indicated levels of resistance. Extend resistance to include anchorages, interfaces with adjoining substrates, and hardware. For each performance identified below, provide specific performance ratings, also referred to as Government Code numbers, as indicated in Table 1.2.
 - 1. Door Composition.
 - 2. Fire-rated assemblies: Where indicated for fire resistance, provide flush steel doors-and-frame units; comply with NFPA 80, Standard for Fire Doors and Windows. Provide units that have been tested by recognized testing agency in accordance with NFPA No. 252 and ASTM E 152.

3. Forced-Entry (FE) resistant assemblies: Where door assembly is shown or scheduled as FE, provide door manufacturer's material and fabrication for panels, inserts, hardware, devices, and framing of units for rating categories established by Physical Security Division of Bureau of Diplomatic Security (DS/PSP/PSD):

4. Ballistic resistant (BR) assemblies: Where door assembly is shown or scheduled as BR, provide door manufacturer's materials and fabrication for panel, inserts, and framing of unit for rating categories established by DS/PSP/PSD:

TABLE 1.2 – DOOR CODES

DOS CODE	1 st DIGIT (Door Composition)	2 nd DIGIT (Fire Rating)	3 rd DIGIT (Forced Entry Rating)	4 th DIGIT (Ballistic Resistance Rating)
1	Transparent (various sized lites)	None	None	None
2	Steel or Hollow Metal	1.5 hours (Class B, Class D at exterior) with 30- min. temp. rise limited to 121 deg. C (250 deg. F)	15 minutes	Submachine gun (9mm)
3	Solid Core Wood (Stave or Particle)	3 hours (Class A) with 30-min. temp. rise limited to 121 deg. C (250 deg. F)	60 minutes	Rifle 5.56 & 7.62 NATO
4	Hollow Metal with Mineral Core	45 minutes (Class C) with 30-min. temp. rise limited to 121 deg. C (250 deg. F)	5 minutes	Armor-Piercing (.30-06)
5	Various Non-metal Skins with Mineral Core	20 minutes	NOT USED	NOT USED
6	NOT USED	1 hour	NOT USED	NOT USED

1.3 SUBMITTALS

- A. Product data for each element of work, whether purchased from other manufacturers or provided as door Fabricator's standard production. Include data substantiating that products comply with requirements of these specifications.

- B. Manufacturer's standard color chart.

- C. Manufacturer's Certifications:
1. Certification of Inspection and Shipment: Use form available at end of this Section.
 2. Letter Indicating Use of Certified Products: Letter from manufacturer indicating the products have been certified by Bureau of Diplomatic Security (DS) or by ASTM and UL in accordance with article on "Manufacturers" in this Section.
 3. Letter Indicating Coordination of Automatic Door Operators: Letter from manufacturer indicating that automatic door operators for handicap compliance have been fully designed by and coordinated with the hardware supplier for the width and weight of each applicable door, that the operator controls and equipment are sized adequately given the location of the control box and its relationship to the door, and is fully compliant with OBO International Codes Supplement (OBO-ICS) IBC accessibility and fire resistance construction related to egress.
- D. Manufacturer's Inspection Reports: Use forms are available at end of this Section.
- E. Certificates of Compliance: Completed certificates of compliance documenting that all FE/BR door assemblies have been installed per the contract requirements and construction documents.
- F. Shop drawings showing each dimensioned detail of each door assembly, including performance rating, swing, hardware set, and adjacent construction. Provide drawings on B-size (297 mm x 420 mm) sheets. After final modifications and corrections have been incorporated into the drawings, submit drawings as AutoCAD files with .DWG extension. Show the following:
1. Cover sheet: Include manufacturer's name, address, telephone, and facsimile numbers; customer and address; project location; contract or purchase order number; and submittal release record.
 2. Unit information:
 - a. Manufacturer's model number.
 - b. Government code.
 - c. Mark (door no.).
 - d. Door/frame finish.
 - e. Door type.
 - f. Government or ASTM/UL certification number.
 - g. Government or ASTM/UL certification number for glazing, if different from door certification.
 - h. Government certification number for deal tray, if different from door certification.
 3. Elevation Drawings: Show typical door exterior elevations at not less than 1:20 scale.
 - a. Rough opening dimensions.
 - b. Door opening dimensions.
 - c. Frame opening dimensions.
 - d. Vision opening dimensions.
 - e. Substrate/rough opening material.
 - f. Finished floor.
 - g. Sill condition.

- h. Undercut for carpet.
 - i. Weatherstripping.
 - j. Manufacturer's name and reference numbers for primer and finish paint, including number of coats applied.
 - k. Door class (fire) rating: rated or non-rated.
 - l. Door and frame gauge thickness.
 - m. Separate steel sub-frames/embeds (number and list).
 - n. Detail symbols.
 - o. Hardware and hardware symbols.
 - p. Electrical access, including terminal strips.
4. Plan Drawings:
- a. Relate to elevation on drawing.
 - b. Identify "Attack" and "Protected" sides.
 - c. Identify door swing (i.e., RH, LH, RHRB, LHRB).
 - d. Provide key on drawings.
 - e. Indicate room space numbers taken from Construction Drawings.
5. Details: Show section at 1:5 scale of members indicating construction, size, and thickness of components, frame profile, anchorage, steel sub-frames/embeds, continuous shim plates (where applicable), location of conduit entry into both sub-frame and door frame, threshold configuration, thumbturn lock guards, vision panel together with connections, fasteners, shims, sealant, backer rods, and means of separating dissimilar metals. Details shall be on separate sheets from plan and elevation drawings.
6. General Product Information: Include notes sheet, miscellaneous materials specifications, abbreviations, finish/paint system, legend, and glazing specifications.
7. Breakdown of Product Line Items:
- a. If Manufacturer produces one contract line item as several parts (e.g., door with transom and sidelights), they shall break out items on drawings. Each item shall be a subdivision of that product line item number.
8. Installation instructions shall cite all anchorage components, including complete description of anchors, as well as installation criteria such as drilling specifications into concrete or masonry, torque requirements, minimum edge distance, spacing, etc. For sub-frame attachment to concrete, instructions shall include alert to installers to avoid cutting rebar during anchor installation.
9. Installation instructions shall be customized for each type of application.

1.4 QUALITY ASSURANCE

- A. Quality Control for Forced-Entry/Ballistic Resistant (FE/BR) Products: Certificates for fabricated and assembled FE/BR products specified in this Section shall follow quality control procedures established by the Government. Forms for compliance are found at the end of this Section.
- B. Testing Laboratory Qualifications: For compliance with non-security performance requirements on security door assemblies of this Section, use only those testing laboratories, which have successfully demonstrated to COR that they have experience and capabilities needed to satisfactorily conduct required tests.
- C. Installer Qualification Data: Submit resumes of all installers documenting the installers have installed FE/BR door assemblies for a DOS project within the last 5 years. The resume must include at least 3 references (including contract information) that can provide verification that the installer has the expertise required to perform a successful installation. The installer's qualifications must be approved COR with input from OBO/CFSM/SM physical security engineer. Each installer or installation team must be certified by the manufacturer as being capable of properly installing the FE/BR products. The installer must provide written documentation to the COR that the installation team is certified in their products installation.
- D. Manufacturer's Technical Representative: For new construction and renovation projects with FE/BR products, the FE/BR supplier shall appoint a manufacturer's technical representative to the project. The manufacturer's technical representative shall have the following responsibilities:
 - 1. Pre-Installation Conference: Before beginning installation of the FE/BR assemblies, the manufacturer's technical representative shall conduct a pre-installation conference at the Project site with the installation sub-contractor, the electrical sub-contractor, the COR, and other interested parties to review installation procedures and manuals, schedules, and coordination of the FE/BR-assembly installation with other elements of the Work.
 - 2. Training: The manufacturer's technical representative shall provide the crew, which is to actually perform the installations of the FE/BR assemblies with a minimum of 16 hours of on-site, hands-on training before the installation of the first FE/BR door. The manufacturer's technical representative shall also instruct the crew on preventive measures which must be taken to protect the FE/BR assemblies from damage during construction.
 - 3. Inspection: The manufacturer's technical representative shall observe and advise the crew during their installation of the first three FE/BR doors. Upon completion of the installation of each of the three initial FE/BR doors, the manufacturer's technical representative shall inspect the work and direct the crew in any correction or modifications required for acceptable performance of the units. For unique site conditions, the manufacturer's technical representative shall also be responsible for observing and inspecting the installation of FE/BR doors, beyond the initial three doors, as necessary to ensure that the installation crew is adequately prepared for installation.
 - 4. Additional Assistance: The manufacturer's technical representative shall provide the General Contractor any additional advice, instruction, training, supervision, or inspection required to enable the General Contractor to complete the installation certification described below, and to fully train the Embassy staff in the proper operation and maintenance of the FE/BR assemblies.

- E. Certification by General Contractor: Prior to final completion, the General Contractor shall provide to the COR a certification that the FE/BR materials have been installed in accordance with the manufacturer's instructions, these specifications and are operational. Use Certificates of Compliance forms at end of this Section. Deviation from these requirements identified in this form is only permitted with the written approval of COR with input from OBO/CFSM/SM physical security engineer. Specifically, the General Contractor's certification shall include verification that:
1. The manufacturer's technical representative was on site during the initial stages of installation and for site-specific unique conditions as required.
 2. The manufacturer's technical representative was on site during the initial stages of installation and for site-specific unique conditions as required.
 3. Each embed plate or sub-frame has been installed level, plumb and square.
 4. All embed plate assemblies must have been factory welded together.
 5. All units with glazing have been pre-glazed at the factory.
 6. Employees performing the installation meet the specified training and experience qualifications.
 7. No part of the forced entry lock (FEL) has been altered including but not limited to grinding, cutting or re-welding any part of the FEL strike, strike plate (steel couple with vertical slot welded to the frame) and strike plate receiver (vertical slot in door leaf). No part of the FE/BR door has been altered. The only acceptable fix for defective or altered parts is to unbolt the altered piece and replace altered piece in its entirety.
 8. Door frame bolt/screw horizontal slotted holes are 16 mm x 35 mm (5/8" x 1-1/4") round access holes. Washer diameters are 27 mm so that 4mm of the slotted hole will be visible on each side of the washer. This configuration has been inspected and it has been confirmed that the bolts are centered in the slotted holes.
 9. All temporary bolts have been replaced with permanent bolts.
 10. All frame bolts have been torqued to exactly 47.5 Nm (35 ft./lbs.). Shims have been inserted at all bolt locations.
 11. Frame bolts/screws are 12 mm x 40 mm socket head cap screws with 3mm x 27 mm (1/8" x 1-1/6") diameter grade 8 or equivalent class 10.9 or 12.9 washers.
 12. All FE/BR product bolts, screws and anchors are metric products.
 13. No finish materials overlap the door frame/sub-frame and ballistic trim bars unless the finish materials can be easily removed and reinstalled. Any overlapping finish work (i.e. metal, wood, stone, etc.) must be capable of removal without damaging the door frame and surrounding finishes. Door and frame are installed such that removal of the door and frame is possible without demolishing the finishes and trim and must the door is capable of future adjustments of 6-mm in or out of the opening.

14. Any cladding that covers the door frame bolt/screw access holes has either access holes with cap plugs or is attached with screws for easy removal. Cap plugs and cladding for each door have been bagged and won't be installed until after the final QA inspection has been conducted by the OBO/CFSM/SM physical security engineer.
15. The manufacturer and installer must ensure any decorative cladding around the electro magnetic lock on the door frame will allow the lock position to be adjusted in both directions.
16. At each door assembly, there is a continuous minimum gap between the door leaf and the door frames.
17. All access plates for each door have been installed as indicated in the approved shop drawings.
18. Any continuous hinges with squeaks have been replaced. Field lubrication of the hinge as a solution for eliminating squeaks is not acceptable.
19. Each door frame head has been installed level and the non-hinge side jamb has been installed plumb and square.
20. Each lockset, deadbolt and panic exit device is able to fully engage and freely operate.
21. On doors with panic hardware, the panic exit device strike plate has been installed in a location that will eliminate any door leaf bounce on the frame.
22. All door assembly frames, in large multi-unit elevations, have been separated from other FE or FE/BR product frames with a structural steel tube, which will allow for future door frame adjustments.
23. Thresholds do not exceed specified limits, as indicated in the approved shop drawings.
24. Each door closer has been installed and adjusted in accordance with the manufacturer's instructions.
25. Automatic door operators have been adjusted as appropriate in accordance with the manufacturer's instructions to meet ADA-ABA and appropriate fire codes.
26. Adjustable strike plates have been provided for all locksets, both key and push-button combination type (if available and as indicated on the shop drawings).
27. Separate pieces of ballistic trim have been installed, as indicated in the approved shop drawings.
28. Ballistic trim bars have been secured/screwed to the sub-frame and not the door frame.
29. A 6 mm (1/4") gap between the back of the ballistic trim bar and door frame has been maintained.
30. Uneven shimming of FE/BR products that utilize a continuous type hinge has not been permitted.

31. The manufacturer has provided two metal ID plates for each product that has machine applied letters and numbers. One ID plate should be located on the door frame and one ID plate should be located under the door leaf edge scalp plate just below the top FEL.
32. That completed Certificates of Compliance have been submitted for each individual FE and FE/BR product (sample template is attached to the end of this specification)

1.5 IDENTIFICATION SYSTEMS

- A. Identify each assembly to provide Government with ready reference to original manufacturer to facilitate reorders, replacement parts, service, resolution of complaints, and inventory. The label shall be an embossed/printed metal plate or metallic foil with adhesive backing for permanent identification. Locate label on the door frame header so that it is not exposed when the door is closed and is clearly visible and not obscured by hardware when the door is open. The label shall be approximately 40 x 75 mm and shall cite:
 1. Manufacturer's name/city/state.
 2. Contract number.
 3. Month/year of manufacture.
 4. Mark number.
 5. Government or ASTM/UL certification model number.
 6. Government code number.
- B. Provide steel stamped ID codes. Locate one ID plate on door frame and one ID plate under door leaf edge scalp plate just below top FEL. Place ID plates directly beneath the upper FEL under the door leaf non-hinge jamb trim plate, which will consist of the manufacturer name abbreviation, fabrication date (mm/yy) and mark number.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver each assembly to project site with fabrication, finishing, and assembly of primary panels, embeds/sub-frames, and frames completed and prepared for installation and connection with security systems. Disassemble hardware for shipping only to extent hardware interferes with shipping.
- B. Deliver door assemblies with glazing panels as factory glazed unless otherwise directed by Government.
- C. Pack door assemblies and accessories in two crates: one crate for the door and frame, and one crate for the embed/sub-frame and ballistic trim. Provide two wood cross braces on both sides of the crates. In each crate, provide a separate compartment for installation hardware.
- D. Provide removable spreader bar between jambs during fabrication, delivery, and installation and to include mullions of each frame assembly, except where integral threshold is required and serves same purpose. Do not mar finishes of assembly with installation or removal of spreader bars.
- E. Provide protection of pre-finished units, such as pre-finished with baked enamel or stainless steel, using self-adhesive paper.

- F. Treat security door assemblies as fragile merchandise packaged and shipped in export wood crates with width end in upright position and blocked together in a mass. Comply with manufacturer's directions for storage and handling to prevent edge damage or other damage to assembly resulting from effects of moisture, condensation, temperature changes, direct exposure to sun, and contact with chemical solvents. Provide at least one wood cross-brace for the door assembly. Clearly mark crates to indicate which side should be opened first.
- G. Clearly mark sub-frames/embeds with door mark number and identify head and left and right jambs. Package sub-frames/embeds separately and ship in export wood crates separate from the door assemblies. Protect each sub-frame/embed piece to minimize damage to finished surfaces.
- H. Package and ship installation hardware (anchors, bolts, screws, shims, ballistic trim, shop drawings, etc.) for each door in the same crate as the door assembly.
- I. Package and ship shop drawings for each door in the same crate as the door assembly.
- J. Manufacturer shall ship embed plate sub frames factory welded together with adequate temporary bracing for installation on site for new concrete wall construction.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Certified Units: Provide units, including frames and sub-frames which meet the requirements in either Subparagraph 1 or Subparagraph 2 below:
 - 1. Have been certified by Bureau of Diplomatic Security (DS) in accordance with DS/PSP/PSD SD-STD-01.01, latest revision.
 - 2. Meet ASTM and UL standards for FE/BR identified below. These assemblies must conform to other requirements of this Section regarding installation, operation, maintenance, hardware, finishes, and weather protection. These assemblies must also be able to accept scheduled hardware without compromising performance of either the door assembly or the hardware.
 - a. 15 Minute FE/BR Doors: Certified to ASTM F 1450-97, Grade 1 and to UL 752, Level 8. Door glazing to be certified to ASTM F 1915-98, Grade 1 and to UL 752, Level 8. Door Installation must be in accordance with reverse bevel configuration required of Government certified doors.
 - b. 5 Minute FE Doors: Certified to ASTM F 1450-97, Grade 4. Door glazing to be certified to ASTM F 1915-98, Grade 4. Door Installation must be in accordance with reverse bevel configuration required of Government certified doors.

- B. Clarifications and additional OBO requirements for products tested under the ASTM and UL standards:
1. Glazing in doors to be tested shall not be limited by the 100mm x 635mm vision panel specified in ASTM F-1450-97. It shall be sized to reflect Government's project requirements such as two large vision panels or one large single vision panel for transparent doors.
 2. Door pairs have to be tested. ASTM's single door test results can't be extrapolated to cover door pairs.
 3. Door frames are to be bolted to the sub-frames instead of being welded as shown in the ASTM test specifications. The door frames are to have horizontally slotted holes, not to exceed 300mm on center.
 4. Manufacturer shall provide two copies of all applicable ASTM and UL test reports for each product.
 5. Manufacturer shall provide two copies of the installation instruction manuals for each product.
 6. Door frame and sub-frame head are to have access ports to support 25mm conduit.
 7. Provide at least two bolt holes in the door head sill frame to facilitate proper installation.
 8. Insert shims at every frame bolt. Provide 1.5mm (1/16-inch) thick plastic shims or stainless steel shims with break off tabs for rough opening (R.O.) frame clearance.
- C. Selection of fabricator/manufacturer for each type of security door assembly, and selection of manufactured elements, which are used in make up of that assembly, are Contractor's options subject to the following requirements and limitations, and subject to general provisions of Construction Contract:
1. Pre-certified fabricators (by DS) of ballistic-resistant and forced-entry-resistant assemblies are identified in a separate Contract Attachment labeled "Government Certified FE/BR Products and Designs".

2.2 MATERIALS, GENERAL

- A. Hot-Rolled Steel Sheets and Strips: ASTM A 569, commercial quality, pickled and oiled, except as otherwise indicated.
- B. Cold-Rolled Steel Sheets: ASTM A 366, commercial quality, except as otherwise indicated.
- C. Galvanized Steel Sheets: ASTM A 526, with ASTM A 525, G90 zinc coating, mill phosphatized; commercial quality, except as otherwise indicated.
- D. Stainless Steel Sheets where required for finish: AISI Type 302/304, complying with ASTM A 167; commercial quality, No. 4 directional polish.
- E. Supports and Anchors: Fabricate to endure required performances, but of not less than 1.5 mm sheet steel. For exterior wall assemblies, hot-dip zinc coat support/anchor units after fabrication in compliance with ASTM A 153, Class B.

- F. Inserts, Bolts Fasteners: Standard units of strengths required to endure performances; hot-dip zinc coated where used in exterior wall assemblies in compliance with ASTM A 153, Class C/D.
 - 1. Frame bolts/screws are 12 mm x 40 mm socket head cap screws with 3mm x 27 mm (1/8" x 1-1/6") diameter grade 8 or equivalent class 10.9 or 12.9 washers.
- G. Paint for Shop Application: Rust-inhibitive enamel for baking suitable as base for finish coats, which are specified as work of other sections.
- H. Vision Panels, General: Fabricate vision panels of sizes shown and scheduled with same performance capabilities as specified/shown for door assembly where installed. Where applicable, achieve performances and combined performances through lamination of transparent sheets, films, and screens of standard manufactured/tested products. Comply with applicable provisions of Division 8 glazing section and Section 08845, "Security Glazing."
 - 1. Forced-Entry (FE) Resistance: Where assembly is indicated for forced-entry resistance rating (FE), provide light of size shown or scheduled in accordance with Bureau of Diplomatic Security (DS) certification.
 - 2. Ballistic Resistance (BR): Where assembly is indicated for ballistic-resistance rating (BR), provide light of size shown or scheduled in accordance with DS certification.
- I. Hot-Dip Galvanizing: All exterior doors must be hot-dip galvanized in accordance with ASTM standards.

2.3 HARDWARE

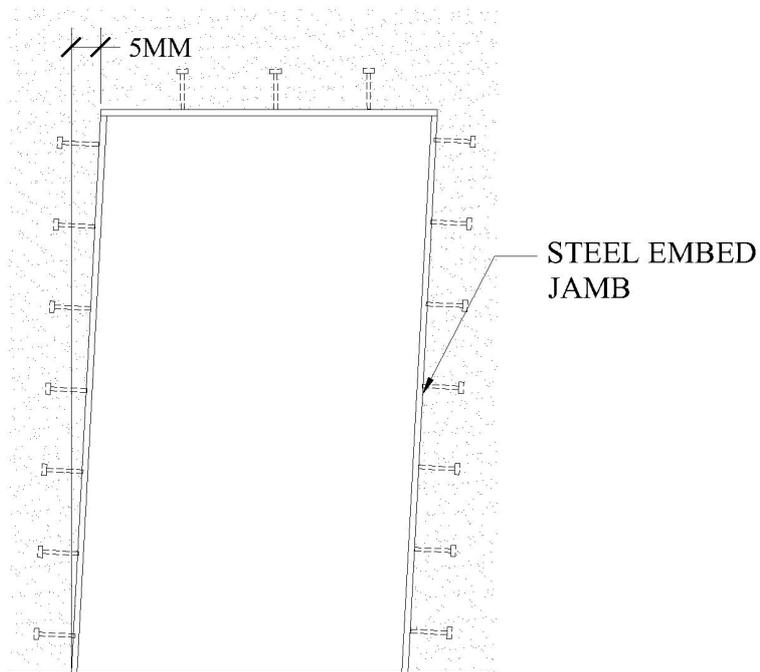
- A. General: Provide special units of door hardware to achieve performances, and as shown and scheduled. Standard units for each security door assembly are specified to be furnished as work of "Door Hardware" Section; see Project "Finish Hardware Schedule" and "Data Sheets," and provisions of this Section, as well as notes on door-and-frame schedule.

2.4 FABRICATION AND ASSEMBLY

- A. General: Fabricate, test, and pre-assemble security door assemblies with hardware at factory; disassemble hardware only to extent necessary for handling, packaging, shipment, and installation at Project. Fabricate metal work to comply with performance requirements. Fabrications shall be rigid, neat, and free from warp/buckle/similar defects, with eased edges and continuously-welded joints, ground where exposed, to produce smooth, flush, invisible joints. Weld in accordance with AWS D1.1, Structural Welding Code for Steel.
 - 1. Prepare door leafs and frames of each assembly to receive hardware, devices, and accessory units as shown and scheduled. Reinforce work for hardware and devices, and cut work for mortised or concealed units; comply with ANSI A115 series specifications, working from templates supplied by unit manufacturers and suppliers.

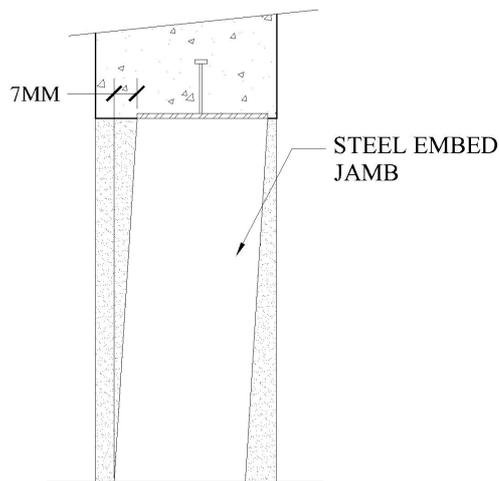
- a. Locate hardware, devices, and accessories as shown and scheduled (including on approved shop drawings) or, if not otherwise indicated: 1) in accordance with DHI Recommended Locations for Builder's Hardware or, 2) in accordance with security device manufacturer's recommendation for optimum responses, but 3) in any case, as required to achieve required assembly performances. Do not cut or otherwise alter hardware in order to install on door.
 - b. Except where assembly is equipped with door-seal stripping at jambs and head, provide neoprene door silencers on stops; three at strike jamb for single door, and four at head for double door.
 - c. Except as otherwise indicated, pre-fabricate and pre-assemble security door assemblies to include full extent of required conduit-protected electrical/electronic power and control wiring placed and supported to avoid conflicts with other elements and subsequent drilling/cutting-in of work during installation of units. Provide access ports as required to support 25 mm conduit in door frames and sub-frames/embeds.
 - d. Clearances: Not more than 3 mm at jambs and head, except not more than 6 mm between fire-rated pair of doors. Not more than 6 mm at bottom. Undercut for carpets are not permitted where doors are used in corridors.
 - e. Fabricate frames with horizontally slotted bolt holes to allow for future frame adjustment.
2. Provide the removable glazing stops and similar moldings on interior or "protected" side of assemblies. Glazing shall be removable without removing door from frame, through the top of the door or removing any surface steel panel. Select and size stops, moldings, and anchors to conform to Bureau of Diplomatic Security (DS) certified design.
 3. Shop painting: Provide base-coat, factory-applied painting of ferrous metal elements of assemblies excluding other specified exposed-finish surfaces of stainless steel, aluminum, bronze, and similar metals not intended for painting. Provide touch-up paint with each painted door.
 - a. Clean steel and zinc-coated steel surfaces of mill scale, rust, oil, grease, dirt, and other substances, immediately before finish application.
 - b. Apply pretreatment of cold phosphate solution (SSPC--PT2), hot phosphate solution (SSPC-PT4), or basic zinc -chromate/vinyl-butryal solution (SSPC-PT3).
 - c. Apply paint coat specified for shop application, and bake on within time limits recommended by manufacturer of pretreatment. Apply in a uniform, smooth coat to result in dry film thickness of not less than 0.05 mm.
 4. Vision panels:
 - a. The transparencies shall be enclosed and cushioned within core of door for continuous perimeter bite of not less than 20 mm on each side and 6 mm cushion clearance to fixed metal stop on glazing edges. Glazings shall be factory installed with no raw metal edges evident or in contact with glass in door vision openings. Vision opening edges shall be cushioned and trimmed neatly to provide acceptable appearance.

- b. If external frames are used to either side or to both faces of door, frame(s) shall not exceed 40 mm in width and shall be configured internally to cushion all perimeter edges and faces of glazing and provide minimum bite of 20 mm and 6 mm cushion clearance to fixed metal stop on glazing edges. Frame shall not produce pinch point with hardware. All external bolts to attach frame shall be flush mounted. Alternatively, protruding bolt heads shall be covered with additional trim frame and flush mounted screws.
5. Sub-frames/Embeds: Provide steel sub-frames or embed plates for all FE or FE/BR doors for installation at concrete, masonry, and other non-steel rough openings and for structural steel openings where the depth is less than the door frame depth. For individual openings, sub-frames or embeds shall be provided by the door supplier. For larger, multi-panel openings, sub-frames or embeds may be provided by either the door supplier or the Contractor; in either case they shall be designed by the door supplier and shown with the door shop drawings. Sub-frames shall be 6 mm thick minimum and embeds a minimum of 6 mm for interior applications and a minimum of 10 mm for exterior applications, with a minimum depth equal to or greater than the door frame depth. Coordinate the sub-frame or embed anchor locations with the door frame bolt hole locations. The steel sub-frame/embed shall be assembled and braced by the manufacturer prior to shipping, in order to avoid out of plane deformation during transportation, installation and concrete pouring. The steel sub-frame/embed shall be installed plumb and square. The maximum allowable tolerances are 5 mm out of square within the opening, per opening (see Figure 2.4-1), and 7 mm out of plumb parallel to the wall per opening (see Figure 2.4-2). Bi-axial allowable maximum tolerances are 5 mm (see Figure 2.4-3). The sum of all discrepancies in plumb and square for all three axes cannot exceed 17 mm.



ELEVATION

FIGURE 2.4-1 - OUT OF SQUARE TOLERANCES



SECTION

FIGURE 2.4-2 - OUT OF PLUMB TOLERANCES

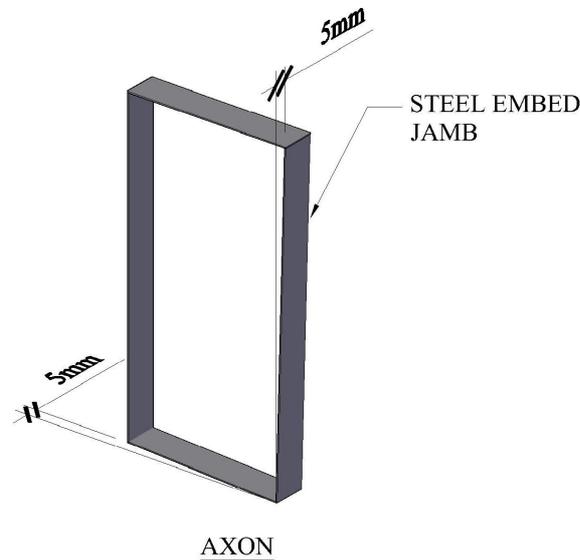


FIGURE 2.4-3 - BI-AXIAL TOLERANCES

- a. For New Concrete -Exterior embeds shall be constructed of A36 mild steel 10-mm (3/8 inch) thick steel plate or greater as required to comply with engineer's report for blast resistance, if applicable, and shall be hot dip galvanized for corrosion resistance per section 8318-12/2.2. Attach steel embed plate per the blast report or with a minimum 12 mm x 150 mm steel studs, spaced 150 mm on center. All embeds shall be factory drilled and tapped with an anchor design to allow minimum 10-mm (3/8 inch) adjustment 360 degrees from the centerline of the center of the drilled and tapped hole. All fasteners for doors or windows shall be ASTM grade 8 or other appropriate high strength bolt as identified in the blast report and complying with standard OBO specifications for FE/BR and Blast resistant products. All door embeds shall be pre-punched for the technical security conduit. Embeds without adjustment features or blank plates for field drilling and tapping shall not be permitted. Final embed design; construction and features shall be accepted by COR based on input from OBO/CFSM/SM physical security engineer prior to fabrication and shipment.
- b. Interior embeds shall be A36 mild steel 6-mm (1/4 inch) minimum thickness and shall be prime painted with a high-grade metal primer. All embeds shall be factory drilled and tapped with an anchor design to allow minimum 10-mm (3/8 inch) adjustment 360 degrees from the centerline of the center of the drilled and tapped hole. All fasteners for doors or windows shall be ASTM grade 8 or other appropriate high strength bolt as identified in the blast report and complying with standard OBO specifications for FE/BR and Blast resistant products. All door embeds shall be pre-punched for the technical security conduit. Embeds without adjustment features or blank plates for field drilling and tapping shall not be permitted. Final embed design; construction and features shall be accepted by COR based on input from OBO/CFSM/SM physical security engineer prior to fabrication and shipment.

- c. For Existing Concrete: Provide a steel sub-frame, typically a 50 mm x 150 mm x 6 mm steel tube. Anchor the sub-frame with either 12 mm diameter x 90 mm long drop-in type expansion anchors or with Hilti HY150 injection or equivalent strength anchoring system with 12 mm diameter x 200 mm long Hilti HIT threaded rods spaced at 300 mm on center.
 - d. For Solid Masonry: Provide a steel sub-frame, typically a 50mm x 150mm x 6mm steel tube. Anchor the sub-frame with a Hilti HY150 or equivalent strength injection anchoring system with 12 mm diameter x 200 mm long Hilti HIT threaded rods spaced at 300 mm on center.
 - e. For Hollow Masonry: Provide a steel sub-frame, typically a 50 mm x 150 mm x 6 mm steel tube. Anchor the sub-frame to the masonry with a Hilti HY20 or equivalent strength injection anchoring system with 12 mm diameter x 200 mm long Hilti HIT threaded rods and screen tubes spaced at 300 mm on center.
6. Protect the bottom forced entry lock thumbturn with a "U" shaped metal guard, with the opening at the bottom that has been approved by the OBO/CFSM/SM FE/BR Program. Attach the guard to the door surface with counter-sunk screws on the inside of the "U." The finish of the guard shall match the finish of the door.
 7. Doors, windows and glazed panels in multi-unit elevations shall be designed and fabricated with minimum 50mm x 150mm x 6mm steel tubes or as required by blast loading to separate the head and jambs of each door frame from other door, window frames and glazed panels.
 8. All embed plate assemblies must have been factory welded together.
 9. Door frame bolt/screw horizontal slotted holes are 16 mm x 35 mm (5/8" x 1-1/4") round access holes. Washer diameters are 27 mm so that 4mm of the slotted hole will be visible on each side of the washer. This configuration has been inspected and it has been confirmed that the bolts are centered in the slotted holes.
 10. All FE/BR product bolts, screws and anchors shall be metric products.
 11. Cladding that covers door frame bolt/screw access holes shall have either access holes with cap plugs or shall be attached with screws for easy removal. Cap plugs and cladding for each door shall be placed in bags for installation until after the final QA inspection.
 12. Manufacturer shall ensure any decorative cladding around the electro magnetic lock on door frame allows lock position to be adjusted in both directions.
 13. At each door assembly, provide continuous minimum gap between door leaf and door frame.
 14. In large multi-unit elevations, fabricate door assembly frames so that frames have been separated from other FE or FE/BR product frames with structural steel tube to allow for future door frame adjustments.

15. Ensure that thresholds do not exceed specified limits, as indicated in the approved shop drawings.
16. Provide adjustable strike plates for locksets, both key and push-button combination type (if available and as indicated on the shop drawings).

PART 3 - EXECUTION

3.1 INSTALLATION

A. General:

1. Install FE/BR door assemblies only into a steel substrate and in such a manner that allows for future frame adjustment. This may be either a structural steel wall or other structural steel assembly, steel embed in concrete, or a steel sub-frame attached to concrete or masonry.
2. Install security door assemblies in accordance with approved shop drawings, manufacturer's data and instructions, and requirements of these specifications.
3. Install the assemblies in compliance with recommendations and instructions of SDI-100 and SDI-105.
 - a. At fire-rated door openings, comply with NFPA Standard No. 80.
4. Install each embed plate or sub-frame level, plumb and square.
5. No part of the forced entry lock (FEL) may be altered including but not limited to grinding, cutting or re-welding any part of the FEL strike, strike plate (steel couple with vertical slot welded to the frame) and strike plate receiver (vertical slot in door leaf). No part of the FE/BR door may be altered. The only acceptable fix for defective or altered parts is to unbolt the altered piece and replace altered piece in its entirety.
6. Replace temporary bolts with permanent bolts.
7. Torque frame bolts to exactly 47.5 Nm (35 ft./lbs.). Insert shims at bolt locations.
8. Finish materials shall not overlap door frame/sub-frame and ballistic trim bars unless finish materials can be easily removed and reinstalled. Any overlapping finish work (e.g. metal, wood, stone) shall be capable of removal without damaging the door frame and surrounding finishes. Install door and frame such that removal of the door and frame is possible without demolishing the finishes and trim, and such that door is capable of future adjustments of 6-mm in or out of opening.
9. Installer in coordination with manufacturer shall ensure any decorative cladding around electro magnetic lock on door frame allows lock position to be adjusted in both directions.
10. Install access plates for doors as indicated in the approved shop drawings.

11. Install door frame head level and non-hinge side jamb plumb and square.
12. Ensure each lockset, deadbolt and panic exit device is able to fully engage and freely operate.
13. For doors with panic hardware, install panic exit device strike plate in location that will eliminate any door leaf bounce on frame.
14. Install each door closer in accordance with the manufacturer's instructions.
15. Install separate pieces of ballistic trim as indicated in the approved shop drawings.
16. Secure ballistic trim bars to sub-frame and not door frame.
17. Maintain 6 mm (1/4") gap between back of ballistic trim bar and door frame.
18. Evenly install shimming of FE/BR products that utilize a continuous type hinge; uneven shimming is not acceptable.

B. Anchorage: The door manufacturer shall provide anchors appropriate for substrate to which door frame and sub-frame is to be fastened. Door frames shall have pre-drilled horizontally slotted bolt hole patterns not to exceed 300 mm on center. The manufacturer shall verify substrates involved, and supply any special fastening tools (e.g., special drill, bit, tap) required by anchoring system. The anchor shall be acceptable for shock/short duration loading, and have potential for removal and re-installation during life of building.

1. Avoid cutting rebar during concrete sub-frame installation.
2. Provide 1.5 mm (1/16 inch) thick plastic shims with break-off tabs for rough opening (RO) frame clearance.
3. Match finish of cap plugs used in frame with frame finish to the maximum extent possible. Do not install cap plugs until after the final QA inspection of doors, conducted by OBO/CFSM/SM physical security engineer, has been completed.

3.2 ADJUST AND CLEAN

A. General: Upon request of COR, remove protective coverings and clean exposed surfaces. Repair damaged elements, restore abraded surfaces, touch-up base-coat paint finish with air-drying primer, and remove imperfections from exposed natural metal finishes.

1. Check and readjust hardware, devices, and accessories with door-to-frame-and-sill/ threshold clearances set for proper operation of locks, door seals, and other operational units. Do not remove permanently applied performance labels.
2. Comply with "Door Hardware" section requirements for protection and handling of keys, locking devices, and associated information.
3. Exercise extreme care in cleaning exposed surfaces of polycarbonate; comply with manufacturer's directions.

4. Replace Any continuous hinges with squeaks. Field lubrication of the hinge as a solution for eliminating squeaks is not acceptable.
5. Adjust each door closer in accordance with the manufacturer's instructions.
6. Adjust automatic door operators in accordance with the manufacturer's instructions to meet accessibility requirements of OBO-ICS IBC Chapter 11.

END OF SECTION 08318

MANUFACTURER'S FINAL INSPECTION REPORT

Page 1 of 4

Manufacturer:			
Contract Number:			
Job/Mark Number(s):			
Shop Drawing Number:			
Final Acceptance of Product:			
Inspector:		Date:	/ /

Inspection Criteria	Findings	Acceptance		
		N/A	NO	YES
1. APPEARANCE				
1.A SURFACES OF DOORS, WINDOWS, MODULAR PANELS, LOUVERS, AND FRAMES				
• No sharp edges or safety hazards				
• Weldments ground and sanded				
• Depressions filled and sanded				
• Surfaces flush, flat and smooth				
• Hardware cutouts, edges smooth, straight and sanded				
1.B PRE-TREATMENT AND PAINT FINISH				
• Coverage, uniform w/o runs or sags.				
• Thickness:				
• Prime: 1.0 + .25 mil Cite:				
• Finish: 2.0 + .50 mil Cite:				
• Hardness:				
• F minimum scratch				
• H minimum gouge				
• Color Cite:				
• No overspray				
• Smooth				
1.C ASSEMBLIES				
• Square tight fitted components				
• Paint and hardware finish compatible				
1.D IDENTIFICATION				
• Proper labels & Bar codes				
• Located as specified				

Acceptance:			
Rejection:			
Comments/Notes:	(Attach additional sheets as necessary)		
Quality Control Inspector:		Date:	/ /

MANUFACTURER'S FINAL INSPECTION REPORT

Page 2 of 4

Inspection Criteria	Findings	Acceptance		
		N/A	NO	YES
2. GENERAL				
2.A GLAZING				
• No crazing or delaminating				
• Flatness within specification tolerance				
• Glazing trim properly installed:				
• Vinyl				
• Other Cite:				
• Proper glazing blocks				
• No silicone caulk				
• No scratches				
2.B WIRING				
• Diagram provided on interior cover of terminal block cavity				
• Conduits provided as cited				
• Holes drilled for wiring				
• Properly secured				
• Code of wires correct				
2.C MISCELLANEOUS				
• Cover and scalp plates:				
• Properly applied				
• No interference w/hardware				
• Correct screws used				
• Flush with mating surfaces				
• Weather strip on exterior doors				
• Silencers applied to jamb				
• Door doesn't hit jamb				
• Locking angles clear jamb				
• Threshold properly protected and mounted to check fit				
• Pull doesn't exceed 10 lbs for armored or 7 lbs for non-armored to open door				
• Finish per SHW schedule				
• Quantity per SHW schedule				
Acceptance:				
Rejection:				
Comments/Notes:	(Attach additional sheets as necessary)			
Quality Control Inspector:		Date:	/ /	

MANUFACTURER'S FINAL INSPECTION REPORT

Page 3 of 4

Inspection Criteria	Findings	Acceptance		
		N/A	NO	YES
3. HARDWARE				
3.A FORCED ENTRY LOCK				
• Bolt throw, ease, clearance in locking angle and fit to scalp				
• Secure inside door				
• Cylinder tight, flush to door				
• Key removes when lock is thrown				
• Shutter is operable (and is) Operable with electric current				
3.B FORCED ENTRY HINGE				
• Fitted and attached per appropriate Figure (13-D)				
3.C LOCKSET				
• Proper space in jamb for deadbolt				
• Latch and deadbolt align w/strike				
• Latch and deadbolt operable (ea. side if applicable) , w/ and w/o key)				
• Trim flush & true w/door surface				
• Strike plate flush & true w/jamb				
• Stem correct for use in lock				
• Latch not tight or loose in strike				
3.D CLOSER				
• Latch time, normal: 3-4 seconds				
• Latch time, fast close: 2-3 seconds				
• Latch time, slow close: 5-7 seconds				
• Mount bracket secured flush to jamb				
• Mounting screws do not protrude				
• Arm parallel to door surface				
3.E PANIC EXIT DEVICE				
• Cut to correct length				
• Solenoid works properly @ 24V DC				
3.F ELECTRONIC HARDWARE				
• All function when power applied				
• Magnetic Sensors indicate ON/OFF				
Acceptance:				
Rejection:				
Comments/Notes:	(Attach additional sheets as necessary)			
Quality Control Inspector:		Date:	/ /	

MANUFACTURER'S FINAL INSPECTION REPORT

Page 4 of 4

Inspection Criteria	Findings	Acceptance		
		N/A	NO	YES
4. PACKAGING AND PACKING				
• Packaging complies with Section 140				
• Wood case complies with Figure 14B				
• 2x4 brace inserts to protect hardware, etc.				
• Unit plumb and level in case				
• Unit properly secured in case				
• Trim properly secured in case				
• Packing list/Inspection certificate				
• Master Packing list and shop drawings				
• All items on packing list verified				
5. MARKING ON CASE				
• Marking complies w/Section 140				
• Weight -Dimension -Cube				
• Crate Number, of Total in shipment				
• Job number and Mark number				
• "THIS END UP" "OPEN FIRST" "FRAGILE" warning signage applied				
• Origin, USDA & final destination shown				
• Bot tom/Top arrow indicators shown				
6. SHIPPING				
• "Tip-N-Tell" applied/documented				
• TNT Inside/Outside/Pins pulled				
• Load properly secured in truck				
• All applicable data on Shipping Docs.				
• Representative pictures of door, window, modular unit, and louver				
Acceptance:				
Rejection:				
Comments/Notes:	(Attach additional sheets as necessary)			
Quality Control Inspector:		Date:	/ /	

MANUFACTURER'S GLAZING INSPECTION REPORT

Manufacturer:			
Contract Number:			
Job/Mark Number(s):			
Shop Drawing Number:			
Final Acceptance of Product:			
Inspector:		Date:	/ /

FE/BR Glazing Inspection Criteria	Findings	Acceptance		
		N/A	NO	YES
A. VISION OPENINGS				
• Verify glazing to specification requirements				
• Confirm glazing ID to Label, Bar Code				
• Flatness to spec. tolerance 0.030"/ft.				
• No crazing, cracks, chips, scratches				
• No delaminating or un-lamination				
• Bite minimum 3/4" sides, metal stop edges				
• Tape trim fitted, to glazing and stop				
• Vinyl trim proper size and type				
• Proper glazing blocks (cite type, size)				
• No scratches				
• Painted/Anodized Surfaces Clean, w/o				
• Fingerprints, dirt, scratches, etc.				
• Paper protection applied to polycarbonate				
• "Attack Side" label on glass face				

B. OPTICAL DEFECTS				
<p>1. The defects shall not be of a size, or frequency in the assembly, to cause focusing of the viewer's eye on such defects when viewing through the assembly.</p> <p>2. Oclusions (spherical and cylindrical combined) shall not appear at a frequency exceeding three per square foot in the major viewing area of the assembly.</p>				
Inspect for defects, open or entrapped:				
• Bubbles, seeds, lint, dirt, etc.				
• Spherical occlusion exceeding 1/16" Ø.				
• Cylindrical occlusion exceeding 1/16" Ø				
• Cylindrical occlusion exceeding 1/2" length.				
• No crazing, cracks, chips, scratches.				
• No delaminating or un-lamination.				
• No distortions.				
• No hazed conditions.				
• Any condition affecting light transmission.				

Acceptance:			
Rejection:			
Comments/Notes:	(Attach additional sheets as necessary)		
Quality Control Inspector:		Date:	/ /

MANUFACTURER'S PREPARATION FOR ASSEMBLIES INSPECTION REPORT

DRILLED, PUNCHED HOLES & CUT-OUTS (LOCATION, TEMPLATES & TOLERANCES)

Manufacturer:			
Contract Number:			
Job/Mark Number(s):			
Shop Drawing Number:			
Final Acceptance of Product:			
Inspector:		Date:	/ /

Inspection Criteria	Findings	Acceptance		
		N/A	NO	YES
A. FORCED ENTRY HINGE (Continuous types):				
• Proper cutouts, around angles, etc.				
• Countersink screw heads 1/64" minimum below plane of hinge leaf.				
• Fitted and attached per Figure 13-D.				
• Located 1/8" from top of door				
• Back of hinge properly protected				
• Finish compatible to SHW Schedule				
• Precise hole layout per specified template.				
• Identify leaf for door side to jamb.				
B. DOOR:				
• Holes in hinge and door aligned				
• Threads in door not stripped				
• Flange on hinge flush w/ door surface				
• Hinge placed for proper swing of door				
• ID Label on hinge side w/Mark Number.				
C. JAMB:				
• Holes in hinge and jamb bar align.				
• Access holes in hinge and bar align.				
• Threads in jamb not stripped.				
• Hinge flange flush w/back-up bar.				
D. MULLION (per elevation):				
• Line-up $\pm 1/32"$ (front to back).				
• Alignment of holes $\pm 1/32"$.				
• Dimensional $\pm 1/32"$ each unit.				

Acceptance:			
Rejection:			
Comments/Notes:	(Attach additional sheets as necessary)		
Quality Control Inspector:		Date:	/ /

MANUFACTURER'S PREPARATION FOR ASSEMBLIES INSPECTION REPORT

DRILLED, PUNCHED HOLES & CUT-OUTS (LOCATION, TEMPLATES & TOLERANCES)

Manufacturer:			
Contract Number:			
Job/Mark Number(s):			
Shop Drawing Number:			
Final Acceptance of Product:			
Inspector:		Date:	/ /

Inspection Criteria	Findings	Acceptance		
		N/A	NO	YES
E. HARDWARE CUTOUT DIMENSIONS:				
• Von Duprin (33 & 99) strike, 3/16" back-up plate.				
• Russwin-strike $\pm 1/32"$, tabs, recess as specified				
• Simplex-strike $\pm 1/32"$, tabs, recess as specified				
• 310 strike $\pm 1/32"$, tabs, recess as specified				
• Sentrol $\pm 1/32"$.				
• E.P.T $\pm 1/32"$.				
• Bolt access holes.				
• Electric Access Panel $\pm 1/32"$.				
F. MISCELLANEOUS:				
• Wire holes, location clear.				
• Glazing bar(s), (if used) tolerances $\pm 1/32"$ square, overall dimensions				
• Trim (fit to glazing stop)				
• Welds: placement, sized as specified penetration with no splatter				
• Threshold bar location to be 1/32" back from jamb stop.				
G. OVERALL DIMENSIONS:				
• Height (outside $\pm 1/32"$ RH/LH side)				
• Width (outside $\pm 1/32"$ top/bottom)				
• Square inside frame $\pm 1/16"$.				
• Straightness $\pm 1/16"$ each direction.				
• Strike receiver square with jamb $\pm 1/32"$ all dimensional locations.				

Acceptance:			
Rejection:			
Comments/Notes:	(Attach additional sheets as necessary)		
Quality Control Inspector:		Date:	/ /

MANUFACTURER'S WELDING REPORT

Manufacturer:			
Contract Number:			
Job/Mark Number(s):			
Shop Drawing Number:			
Final Acceptance of Product:			
Inspector:		Date:	/ /

Inspection Criteria	Findings	Acceptance		
		N/A	NO	YES
A. WELDING PRACTICE AND PROCEDURES:				
• Only specified and properly qualified welding procedures are used for the work.				
• Joint preparation and fit-up meet the requirements of the welding procedure and drawings.				
• Specified filler metals are used and maintained in proper condition for use as specified.				
• Technique and performance of each welder, welder operator and tacker are as specified.				
• The work conforms to requirements of the applicable code, standard, specification and drawing.				
• The work inspected is identified with specified marking methods and/or appropriate records.				
• Base material, consumable welding material conform.				
• Specified welding filler materials are used on each base metal or combination of base metals.				
• The welding equipment to be used is appropriate for use with the welding procedure and can produce the specified welds.				

B. PRODUCTION WELDS – ACCEPTANCE CRITERIA:				
A weld shall be acceptable by visual inspection provided all four of the following criteria are met:				
• The weld has no cracks.				
• Minimum reinforcement of 1/32" (1 mm) for all square groove, arc spot, and arc seam welds.				
• No undercut exceeds 10% thickness of the steel which has the undercut.				
• Filet weld faces shall be flat or slightly convex.				

Acceptance:			
Rejection:			
Comments/Notes:	(Attach additional sheets as necessary)		
Quality Control Inspector:		Date:	/ /

MANUFACTURER'S PRETREATMENT AND FINISH INSPECTION REPORT

Manufacturer:			
Contract Number:			
Job/Mark Number(s):			
Shop Drawing Number:			
Final Acceptance of Product:			
Inspector:		Date:	/ /

Inspection Criteria	Findings	Acceptance		
		N/A	NO	YES
A. SURFACES OF DOORS, WINDOWS, MODULAR OPAQUE PANELS, LOUVERS & FRAMES:				
• No sharp edges or safety hazards				
• No weld splatter, burn marks, etc.				
• "Sight Lines" aligned within the designed system of products				
• Weldments ground and sanded smooth				
• Exposed fillet welds radiused				
• And ground smooth				
• Depressions filled and sanded				
• Surfaces flush, flat and smooth				
• Hardware cutouts, edges smooth, straight and swiped.				
B. PRETREATMENT AND PAINTING:				
• All metal surfaces cleansed of dirt, grime, oils, rust, etc.				
• All exterior and interior surfaces treated as per Specification FS-TT-C 490.				
C. PAINT FINISH:				
• Coverage, uniform w/o runs or sags.				
• Thickness:				
• Prime: 1.0 ± .25 mil. Cite:				
• Finish: 2.0 ± .50 mil. Cite:				
• Hardness:				
• F minimum scratch				
• H minimum gouge				
• Accepted color, no discoloration.				
• Good adhesion.				
• No foreign matter in coating.				

Acceptance:			
Rejection:			
Comments/Notes:	(Attach additional sheets as necessary)		
Quality Control Inspector:		Date:	/ /



**Certificate of Compliance
Manufacturers and Contract Specifications for FE/BR Products
FE/BR Door Assemblies**

Door Number _____
(Per Construction Documents)

Each of these items indicated below must be inspected by the contractor prior to acceptance of the FE/BR products by DoS. A completed Certificate of Compliance is required for each individual product.

1	The manufacturer's technical representative was on site during the initial stages of installation and for site-specific unique conditions as required.	Representatives Name	Dates on site
2	Each embed plate or sub-frame has been installed level, plumb and square.	Inspecting Official	Date
3	All embed plate assemblies must have been factory welded together.	Inspecting Official	Date
4	All units with glazing have been pre-glazed at the factory.	Inspecting Official	Date
5	Employees performing the installation meet the specified training and experience qualifications.	Certifying Official	Date
6	No part of the forced entry lock (FEL) has been altered including but not limited to grinding, cutting or re-welding any part of the FEL strike, strike plate (steel couple with vertical slot welded to the frame) and strike plate receiver (vertical slot in door leaf). No part of the FE/BR door has been altered. The only acceptable fix for defective or altered parts is to unbolt the altered piece and replace altered piece in its entirety.	Certifying Official	Date
7	Door frame bolt/screw horizontal slotted holes are 16 mm x 35 mm (5/8" x 1-1/4") round access holes. Washer diameters are 27 mm so that 4mm of the slotted hole will be visible on each side of the washer. This configuration has been inspected and it has been confirmed that the bolts are centered in the slotted holes.	Certifying Official	Date

8	All temporary bolts have been replaced with permanent bolts.	Certifying Official	Date
9	All frame bolts have been torqued to exactly 47.5 Nm (35 ft./lbs.). Shims have been inserted at all bolt locations.	Certifying Official	Date
10	Frame bolts/screws are 12 mm x 40 mm socket head cap screws with 3mm x 27 mm (1/8" x 1-1/6") diameter grade 8 or equivalent class 10.9 or 12.9 washers.	Certifying Official	Date
11	All FE/BR product bolts, screws and anchors are metric products.	Certifying Official	Date
12	No finish materials overlap the door frame/sub-frame shim space and ballistic trim bars unless the finish materials can be easily removed and reinstalled. Any overlapping finish work (i.e. metal, wood, stone, etc.) must be capable of removal without damaging the door frame and finish to allow future adjustments of 6-mm in or out of the opening.	Certifying Official	Date
13	Any cladding that covers the door frame bolt/screw access holes has either access holes with cap plugs or is attached with screws for easy removal. Cap plugs and cladding for each door have been bagged and won't be installed until after the final QA inspection has been conducted by the OBO/CFSM/SM physical security engineer.	Certifying Official	Date
14	The manufacturer and installer must ensure any decorative cladding around the electro magnetic lock on the door frame will allow the lock position to be adjusted in both directions.	Certifying Official	Date
15	At each door assembly, there is a continuous minimum gap between the door leaf and the door frames.	Certifying Official	Date
16	All access plates for each door have been installed as indicated in the approved shop drawings.	Certifying Official	Date
17	Any continuous hinges with squeaks have been replaced. Field lubrication of the hinge as a solution for eliminating squeaks is not acceptable.	Certifying Official	Date
18	Each door frame head has been installed level and the non-hinge side jamb has been installed plumb and square.	Certifying Official	Date
19	Each lockset, deadbolt and panic exit device is able to fully engage and freely operate.	Certifying Official	Date
20	On doors with panic hardware, the panic exit device strike plate has been installed in a location that will eliminate any door leaf bounce on the frame.	Certifying Official	Date
21	All door assembly frames, in large multi-unit elevations, have been separated from other FE or FE/BR product frames with a structural steel tube, which will allow for future door frame adjustments.	Certifying Official	Date
22	Thresholds do not exceed specified limits, as indicated in the approved shop drawings.	Certifying Official	Date

23	Each door closer has been installed and adjusted in accordance with the manufacturer's instructions.	Certifying Official	Date
24	Automatic door operators have been adjusted as appropriate in accordance with the manufacturer's instructions to meet ADA-ABA and appropriate fire codes.	Certifying Official	Date
25	Adjustable strike plates have been provided for all locksets, both key and push-button combination type (if available and as indicated on the shop drawings).	Certifying Official	Date
26	Separate pieces of ballistic trim have been installed, as indicated in the approved shop drawings.	Certifying Official	Date
27	Ballistic trim bars have been secured/screwed to the sub-frame and not the door frame.	Certifying Official	Date
28	A 6 mm (1/4") gap between the back of the ballistic trim bar and door frame has been maintained.	Certifying Official	Date
29	Uneven shimming of FE/BR products that utilize a continuous type hinge has not been permitted.	Certifying Official	Date
30	The manufacturer has provided two metal ID plates for each product that has machine applied letters and numbers. One ID plate should be located on the door frame and one ID plate should be located under the door leaf edge scalp plate just below the top FEL.	Certifying Official	Date

SECTION 08714 - SECURITY DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Contract Drawings and general provisions of the Contract, including Contract Clauses and Conditions (CC&C), Supplemental Contract Clauses and Conditions, and Division 1 Sections of these Contract Specifications, apply to this Section.

1.2 SUMMARY

- A. Related Sections
 - 1. Division 8 Section for metal doors and frames.
 - 2. Division 8 Section for wood doors.
 - 3. Division 8 Section for FE/BR door assemblies.
 - 4. Division 16 for electronic security and power for electrically operated hardware devices.
 - 5. Classified Section 08715, "Security Door Hardware for PCC."

1.3 SUBMITTALS

- A. General: Submit in accordance with Division 1 requirements.
- B. Product Data: Submit three copies of catalog cuts of all items used in the supplier's schedule.
 - 1. Include construction and installation details, material descriptions, dimensions of individual components and profiles, and finishes.
- C. Shop Drawings: For power-assist operators. Include plans, elevations, sections, details, and attachments to other work.
 - 1. Indicate required clearances, method of field assembly, components, and location and size of each field connection.
 - 2. Include locations and elevations of entrances showing activation and safety devices.
- D. Hardware Schedules: Based on hardware indicated, organize hardware schedule into groups or sets showing complete designations of every item required for each door opening. Schedule shall be vertical layout similar to the format used herein. Lines shall be double-spaced with pages numbered and dated; Security Hardware Sets shall be listed as SHW-1, SHW-2, etc.

1. For doors of different sizes or where hinges, locks or closers are different, a separate heading shall be used. No labeled openings shall be combined with non-labeled openings. Horizontal hardware schedules are not acceptable. Include the following:
 - a. Number, location, hand, fire rating, DOS Code, size and material of each door opening (hands and swings to be determined in relation to key side of opening).
 - b. Type, style, function, size, finish and quantity of each hardware item.
 - c. Name and manufacturer of each item.
 - d. Fastening requirements.
 - e. Explanation of abbreviations used.
 - f. Keying information.
 - g. Wiring diagrams (after each corresponding hardware group).
- E. Hardware Schedule Index: Furnish an index cross referencing Contract Document door number and hardware group, and supplier's hardware set.
- F. Keying Schedule: Submit separate detailed schedule, indicating the Government's approved master key system, for Government review and approval after Hardware Schedule has been approved.
- G. Wiring Diagrams: Furnish wiring diagrams illustrating point-to-point hook-up of all electrical hardware specified herein. Include fire alarm and/or access control system interface where applicable. Diagrams shall be complete by opening and shall indicate connections between all components affected. Manufacturers' standard line diagrams are not acceptable.
- H. Samples: If requested by COR, submit one sample of each requested item tagged with full description for coordination with the hardware schedule. These items will remain on file in the COR's office until all other similar items have been installed in the project. At that time, items on file will be released for installation in pre-determined Project locations.
- I. Operating Instructions: Furnish the Government with one complete set of installation instructions, including special adjusting tools and maintenance instructions listing routine maintenance procedures, possible breakdowns and repairs, and troubleshooting guides. One complete catalog shall be furnished for each manufacturer listed in the approved hardware schedule.
- J. Templates: Furnish templates and approved hardware schedule to door and frame fabricators. Where fabricator cannot work to paper templates, ship templates and or physical hardware to factories of respective manufacturers. Prepay cost for shipping and delivery.
- K. Informational Submittals: Submit the following:
 1. Certifications specified in Quality Assurance article.
 2. Qualifications Data: Hardware Suppliers Qualification data.
- L. Closeout Submittals: Submit specified warranty in accordance with Division 1 requirements.

- M. Certification: After completion of hardware installation, submit written certification attesting that hardware has been installed in accordance with manufacturer's templates and instructions and that hardware has not been altered.

1.4 QUALITY ASSURANCE

- A. General Requirements: Hardware has been specified by manufacturer's name, brand and catalog numbers for purpose of establishing basis for quality, design and operational function.
1. Provide designated product, or where more than one product or manufacturer is listed, provide equivalent product of one of other listed manufacturers.
 2. Obtain each type of hardware from single manufacturer.
 3. Hardware Sets within this Section are not complete with respect to thickness of doors, hand, backset, method of fastening, and other detail requirements.
 4. Review Drawings and Door Schedules thoroughly and provide required hardware for all openings, including openings that may have been inadvertently omitted from Door Schedules.
 5. Should opening be omitted or opening not indicated with hardware set, provide hardware of same quality, design and function as specified for similar openings.
 6. Sequence of Operation: Provide electrified door hardware function, sequence of operation, and interface with other building control systems indicated.
 7. Furnish hardware complete with brackets, plates, fittings, fastenings and other accessories required for installation.
- B. Regulatory Requirements:
1. Comply with OBO International Codes Supplement (OBO-ICS) IBC Section 1101 to accommodate barrier free design except where specifically indicated by the Government.
 2. Provide knurled tactile warning on door hardware to hazardous areas; abrasive coating not acceptable.
 3. Comply with NFPA 80 for hardware at fire-rated assemblies.
 4. Provide hardware that has been tested and listed by UL or FM for fire-rated assemblies of types that comply with requirements of door and frame labels.
 5. Comply with National Electrical Code requirements for personnel doors to protect workers in applicable electrical spaces.
 6. Latches and Locks for Means of Egress Doors (Except where Specifically Indicated Otherwise): Comply with NFPA 101. Latches shall not require more than 67 N (15 lbf) to release the latch. Locks shall not require use of a key, tool, or special knowledge for operation.
 7. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a testing agency, and marked for intended location and application.

- C. Hardware Supplier Qualifications: Door hardware supplier who has been furnishing hardware for a period of not less than two years, and who is, or who employs an Architectural Hardware Consultant (AHC) who will be available at reasonable times during the course of Work for consultation about Project's hardware requirements.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Comply with Division 1 requirements.
 - 1. Pack each hardware item separately. Include manufacturer's printed installation instructions, trim, fasteners accessories, and special tools necessary for installation.
 - 2. Legibly mark and adequately label each package indicating opening for which intended. Provide markings corresponding with approved Hardware Schedule.
 - 3. Deliver permanent security cores and keys as indicated in Keying section, not less than two months prior to scheduled substantial completion.

PART 2 - PRODUCTS

2.1 APPROVED PRODUCTS

- A. See door hardware sets at end of this Section for approved products.

2.2 HINGES

- A. FE/BR Hinges: For FE/BR doors that utilize a continuous Hager Roton hinge, provide Hager Roton 1200 Series or equivalent extra-heavy duty hinge.
- B. Electrified Functions for Hinges: Comply with the following:
 - 1. Power Transfer: Concealed PTFE-jacketed wires, secured at each leaf and continuous through hinge knuckle.
 - 2. Monitoring: Concealed electrical monitoring switch.
 - 3. Power Transfer and Monitoring: Concealed PTFE-jacketed wires, secured at each leaf and continuous through hinge knuckle, and with concealed electrical monitoring switch.

2.3 CYLINDERS AND CORES

- A. Provide cylinders for locks, deadlocks, and other control and locking devices indicated in the Hardware Sets.
- B. Security Doors:

1. Acceptable Manufacturers:
 - a. Medeco Security Locks, Inc. an ASSA ABLOY Group company.
 - b. No substitutions.
2. Description:
 - a. Original high security cylinder with interchangeable core. Provide six-pin commercial keyway.
 - b. All cylinders shall be equipped with temporary construction core for use during construction. The contractor is responsible for the purchase of the final cores and coordination of their secure shipment to the project site through DS.

2.4 KEY CONTROL SYSTEM

A. Acceptable Manufacturer and Product:

1. Morse Watchmans, Inc., 2 Morse Road, Oxford, CT 06478. Model: KeyWatcher Illuminated System

- ### B. Description:
- Furnish Morse KeyWatcher key management system (DOS PN KW-8494). The system shall provide a minimum 48 key main cabinet and a minimum 48 key secondary cabinet (one for CAA keys and one for non-CAA keys) that are both expandable. The system shall be expandable in 32 key increments, unit (DOS PN KW-8495). The total quantity of key capabilities required shall be determined by total number of keys required by the project. System shall be provided with the Key-Pro software package for complete monitoring of the key control system. Control location for the system is Post One.

Dimensions: 21”w x 34”h x 13”d; installed semi-recessed

- ### C. Electrical:
- 100 – 240 VAC, 50 – 60HZ

- ### D. Modification:
- The Standard factory cam locks need to be replaced. Four pin cam locks (DOS PN FSS-KW3) will replace the standard the standard three pin locks. The locks will be pinned alike for all KeyWatchers at a given post and each post will have a unique key.

- ### E. In Post One provide lockable key drawer capable of storing a minimum of 200 keys.

- ### F. In the GSO suite and the RSO suite provide Diebold KC-1612 wall mounted key cabinet with dual control system including envelopes, labels, tags with self locking clips, receipt forms, three-way visible card index, temporary markers, permanent markers and metal cabinet. Equip the cabinet with pin tumbler locking mechanism. Provide unit capable of storing a minimum of 200 keys.

2.5 POWER-ASSIST OPERATORS

- A. Acceptable Manufacturers:
1. LCN Closers; an Ingersoll-Rand company.
 2. No Substitutions.
- B. Standard: BHMA A156.19.
- C. Description: Units shall be pneumatically powered; surface mounted to frame head, and shall operate as manual door closers unless power-assist is activated and when power is lost.
1. Activation of power-assist shall open doors to 90-degrees.
 2. Furnish actuators with satin stainless steel dress plates embossed with the universal handicap symbol. Refer to OBO-ICS Chapter 11 for the power assist operators requirements.
 3. Opening Force:
 - a. If Power Fails: Not more than 67 N (15 lbf) required to release a latch if provided, not more than 133 N (30 lbf) required to manually set door in motion, and not more than 67 N (15 lbf) required to fully open door.
 - b. Accessible Interior Doors: Not more than 22 N (5 lbf) to fully open door.
 4. Entrapment Protection: Not more than 67 N (15 lbf) required to prevent stopped door from closing or opening.
- D. Required Features: Manufacturer's standard cast iron construction.
1. Rack and pinion construction with compression spring, fully hydraulic.
 2. Closing speed and latching speed controlled by independently operated valves.
 3. Adjustable spring power allowing adjustment up to 50 percent in field to suit individual door conditions.
 4. Adjustable hydraulic backcheck.

2.6 AUXILIARY HARDWARE

- A. Acceptable Manufacturers:
1. Hager Companies.
 2. *Ives Hardware; an Ingersoll-Rand Company.
 3. *Rockwood Manufacturing Co., Inc.
 4. Triangle Brass Manufacturing Co., Inc. ("Trimco" – see www.trimcobbw.com)
 5. * Manufacturer used in Hardware Sets at end of section.

- B. Manual Flush Bolts: Top manual flush bolt shall not exceed 1880 mm (74-inches) from floor to centerline.
- C. Door Stops: Furnish wall stops equal to Ives 407CVX or Rockwood 400 wherever trim strikes wall. Where wall stops are not suitable, furnish surface mounted overhead stops equal to Glynn-Johnson 450 Series. Where door closers are specified in the Hardware Sets and wall stops are not suitable, provide closer arms with built-in stops (LCN No.3077-CNS).
- D. Silencers: Furnish rubber silencers equal to Ives SR64 or Rockwood 608 for hollow metal frames; three per single door and four per pair. Silencers are not required at doors specified to receive continuous weather-stripping or seals.

2.7 OVERHEAD STOPS AND HOLDERS

- A. Acceptable Manufacturers:
 - 1. Architectural Builders Hardware.
 - 2. *Glynn-Johnson; an Ingersoll-Rand Company.
 - 3. Rixson, an ASSA ABLOY Group company.
 - 4. * Manufacturer used in Hardware Sets at end of section.
- B. Where wall stops are not suitable, furnish surface overhead stops equal to Glynn-Johnson 450 Series. In Hardware Sets where door closers are specified, provide closer arms with built-in stops (LCN No.3077-CNS).

2.8 THERESHOLDS, WEATHER-STRIPPING AND SEALS

- A. Acceptable Manufacturers:
 - 1. Hager Companies.
 - 2. National Guard Products.
 - 3. *Pemko Manufacturing Co.
 - 4. Reese Enterprises, Inc.
 - 5. Zero International, Inc.
 - 6. * Manufacturer used in Hardware Sets at end of section.
- B. Description: Refer to the Hardware Sets for grade and style. Where required, field modify thresholds to accept strikes for flush bolts and exit device rods.
- C. Smoke Seals: Where required by applicable code, at doors located in Smoke Barrier Partitions, provide smoke seals equal to Pemko S88 at the head and jambs; and at pairs of doors, one Pemko 375CR or two Pemko 303AS astragal seals as appropriate; coordinate with Drawings and schedules.

- D. Astragals: Where indicated in the Hardware Sets, provide overlapping astragals equal to Pemko 357SP. Astragals shall be full height, installed on the "threat" side of the opening.

2.9 ACOUSTICAL TREATMENT

- A. Provide full door gasketing/acoustical seals with flat threshold installed to maintain STC rating of surrounding walls.
- B. Certification: Provide certification that the door construction utilized has been tested at an independent laboratory in accordance with ASTM E90-90, and that the STC determined in accordance with ASTM E413-87 is not less than that specified. The laboratory referenced in the certification must be qualified under the National Voluntary Laboratory Accreditation Program (NAVLAP) of the U.S. Bureau of Standards. Certification must reference laboratory name, test report number, and date of test; substitution of test data not in accordance with ASTM E90-04 and E413-87 will not be acceptable.
- C. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated, based on testing according to ASTM E 1408.
- D. Secondary Requirements: If fire resistance is required, certify that assemblies have been tested in accordance with UL 10B for labeled fire doors and frames and meets the requirements of NFPA 80. If seismic stability is required, submit calculations showing ability of door systems to withstand pertinent seismic forces.

2.10 ELECTROMAGNETIC DOOR HOLDERS

- A. Acceptable Manufacturers:
 - 1. Corbin Russwin Architectural Hardware; an ASSA ABLOY Group company.
 - 2. *LCN Closers; an Ingersoll-Rand company.
 - 3. Rixson, an ASSA ABLOY Group company.
 - 4. * Manufacturer used in Hardware Sets at end of section.
- B. Description: Refer to the Hardware Sets for size and style. Install wall holders with shims as required for a complete installation; coordinate with Drawings and details.
 - 1. Wall Actuators: Schlage, an Ingersoll-Rand company.
 - 2. Post Actuators: MS Sedco.

2.11 KEYING

- A. The following is the DOS required keying plan for SECURITY DOOR OPENINGS:
 - 1. Key locksets and cylinders to factory established and recorded system.

- a. All key operated locks on individual doors shall be keyed alike.
 - b. Grand Master and Great Grand Master systems are not permitted.
 - c. All exterior FE and FE/BR doors shall have an interior cylinder with a non-removable thumb turn.
 - d. Security doors shall be keyed different and master keyed by building within the following categories: Exterior FE and FE/BR doors; interior hard-line doors; Telecommunications Room doors; and EC Room doors.
 - e. Security doors shall be keyed different and master keyed by floor within the Controlled Access Area, except for the PCC and Secure Conference or Processing rooms.
 - f. Security doors shall be keyed alike with no master key within the following categories: Pharmacy, Safe Haven or Safe Area, and LAA Lock and Leave doors.
 - g. Security doors shall be keyed different with no master key within the following categories: Telephone Equipment Rooms; Secure Generator Room; React Room; PCC; Secure Conference or Processing rooms; and Primary Lock and Leave doors.
- B. The Project Director, a representative of the Post, the General Contractor's representative, and either the RSO or the PSO shall meet to determine if there are any special keying conditions required so they may be incorporated into the keying schedule.
- C. Key Quantities : Furnish plain bow keys of nickel silver material in the following quantities:
1. For each master key system, provide:
 - a. Two master keys.
 - b. Two control keys (pinned to the master).
 - c. Two operating keys per cylinder change.
 2. For each individually keyed cylinder, provide:
 - a. Two control keys.
 - b. Two operating keys per keyed cylinder.
 3. For each construction key system, provide:
 - a. Two control keys.
 - b. Eight master keys.
- D. Identification and Control
1. Identify master keys with registry number; do not stamp with master key, letter M, or similar identification; manufacturer's trademark or identification not allowed.
 2. Stamp master keys with DO NOT DUPLICATE.
 3. Furnish visual controls system; coordinate provisions with the Government. Stamp or emboss keys and cylinders with identification code. Code should not be stamped on the face of the cylinders, only on the barrel.

E. Delivery

1. Deliver construction cores, construction master keys, and construction keys to the Project Site.
2. Permanent cores, operating keys and permanent control keys shall be individually packaged by the door, identified by the lock and **OBO PROJECT NUMBER ONLY** (not Post name), and shipped by the supplier, via prepaid freight to:
U.S. Department of State
DS Lock Support
State Annex #24 (SA-24)
5800 Barclay Drive
Suite 3
Alexandria, Virginia 22315-5700
3. After removal of temporary construction cores, ship construction cores, construction keys, and construction control keys to the above-mentioned address.

2.12 FINISHES

- A. Base Metals: Produce hardware units of basic metal and forming method indicated, using manufacturers' standard metal alloy of composition, temper and hardness, but in no case of lesser quality than specified or inferred by use of a particular manufacturer's number, style or grade or as established by appropriate referenced specification listed herein.
- B. Finishes: Finishes shall conform to the quality of finish including thickness of plating or coating (if any), composition, hardness and other qualities complying with manufacturers' standards, but in no case less than the standards established by ANSI/BHMA A156.18.
 1. All exposed hardware except door closers shall be satin stainless steel, ANSI/BHMA 630/US32D. Closers shall be painted to match satin stainless steel. Hinges shall be satin stainless steel. Items not available in stainless steel shall be furnished with satin chrome finish, ANSI/BHMA 626/US26D.
 2. Security hardware finish shall match finish of non-security hardware to the maximum extent possible.
- C. Prime Coated Items: Field painted under Division 9 painting section.

2.13 FASTENERS

- A. Manufacture hardware to conform to published templates, generally prepare for machine screw installation. Do not provide hardware that has been prepared for self-tapping or sheet metal screws except as specifically indicated.
 1. Furnish screws for installation with each hardware item. Provide Phillips flat head or oval head screws except as otherwise indicated. Finish exposed (exposed under any condition) screws to match the hardware finish or, if exposed in surfaces of other work, to match the finish of such work as closely as possible, except as otherwise indicated.

2. Provide concealed fasteners for hardware units that are exposed when the door is closed, except to the extent no standard manufactured units of the type specified are available with concealed fasteners.
3. Do not use through bolts for installation except where it is not possible to adequately reinforce the work, to accept machine screws or concealed fasteners or other standard type, to satisfactory avoid the use of through bolts. Grommet nuts and cealnuts are not acceptable.

- B. Furnish fasteners that are compatible with both the units fastened and the substrates, and which will not cause corrosion or deterioration of hardware, base material reinforcement, or fastener. Furnish wall stops with expansion anchors and machine screws. Furnish thresholds with lead anchors and 1/4-20 stainless steel machine screws.

2.14 ACCESSORIES

- A. Door Coat and Hat Hook: Provide cast aluminum, double prong hooks on inside face of all private office doors and toilet rooms; Ives Model No. 405 wide body design (ANSI/BHMA A156.16, L33113).

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine conditions and proceed with work in accordance with Division 1 requirements.

3.2 INSTALLATION

- A. Install hardware plumb, level, and true to line in accordance with manufacturer's templates, Section 01600, and Project conditions.
1. Install fire rated hardware in accordance with NFPA 80.
 2. Where cutting and fitting is required on substrates to be field painted or similarly finished, install, fit, remove and store hardware prior to finishing. Reinstall hardware after finishing operations are completed.
 3. Do not install surface mounted items until finishes have been completed on the substrate.
 4. Reinforce attachment substrates as necessary for installation and operation.
 5. Mortise work to correct size and location without gouging, splintering or causing irregularities in exposed finish work.
 6. Fit faces of mortised components snug and flush without excessive clearance.
 7. Set thresholds at exterior doors in bed of sealant. Remove excess sealant.

- B. Hardware Mounting Heights: Mount hardware units at heights recommended by DHI (see "Recommended Locations for Builders Hardware") on custom doors except as otherwise indicated or required to comply with governing regulations, and except as may be otherwise indicated.
- C. Cylinder Cores: When instructed, Contractor shall remove temporary construction cores. Permanent cores will be installed by the Government. After installation of the permanent cores, ship construction cores, operating keys, and control keys via pre-paid freight to the DS/PEL/SEM address noted in Paragraph on "Keying."
- D. Power-Assist Operators: Where post mounted actuator buttons are indicated, run signal wire below grade in conduit complying with Division 16. Elsewhere, run signal wire concealed in Technical Security System conduit. Run pneumatic lines between pumps and door operators concealed. At curtain walls, run pneumatic lines concealed in metal trays finished to match curtain wall.

3.3 ADJUSTING

- A. Check and adjust each operating hardware item to ensure correct operation and function.
 - 1. Adjust sweep period so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 75 mm (3 inches) from the latch, measured to the leading edge of the door.
 - 2. Ensure weather-stripping and seals do not inhibit closing and positive latching of door.
 - 3. Lubricate moving or operating components as recommended by hardware manufacturer. Use graphite type lubrication if none other is recommended.
 - 4. Replace defective materials or units that cannot be adjusted to operate as intended. Reinstall items found improperly installed.
 - 5. Prior to date of Substantial Completion, readjust and reapply lubricant to hardware items as necessary.

3.4 DEMONSTRATION

- A. Instruct Government's designated personnel in proper adjustment and maintenance of hardware at time of Substantial Completion.
 - 1. In the presence of the Government's representative, demonstrate that the keys operate freely in designated unit.
 - 2. Hardware supplier: Completely set-up key control system with keys tagged and placed in cabinet. Cross index system executed with appropriate information typed in on index cards and instruct Government's designated personnel in the proper use of the system.

3.5 HARDWARE SETS – SECURE DOORS

SHW-1

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified/rated door.	
1	Panic Exit Device	EL98NL x 990NL-R x 299 strike-32D	Von Duprin
1	Interchangeable Core & Rim Cylinder	32-0400V-32D x CT-Y32 with cylinder spacer ring	Medeco
	Certified Forced Entry Lock	Model and quantity to match certified/rated door.	
1	Electromagnetic Locking Device	2268-10 x DYNST x 24V	Dynalock
1	Closer	4041 x Cush-n-Stop - AL	LCN
1	Electric Power Transfer	EPT-2 x SP28	Von Duprin
1	Magnetic Switch	1076D-G	GE Security

SHW-1A

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified/rated door.	
1	Panic Exit Device	RXEL98NL-F x 990NL-R x 229F strike-32D	Von Duprin
1	Interchangeable Core & Rim Cylinder	32-0400V-32D x CT-Y32 with cylinder spacer ring	Medeco
	Certified Forced Entry Lock	Model and quantity to match certified/rated door.	
1	Electromagnetic Locking Device	2268-10 x DYNST x 24V	Dynalock
1	Closer	4041 x Cush-n-Stop – AL	LCN
1	Electric Power Transfer	EPT-10 x SP28	Von Duprin
1	Magnetic Switch	1076D-G	GE Security
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko

SWH-1B

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified/rated door.	
1	Panic Exit Device	EL98NL x 990NL-R x 299 strike-32D	Von Duprin
1	Interchangeable Core & Rim Cylinder	32-0400V-32D x CT-Y32 with cylinder spacer ring	Medeco
	Certified Forced Entry Lock	Model and quantity to match certified/rated door.	
1	Electromagnetic Locking Device	390+ DSM/MBS	Locknetics
1	Electric Power Transfer	EPT-2 x SP28	Von Duprin
1	Pneumatic Auto-Equalizer	4840	LCN
1	Cover	4840-72MC	LCN
1	Stop	4840-3077CNS Cush-n-Stop	LCN
1	Pneumatic Transfer Hinge	4840-460	LCN
	Pneumatic Tubing	7910-925	LCN
1	Door Control Package	7981 or 7982 (for two doors)	LCN
1	Door Control Relay Interface	941-R	AES
1	Door Control Module	941-M	AES
2	Wall Mounted Switches	625-BL-H-DP-626	Schlage
1	Magnetic Switch	1076D-G	GE Security
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko

SHW-1C

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified/rated door.	
1	Panic Exit Device	RXEL98NL-F x 990NL-R x 299F strike-32D	Von Duprin
1	Interchangeable Core & Rim Cylinder	32-0400V-32D x CT-Y32 with cylinder spacer ring	Medeco
	Certified Forced Entry Lock	Model and quantity to match certified/rated door.	
1	Electromagnetic Locking Device	390+ DSM/MBS	Locknetics
1	Electric Power Transfer	EPT-10 x SP28	Von Duprin
1	Pneumatic Auto-Equalizer	4840	LCN
1	Cover	4840-72MC	LCN
1	Stop	4840-3077CNS Cush-n-Stop	LCN
1	Pneumatic Transfer Hinge	4840-460	LCN
	Pneumatic Tubing	7910-925	LCN
1	Door Control Package	7981 or 7982 (for two doors)	LCN
1	Door Control Relay Interface	941-R	AES
1	Door Control Module	941-M	AES
2	Wall Mounted Switches	625-BL-H-DP-626	Schlage
1	Magnetic Switch	1076D-G	GE Security
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko

SHW-1D

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified/rated door.	
1	Panic Exit Device	EL98NL x 990NL-R x 299 strike-32D	Von Duprin
1	Interchangeable Core & Rim Cylinder	32-0400V-32D x CT-Y32 with cylinder spacer ring	Medeco
	Certified Forced Entry Lock	Model and quantity to match certified/rated door.	
	Certified Forced Entry Lock Exterior Keyed Cylinders		Medeco
1	Electromagnetic Locking Device	2268-10 x DYNST x 24V	Dynalock
1	Closer	4041 x Cush-n-Stop – AL	LCN
1	Electric Power Transfer	EPT-2 x SP28	Von Duprin
1	Pneumatic Transfer Hinge	4840-460	LCN
	Pneumatic Tubing	7910-925	LCN
1	Magnetic Switch	1076D-G	GE Security

SHW-2

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified/rated door.	
1	Mechanical Push Button Combination Lock	L(hand)1021M-26D-41	Simplex
1	Interchangeable Core	32-0201 – 26D	Medeco
	Certified Forced Entry Lock	Model and quantity to match certified/rated door.	
1	Electromagnetic Locking Device	2268-10 x DYNST x 24V	Dynalock
1	Electric Strike	310-2 3/4 x 24DC	Folger Adam
1	Closer	4041 x Cush-n-Stop – AL	LCN
1	Magnetic Switch	1076D-G	GE Security
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko
3	Silencers	SR 64	Ives

SHW-2A

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified/rated door.	
1	Panic Exit Device	EL98NL x 990NL-R x 299 strike-32D	Von Duprin
1	Interchangeable Core & Rim Cylinder	32-0400V-32D x CT-Y32 with cylinder spacer ring	Medeco
1	Digi*Trac Scramble Pad Controller	M2N or M2N 230 (for 230 VAC)	Hirsch
1	Scramble Pad	DS47L or DS47L-HI (for exterior applications)	Hirsch
1	Mounting Box	MB-8	Hirsch
	Certified Forced Entry Lock	Model and quantity to match certified/rated door.	
1	Electromagnetic Locking Device	2268-10 x DYNST x 24V	Dynalock
1	Electric Power Transfer	EPT-2 x SP28	Von Duprin
1	Closer	4041 x Cush-n-Stop – AL	LCN
1	Magnetic Switch	1076D-G	GE Security
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko
3	Silencers	SR 64	Ives

SHW-2B

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified/rated door.	
1	Panic Exit Device	98EO x 299 strike – 32D	Von Duprin
1	Mechanical Pushbutton Combination Lock	L(hand)P1020M-26D – 41	Simplex
1	Interchangeable Core	32-0201-26D	Medeco
	Certified Forced Entry Lock	Model and quantity to match certified/rated door.	
1	Electromagnetic Locking Device	2268-10 x DYNST x 24V	Dynalock
1	Closer	4041 x Cush-n-Stop – AL	LCN
1	Magnetic Switch	1076D-G	GE Security
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko
3	Silencers	SR 64	Ives

SHW-2C

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified/rated door.	
1	Mechanical Push Button Combination Lock	L(hand)1021M-26D – 41	Simplex
1	Interchangeable Core	32-0201-26D	Medeco
	Certified Forced Entry Lock	Model and quantity to match certified/rated door.	
1	Electromagnetic Locking Device	2268-10 x DYNST x 24V	Dynalock
1	Closer	4041 x Cush-n-Stop – AL	LCN
1	Magnetic Switch	1076D-G	GE Security
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko
3	Silencers	SR 64	Ives

SWH-2D

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified/rated door.	
1	Panic Exit Device	EL98NL x 990NL-R x 299 strike-32D	Von Duprin
1	Interchangeable Core & Rim Cylinder	32-0400V-32D x CT-Y32 with cylinder spacer ring	Medeco
	Certified Forced Entry Lock	Model and quantity to match certified/rated door.	
1	Digi*Trac Scramble Pad Controller	M2N or M2N 230 (for 230 VAC)	Hirsch
1	Scramble Pad	DS47L or DS47L-HI (for exterior applications)	Hirsch
1	Mounting Box	MB-8	Hirsch
1	Electromagnetic Locking Device	390+ DSM/MBS	Locknetics
1	Electric Power Transfer	EPT-2 x SP28	Von Duprin
1	Pneumatic Auto-Equalizer	4840	LCN
1	Cover	4840-72MC	LCN
1	Stop	4840-3077CNS Cush-n-Stop	LCN
1	Pneumatic Transfer Hinge	4840-460	LCN
	Pneumatic Tubing	7910-925	LCN
1	Door Control Package	7981 or 7982 (for two doors)	LCN
1	Door Control Relay Interface	941-R	AES
1	Door Control Module	941-M	AES
2	Wall Mounted Switches	625-BL-H-DP-626	Schlage
1	Magnetic Switch	1076D-G	GE Security
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko
1	Silencers	SR 64	Ives

SWH-2E

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified/rated door.	
1	Mechanical Push Button Combination Lock	EE102M / EE1021M-26D – 41	Simplex
2	Interchangeable Core Certified Forced Entry Lock	32-0201-26D	Medeco
		Model and quantity to match certified/rated door.	
1	Electromagnetic Locking Device	2268-10 x DYNST x 24V	Dynalock
1	Electric Strike	310-2 3/4 x 24DC	Folger Adam
1	Closer	4041 x Cush-n-Stop – AL	LCN
1	Magnetic Switch	1076D-G	GE Security
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko
3	Silencers	SR 64	Ives

SHW-3

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified/rated door.	
1	Lockset	ML2067 x NSM x 32D w/ Scalp Plate 402F30	Corbin Russwin
1	Interchangeable Core & Mortise Cylinder	32-0200-26D x CT-Z00	Medeco
	Certified Forced Entry Lock	Model and quantity to match certified/rated door.	
	Certified Forced Entry Lock Exterior Keyed Cylinders		Medeco
1	Closer	4041 x Cush-n-Stop – AL	LCN
1	Magnetic Switch	1076D-G	GE Security
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko

SHW-4

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified/rated door.	
1	Lockset	ML2067 X NSM x 32D	Corbin Russwin
1	Interchangeable Core & Mortise Cylinder	32-0200-26D x CT-Z00	Medeco
	Certified Forced Entry Lock	Model and quantity to match certified/rated door.	
1	Closer	4041 x Cush-n-Stop – AL	LCN
1	Magnetic Switch	1076H-G	GE Security
1	Door Viewer (peep)		
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko

SHW-4A

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified/rated door.	
1	Lockset	ML2067 x NSM x 32D	Corbin Russwin
1	Interchangeable Core & Mortise Cylinder	32-0200-26D x CT-Z00	Medeco
	Certified Forced Entry Lock	Model and quantity to match certified/rated door.	
1	Closer	4041 x Cush-n-Stop – AL	LCN
1	Electromagnetic Door Release	999	Rixson
1	Magnetic Switch	1076D-G	GE Security
1	Door Viewer (peep)		
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko

SHW-4B

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified/rated door.	
1	Mechanical Push Button Combination Lock	L(hand)1012M-26D – 41	Simplex
1	Interchangeable Core	32-0201 – 26D	Medeco
	Certified Forced Entry Lock	Model and quantity to match certified/rated door.	
1	Electromechanical Combination Lock	CDX-09 (GSA Specification FF-L-2890)	Kaba Mas
1	Closer	4041 x Cush-n-Stop – AL	LCN
1	Magnetic Switch	1076H-G	GE Security
1	Door Viewer (peep)		
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko

SHW-5A

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified/rated door.	
1	Panic Exit Device	EL98TP x 990TP-R x 299 strike – 32D	Von Duprin
1	Interchangeable Core & Rim Cylinder	32-0400V-32D x CT-Y32 with cylinder spacer ring	Medeco
	Certified Forced Entry Lock	Model and quantity to match certified/rated door.	
1	Electromagnetic Locking Device	390+ DSM/MBS	Locknetics
1	Pneumatic Auto-Equalizer	4840	LCN
1	Cover	4840-72MC	LCN
1	Stop	4840-3077CNS Cush-n-Stop	LCN
1	Pneumatic Transfer Hinge	4048-460	LCN
	Pneumatic Tubing	7910-925	LCN
1	Door Control Package	7981 or 7982 (for two doors)	LCN
1	Door Control Relay Interface	941-R	AES
1	Door Control Module	941-M	AES
2	Wall Mounted Switches	625-BL-H-DP-626	Schlage
1	Electric Power Transfer	EPT-2 x SP28	Von Duprin
1	Magnetic Switch	1076D-G	GE Security
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko

SHW-5B

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified/rated door.	
1	Panic Exit Device	EL98EO x 299 strike-32D	Von Duprin
	Certified Forced Entry Lock	Model and quantity to match certified/rated door.	
1	Electromagnetic Locking Device	390+ DSM/MBS	Locknetics
1	Pneumatic Auto-Equalizer	4840	LCN
1	Cover	4840-72MC	LCN
1	Stop	4840-3077CNS Cush-n-Stop	LCN
1	Pneumatic Transfer Hinge	4840-460	LCN
1	Pneumatic Tubing	7910-925	LCN
1	Door Control Package	7981 or 7982 (for two doors)	LCN
1	Door Control Relay Interface	941-R	AES
1	Door Control Module	941-M	AES
1	Wall Mounted Switches	625-BL-H-DP-626	Schlage
1	Electric Power Transfer	EPT-2 x SP28	Von Duprin
1	Magnetic Switch	1076D-G	GE Security
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko

SHW-5C

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified/rated door.	
1	Panic Exit Device	EL98TP x 990TP-R x 299 strike-32D	Von Duprin
1	Interchangeable Core & Rim Cylinder	32-0400V-32D x CT-Y32 with cylinder spacer ring	Medeco
	Certified Forced Entry Lock	Model and quantity to match certified/rated door.	
1	Electromagnetic Locking Device	2268-10 x DYNST x 24V	Dynalock
1	Closer	4041-SRI x Cush-n-Stop – AL	LCN
1	Electric Power Transfer	EPT-2 x SP28	Von Duprin
1	Magnetic Switch	1076D-G	GE Security
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko

SHW-5D

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified/rated door.	
1	Panic Exit Device	98EO x 299 strike-32D	Von Duprin
	Certified Forced Entry Lock	Model and quantity to match certified/rated door.	
1	Electromagnetic Locking Device	2268-10 x DYNST x 24V	Dynalock
1	Closer	4041-SRI x Cush-n-Stop – AL	LCN
1	Magnetic Switch	1076D-G	GE Security
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko

SHW-6

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified/rated door.	
	Certified Head and Foot Bolts	Model and quantity to match certified/rated door.	
1	Panic Exit Device	98EO x 299 strike-32D	Von Duprin
	Certified Forced Entry Lock	Model and quantity to match certified/rated door.	
1	Electromagnetic Locking Device	2268-10 x DYNST x 24V	Dynalock
2	Closer	4413 ME x 24 VDC - AL	LCN
2	Magnetic Switch	1076D-G	GE Security
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko
1 Set	Stile Gaskets	375CR	Pemko

SHW-6A

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified/rated door.	
	Certified Head and Foot Bolts	Model and quantity to match certified/rated door.	
1	Panic Exit Device	EL98NL x 990NL-R x 299 strike-32D	Von Duprin
1	Interchangeable Core & Rim Cylinder	32-0400V-32D x CT-Y32 with cylinder spacer ring	Medeco
	Certified Forced Entry Lock	Model and quantity to match certified/rated door.	
1	Electromagnetic Locking Device	2268-10 x DYNST x 24V	Dynalock
2	Closer	4413ME x 24VDC - AL	LCN
1	Electric Power Transfer	EPT-2 x SP28	Von Duprin
2	Magnetic Switch	1076D-G	GE Security
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko
1 Set	Stile Gaskets	375CR	Pemko

SHW-7

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Lock set	ML20905 x NSM x 32D	Corbin Russwin
1	Interchangeable Core & Mortise Cylinder	32-0200-26D x CT-Z00	Medeco
1	Crypto Lock / Keypad	CC-8521B	Moniteq
2	Rechargeable Batteries 7AH	CC-BATT x 12VDC x 7AH	Moniteq
1	Electric Power Transfer	EPT-2 x SP28	Von Duprin
1	Closer	4041 x Cush-n-Stop – AL	LCN
1	Magnetic Switch	1076D-G	GE Security
3	Silencers	SR 64	Ives

SHW-7A

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Panic Exit Device	EL98NL-F x 990NL-R x 299F strike-32D	Von Duprin
1	Interchangeable Core & Mortise Cylinder	32-0400V-32D x CT-Y32 with cylinder spacer ring	Medeco
1	Crypto Lock/Keypad	CC-8521B	Moniteq
2	Rechargeable Batteries 7AH	CC-BATT x 12 VDC x 7AH	Moniteq
1	Closer	4041 x Cush-n-Stop – AL	LCN
1	Electric Power Transfer	EPT-2 x SP28	Von Duprin
1	Magnetic Switch	1076D-G	GE Security
1 Set	Smoke Gasket	S88D	Pemko

SHW-7B

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Panic Exit Device	98EO x 299 strike-32D	Von Duprin
1	Mechanical Push Button Combination Lock	L(hand)P1020M-26D – 41	Simplex
1	Interchange Core	32-0201 – 26D	Medeco
2	Closer	4041 x Cush-n-Stop – AL	LCN
1	Magnetic Switch	1076D-G	GE Security
3	Silencers	SR 64	Ives

SHW-7C

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Mechanical Push Button Combination Lock	L(hand)1021M-26D – 41	Simplex
1	Interchange Core	32-0201-26D	Medeco
1	Closer	4041 x Cush-n-Stop – AL	LCN
1	Magnetic Switch	1076D-G	GE Security
3	Silencers	SR 64	Ives

SHW-7D

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Panic Exit Device	EL98NL-F x 990L-NL-R x 299 F Strike-32D	Von Duprin
1	Interchangeable Core & Mortise Cylinder	32-0400V-32D x CT-Y32 with cylinder spacer ring	Medeco
1	Digi*Trac Scramble Pad Controller	M2N or M2N 230 (for 230 VAC) or M8N or M8N 230 (specify Model 8's for applications exceeding 2 doors)	Hirsch
1	Scramble Pad	DS47L or DS47L-HI (for exterior applications)	Hirsch
1	Mounting Box	MB-8	Hirsch
1	Closer	4041 x Cush-n-Stop – AL	LCN
1	Electric Power Transfer	EPT-2 x SP28	Von Duprin
1	Magnetic Switch	1076H-G	GE Security
1 Set	Smoke Gasket	S88D	Pemko

SHW-8

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified/rated door.	
1	Panic Exit Device	RX98EO-F x 299F strike – 32D	Von Duprin
	Certified Forced Entry Lock	Model and quantity to match certified/rated door.	
1	Fire Door Magnetic Lock with Display Panel	8946	Moniteq
1	Closer	4041 x Cush-n-Stop – AL	LCN
1	Electric Power Transfer	EPT-2 x SP28	Von Duprin
1	Magnetic Switch	1076D-G	GE Security
1	Fire Door Control Module	AES-945	AES
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko

SHW-8A

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified/rated door.	
	Certified Forced Entry Lock	Model and quantity to match certified/rated door.	
	Certified Forced Entry Lock Interior Keyed Cylinders		Medeco
1	Door Pull	98DT-26D	Von Duprin
1	Magnetic Switch	1076H-G	GE Security
1	Door Viewer (peep)		
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko

SHW-8B

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified/rated door.	
1	Panic Exit Device	RX98NL-F x 990NL-R x 299F strike – 32D	Von Duprin
1	Interchangeable Core & Rim Cylinder	32-0400V-32D x CT-Y32 with cylinder spacer ring	Medeco
	Certified Forced Entry Lock	Model and quantity to match certified/rated door.	
	Certified Forced Entry Lock Exterior Keyed Cylinders		Medeco
1	Fire Door Magnetic Lock with Display Panel	8946	Moniteq
1	Closer	4041 x Cush-n-Stop – AL	LCN
1	Electric Power Transfer	EPT-2 x SP28	Von Duprin
1	Magnetic Switch	1076D-G	GE Security
1	Fire Door Control Module	AES-945	AES
1	Recessed Mount Key Control Lockbox with Combination Lock	4440-GCI	Knox or DS approved equal
1	Toggle Switch		DPST
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko

SHW-9

QUAN.	ITEM	MODEL & NOTES	MFR.
1	Electromechanical Combination Lock	X-09 (GSA Specification FF-L-2740A)	Kaba Mas
1	Balanced Magnetic Switch	SM-19	Wells Fargo
1	Door Viewer (peep)	U696	Ives

SHW-9A

QUAN.	ITEM	MODEL & NOTES	MFR.
1	Balanced Magnetic Switch	SM-19	Wells Fargo
1	Door Viewer (peep)	U696	Ives

SHW-10

QUAN.	ITEM	MODEL & NOTES	MFR.
1	Brut Electronic Door Latch	8497-102	Sargent & Greenleaf
1	Interchangeable Core & Rim Cylinder Assembly	32-0400V-32D x CT-Y32 with cylinder spacing ring	Medeco
1	Cypher Lock Crypto Lock	CC-8521B	Moniteq
2	Rechargeable Batteries 7AH	CC-BATT x 12 VDC x 7AH	Moniteq
1	Armored Cable	271	Alarm Clock
1	Day Gate Installation Kit		

SHW-10A

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Lock set	ML20905 x NSM x 32D	Corbin Russwin
1	Interchangeable Core & Mortise Cylinder	32-0200-26D x CT-Z00	Medeco
1	Cypher Lock Crypto Lock	CC-8521B	Moniteq
2	Rechargeable Batteries 7AH	CC-BATT x 12 VDC x 7AH	Moniteq
1	Electric Power Transfer	EPT-2 x SP28	Von Duprin
1	Armored Cable	271	Alarm Clock
1	Day Gate Installation Kit		

SHW-11

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Mechanical Push Button Combination Lock	L(hand)1021M-26D – 41	Simplex
1	Interchangeable Core	32-0201-26D	Medeco
1	Electromechanical Combination Lock	CDX-09 (GSA Specification FF-L-2890)	Kaba Mas
1	Closer	4041 x regular arm – AL	LCN
1	Magnetic Switch	1076H-G	GE Security
1	Wall Stop	407CVX	Ives
3	Silencers	SR 64	Ives

SHW-11A

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Mechanical Push Button Combination Lock	L(hand)1021M-26D – 41	Simplex
1	Interchangeable Core	32-0201-26D	Medeco
1	Combination Lock with Extension	8555 x 101	Sargent & Greenleaf
1	Closer	4041 x reg arm – AL	LCN
1	Magnetic Switch	1076H-G	GE Security
1	Wall Stop	407CVX	Ives
3	Silencers	SR 64	Ives

SHW-12

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Lock set	ML2057 x NSM x 32D	Corbin Russwin
1	Interchangeable Core & Mortise Cylinder	32-0200-26D x CT-Z00	Medeco
1	Maxum Deadbolt	11-C402-26D	Medeco
1	Interchangeable Core	32-0201-26D	Medeco
1	Electric Strike	310-2 3/4 x 24 DC	Folger Adam
1	Closer	4041 x Cush-n-Stop – AL	LCN
1	Magnetic Switch	1076H-G	GE Security
3	Silencers	SR 64	Ives

SHW-12A

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Lock set	ML2057 x NSM x 32D	Corbin Russwin
1	Interchangeable Core & Mortise Cylinder	32-0200-26D x CT-Z00	Medeco
1	Maxum Deadbolt	11-C422 – 26D	Medeco
2	Interchangeable Core	32-0201 – 26D	Medeco
1	Electromagnetic Locking Device	390+ DSM/MBS	Locknetics
1	Electric Strike	310-2 3/4 x 24 DC	Folger Adam
1	Pneumatic Auto-Equalizer	4840	LCN
1	Cover	4840-72MC	LCN
1	Stop	4840-3077CNS Cush-n-Stop	LCN
1	Pneumatic Transfer Hinge	4840-460	LCN
	Pneumatic Tubing	7910-925	LCN
1	Door Control Package	7981 or 7982 (for two doors)	LCN
1	Door Control Relay Interface	941-R	AES
1	Door Control Module	941-M	AES
2	Wall Mounted Switches	625-BL-H-DP-626	Schlage
1	Magnetic Switch	1076D-G	GE Security
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko
3	Silencers	SR 64	Ives

SHW-12B

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Mechanical Push Button Combination Lock	L(hand)1021M-26D – 41	Simplex
1	Interchangeable Core	32-0201-26D	Medeco
1	Maxum Deadbolt	11-C402 – 26D	Medeco
1	Interchangeable Core	32-0201 – 26D	Medeco
1	Electric Strike	310-2 3/4 x 24 DC	Folger Adam
1	Closer	4041 x Cush-n-Stop – AL	LCN
1	Magnetic Switch	1076H-G	GE Security
3	Silencers	SR 64	Ives

SHW-12C

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Mechanical Push Button Combination Lock	L(hand)1021M-26D – 41	Simplex
1	Interchangeable Core	32-0201-26D	Medeco
1	Electromechanical Combination Lock	CDX-09 (GSA Specification FF-L- 2890)	Kaba Mas
1	Electric Strike	310-2 3/4 x 24 DC	Folger Adam
1	Closer	4041 x regular arm – AL	LCN
1	Magnetic Switch	1076H-G	GE Security
1	Wall Stop	407CVX	Ives

SHW-12D

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Mechanical Push Button Combination Lock	L(hand)1021M-26D- 41	Simplex
1	Interchangeable Core	32-0201-26D	Medeco
1	Combination lock with Extension	8555 x 101 (#1 strike)	Sargent & Greenleaf
1	Electric Strike	310-2 3/4 x 24 DC	Folger Adam
1	Closer	4041 x Cush-n-Stop – AL	LCN
1	Magnetic Switch	1076H-G	GE Security
3	Silencers	SR 64	Ives

SHW-12E

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Mechanical Push Button Combination Lock	EE1021M / EE1021M-26D – 41	Simplex
2	Interchangeable Core	32-0201-26D	Medeco
1	Maxum Deadbolt	11-C422-26D	Medeco
2	Interchangeable Core	32-0201-26D	Medeco
1	Electromagnetic Locking Device	2268-10 x DYNST x 24V	Dynalock
1	Electric Strike	310-2 3/4 x 24 DC	Folger Adam
1	Closer	4041-SRI x Cush-n-Stop – AL	LCN
1	Magnetic Switch	1076D-G	GE Security
1	Sill Sweep	315CN	Pemko
3	Silencers	SR 64	Ives

SHW-13

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Lock set	ML2067 x NSM x 32D w/ Scalp Plate 402F30	Corbin Russwin
1	Interchangeable Core & Mortise Cylinder	32-0200-26D x CT-Z00	Medeco
1	Magnetic Switch	1076H-G	GE Security
3	Silencers	SR 64	Ives

SHW-13A

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Lock set	ML2022 x NSM – 32D	Corbin Russwin
2	Interchangeable Core & Mortise Cylinder	32-0200-26D x CT-Z00	Medeco
1	Closer	4041 x Cush-n-Stop – AL	LCN
1	Magnetic Switch	1076H-G	GE Security
3	Silencers	SR 64	Ives

SHW-14

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Passage Set	ML2010 x NSM x 32D	Corbin Russwin
1	Electromechanical Combination Lock	CDX-09 (GSA Specification FF-L-2890)	Kaba Mas
1	Magnetic Switch	1076H-G	GE Security
3	Silencers	SR 64	Ives

SHW-14A

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Passage Set	ML2010 x NSM x 32D	Corbin Russwin
1	Combination Lock with Extension	8555 x 101 (#1 strike)	Sargent & Greenleaf
1	Magnetic Switch	1076H-G	GE Security
3	Silencers	SR 64	Ives

SHW-15

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Mechanical Push Button Combination Lock	L(hand)1021M-26D- 41	Simplex
1	Interchangeable Core	32-0201-26D	Medeco
1	Magnetic Switch	1076H-G	GE Security
3	Silencers	SR 64	Ives
1	Wall Stop	407CVX	Ives

SHW-15A

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Mechanical Push Button Combination Lock	L(hand)1021M-26D – 41	Simplex
1	Interchangeable Core	32-0201-26D	Medeco
1	Maxum Deadbolt	11-C402-26D	Medeco
1	Interchangeable Core	32-0201-26D	Medeco
1	Magnetic Switch	1076H-G	GE Security
3	Silencers	SR 64	Ives
1	Wall Stop	407CVX	Ives

SHW-15B

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Lock set	ML2067 x NSM x 32D x 488F04 outside escutcheon	Corbin Russwin
1	Closer	4041 x Cush-n-Stop – AL	LCN
1	Magnetic Switch	1076H-G	GE Security
3	Silencers	SR 64	Ives

SHW-15C

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Mechanical Push Button Combination Lock	L(hand)1021M-26D – 41	Simplex
1	Interchangeable Core	32-0201-26D	Medeco
1	Maxum Deadbolt	11-C402-26D	Medeco
1	Interchangeable Core	32-0201-26D	Medeco
1	Closer	4041 x Cush-n-Stop – AL	LCN
1	Magnetic Switch	1076H-G	GE Security
3	Silencers	SR 64	Ives

SHW-15D

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Mechanical Push Button Combination Lock	L(hand)1021M-26D – 41	Simplex
1	Interchangeable Core	32-0201-26D	Medeco
1	Maxum Deadbolt	11-C282-26D	Medeco
1	Closer	4041 x Cush-n-Stop – AL	LCN
1	Magnetic Switch	1076H-G	GE Security
3	Silencers	SR 64	Ives

SHW-16

QUAN.	ITEM	MODEL & NOTES	MFR.
6	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
2	Head and Foot Flush Bolts	1413	Hager
1	Mechanical Push Button Combination Lock	L(hand)1021M-26D – 41	Simplex
1	Interchangeable Core	32-0201-26D	Medeco
1	Combination Lock with Deadbolt Extension	8555 x 104 (#9 strike)	Sargent & Greenleaf
2	Magnetic Switch	1076H-G	GE Security
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko
1 Set	Stile Gaskets	375CR	Pemko

SHW-16A

QUAN.	ITEM	MODEL & NOTES	MFR.
6	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
2	Head and Foot Flush Bolts	1413	Hager
1	Mechanical Push Button Combination Lock	L(hand)1021M-26D – 41	Simplex
1	Interchangeable Core	32-0201-26D	Medeco
2	Magnetic Switch	1076H-G	GE Security
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko
1 Set	Stile Gaskets	375CR	Pemko

SHW-16B

QUAN.	ITEM	MODEL & NOTES	MFR.
6	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
2	Head and Foot Flush Bolts	1413	Hager
1	Lock set	ML2067 x NSM x 32D w/ Scalp Plate 402F30	Corbin Russwin
1	Interchangeable Core & Mortise Cylinder	32-0200-26D x CT-Z00	Medeco
2	Closer	4041 x Cush-n-Stop - AL	LCN
1	Magnetic Switch	1076H-G	GE Security
3	Silencers	SR 64	Ives

SHW-17

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Lock set	ML2067 x NSM x 32D w/ Scalp Plate 402F30	Corbin Russwin
1	Interchangeable Core & Mortise Cylinder	32-0200-26D x CT-Z00	Medeco
1	Magnetic Switch	1076H-G	GE Security
3	Silencers	SR 64	Ives
1	Wall Stop	407CVX	Ives

SHW-17A

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Lockset	ML20905 x NSM x 32D	Corbin Russwin
1	Interchangeable Core & Mortise Cylinder	32-0200-26D x CT-Z00	Medeco
1	Digi*Trac Scramble Pad Controller	M2N or M2N 230 (for 230 VAC) or M8N or M8N 230 (specify Model 8's for applications exceeding 2doors)	Hirsch
1	Scramble Pad	DS47L or DS47L-HI (for exterior applications)	Hirsch
1	Mounting Box	MB-8	Hirsch
1	Maxum Deadbolt	11-C402 – 26D	Medeco
1	Interchangeable Core	32-0201 – 26D	Medeco
1	Electric Power Transfer	EPT-2 x SP28	Von Duprin
1	Magnetic Switch	1076H-G	GE Security
3	Silencers	SR 64	Ives
1	Wall Stop	407CVX	Ives

SHW-18

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified / rated door.	
1	Panic Exit Device	RXEL98DT-F x 900DT x 299F strike – 32D	Von Duprin
	Certified Forced Entry Lock	Model and quantity to match certified / rated door.	
1	Combination Lock with Deadbolt Extension	8555 x 102	Sargent & Greenleaf
1	Digi*Trac Scramble Pad Controller	M2N or M2N 230 (for 230 VAC) or M8N or M8N 230 (specify Model 8's for applications exceeding 2doors)	Hirsch
1	Scramble Pad	DS47L or DS47L-HI (for exterior applications)	Hirsch
1	Mounting Box	MB-8	Hirsch
1	Electromagnetic Locking Device	2268-10 x DYNST x 24V	Dynalock
1	Electric Power Transfer	EPT-10 x SP28	Von Duprin
1	Closer	4041-SRI x Cush-n-Stop – AL	LCN
1	Magnetic Switch	1076D-G	GE Security
1	Spin Dial Cover	WPC1020D	Lockmasters
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko

SHW-18A

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified / rated door.	
1	Panic Exit Device	RXEL98NL-F x 990NL-R x 299F strike – 32D	Von Duprin
1	Interchangeable Core & Rim Cylinder	32-0400V-32D x CT-Y32 with cylinder spacer ring	Medeco
	Certified Forced Entry Lock	Model and quantity to match certified / rated door.	
1	Maxum Deadbolt	11-C402 – 26D	Medeco
1	Interchangeable Core	32-0201 – 26D	Medeco
1	Digi*Trac Scramble Pad Controller	M2N or M2N 230 (for 230 VAC) or M8N or M8N 230 (specify Model 8's for applications exceeding 2doors)	Hirsch
1	Scramble Pad	DS47L or DS47L-HI (for exterior applications)	Hirsch
1	Mounting Box	MB-8	Hirsch
1	Electromagnetic Locking Device	2268-10 x DYNST x 24V	Dynalock
1	Recessed Mount Key Control Lockbox with Combination Lock	4440-GCI	KnoxBox
1	Double Pole Single Throw Toggle Switch	Generic	
1	Electric Power Transfer	EPT-10 x SP28	Von Duprin
1	Closer	4041-SRI x Cush-n-Stop – AL	LCN
1	Magnetic Switch	1076D-G	GE Security
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko

SHW-18B

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified / rated door.	
1	Panic Exit Device	RXEL98NL-F x 990NL-R x 299F strike – 32D	Von Duprin
1	Interchangeable Core & Rim Cylinder	32-0400V-32D x CT-Y32 with cylinder spacing ring	Medeco
	Certified Forced Entry Lock	Model and quantity to match certified / rated door.	
1	Maxum Deadbolt	11-C402 – 26D	Medeco
1	Interchangeable Core	32-0201 – 26D	Medeco
1	Digi*Trac Scramble Pad Controller	M2N or M2N 230 (for 230 VAC) or M8N or M8N 230 (specify Model 8's for applications exceeding 2doors)	Hirsch
1	Scramble Pad	DS47L or DS47L-HI (for exterior applications)	Hirsch
1	Mounting Box	MB-8	Hirsch
1	Electromagnetic Locking Device	390+ DSM/MBS	Dynalock
1	Recessed Mount Key Control Lockbox with Combination Lock	4440-GCI	KnoxBox
1	Double Pole Single Throw Toggle Switch		(Generic)
1	Electric Power Transfer	EPT-10 x SP28	Von Duprin
1	Pneumatic Auto-Equalizer	4840	LCN
1	Cover	4840-72MC	LCN
1	Stop	4840-3077CNS Cush-n-Stop	LCN
1	Pneumatic Transfer Hinge	4840-460	LCN
	Pneumatic Tubing	7910-925	LCN
1	Door Control Package	7981 or 7982 (for two doors)	LCN
1	Door Control Relay Interface	941-R	AES
1	Door Control Module	941-M	AES
2	Wall Mounted Switches	625-BL-H-DP – 626	Schlage
1	Magnetic Switch	1076D-G	GE Security
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko

SHW-18C

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified / rated door.	
1	Panic Exit Device	RXEL98NL-F x 990NL-R x 299F strike – 32D	Von Duprin
1	Interchangeable Core & Rim Cylinder	32-0400V-32D x CT-Y32 with cylinder spacing ring	Medeco
	Certified Head and Foot Bolts	Model and quantity to match certified / rated door.	
	Certified Forced Entry Lock	Model and quantity to match certified / rated door.	
1	Maxum Deadbolt	11-C402 – 26D	Medeco
1	Interchangeable Core	32-0201-26D	Medeco
1	Digi*Trac Scramble Pad Controller	M2N or M2N 230 (for 230 VAC) or M8N or M8N 230 (specify Model 8's for applications exceeding 2doors)	Hirsch
1	Scramble Pad	DS47L or DS47L-HI (for exterior applications)	Hirsch
1	Mounting Box	MB-8	Hirsch
1	Electromagnetic Locking Device	390+ DSM/MBS	Dynalock
1	Recessed Mount Key Control Lockbox with Combination Lock	4440-GCI	KnoxBox
1	Double Pole Single Throw Toggle Switch	Generic	
1	Electric Power Transfer	EPT-10 x SP28	Von Duprin
1	Pneumatic Auto-Equalizer	4840	LCN
1	Cover	4840-72MC	LCN
1	Stop	4840-3077CNS Cush-n-Stop	LCN
1	Pneumatic Transfer Hinge	4840-460	LCN
	Pneumatic Tubing	7910-925	LCN
1	Door Control Package	7981 or 7982 (for two doors)	LCN
1	Door Control Relay Interface	941-R	AES
1	Door Control Module	941-M	AES
2	Wall Mounted Switches	625-BL-H-DP-626	Schlage
2	Magnetic Switch	1076D-G	GE Security
1 Set	Weather Stripping	332CR	Pemko
2	Sill Sweep	315CN	Pemko

SHW-19

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified / rated door.	
1	Passage Set	ML2010 x NSM – 32D	Corbin Russwin
	Certified Head and Foot Bolts	Model and quantity to match certified / rated door.	
	Certified Forced Entry Lock	Model and quantity to match certified / rated door.	
	Certified Forced Entry Lock Exterior Keyed Cylinders		Medeco
1	Combination Lock with Deadbolt Extension	8555-102	Sargent & Greenleaf
2	Magnetic Switch	1076H-G	GE Security
1	Spin Dial Cover	WPC1020D	Lockmasters
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko
1 Set	Stile Gaskets	375CR	Pemko

SHW-19A

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified / rated door.	
1	Passage Set	ML2010 x NSM x 32D	Corbin Russwin
	Certified Head and Foot Bolts	Model and quantity to match certified / rated door.	
	Certified Forced Entry Lock	Model and quantity to match certified / rated door.	
	Certified Forced Entry Lock Exterior Keyed Cylinders		Medeco
2	Magnetic Switch	1076H-G	GE Security
1 Set	Weather Stripping	332CR	Pemko
2	Sill Sweeps	315CN	Pemko
1 Set	Stile Gaskets	375CR	Pemko

SHW-19B

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified / rated door.	
1	Passage Set	ML2010 x NSM x 32D	Corbin Russwin
	Certified Forced Entry Lock	Model and quantity to match certified / rated door.	
	Certified Forced Entry Lock Exterior Keyed Cylinders		Medeco
1	Combination Lock with Deadbolt Extension	8555 x 102	Sargent & Greenleaf
1	Closer	4041 x S-H-CNS – AL	LCN
1	Magnetic Switch	1076H-G	GE Security
1	Spin Dial Cover	WPC1020D	Lockmasters
1 Set	Weather Stripping	332CR	Pemko
1	Sill Sweep	315CN	Pemko

SHW-20

QUAN.	ITEM	MODEL & NOTES	
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Mechanical Push Button Combination Lock	L(hand)1021M-26D – 41	Simplex
1	Interchangeable Core	32-0201 – 26D	Medeco
1	Electric Strike	310-2 3/4 x 24 DC	Folger Adam
1	Emergency Switch	RCI-904EB	Rutherford Controls
1	Magnetic Switch	1076H-G	GE Security
3	Silencers	SR 64	Ives
1	Wall Stop	407CVX	Ives

SHW 21

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Passage Set	ML2010 x NSM x 32D	Corbin Russwin
1	Magnetic Switch	1076H-G	GE Security
3	Silencers	SR 64	Ives
1	Wall Stop	407CVX	Ives

SHW-21A

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Lock Set	ML2020 x NSM x 32D	Corbin Russwin
1	Magnetic Switch	1076H-G	GE Security
3	Silencers	SR 64	Ives
1	Wall Stop	407CVX	Ives

SHW-22

QUAN.	ITEM	MODEL & NOTES	MFR.
1	Electric Deadbolt	401R – 24VDC – BUL – MR-626	Rixson
1	Rim Cylinder Holder	401-80 (Hinge)	Rixson
1	Rim Cylinder Closer	As Required by Gate Type	Medeco

SHW-22A

QUAN.	ITEM	MODEL & NOTES	MFR.
1	Fence Gate Housing – Deadbolt	401-118-24VDC-BUL-MR-626	Rixson
1	Locking Tongue	401-110	Rixson
1	Rim Cylinder Holder	401-80 (Rim)	Rixson
1	Rim Cylinder Closer	As Required by Gate Type	Medeco

SHW-25

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified / rated door.	
1	Panic Exit Device	EL98L x 996L-R x 299 strike – 32D	Von Duprin
1	Interchangeable Core & Rim Cylinder	32-0400V-32D x CT-Y32 with cylinder spacing ring	Medeco
	Certified Forced Entry Lock	Model and quantity to match certified / rated door.	
1	Cypher Lock / Keypad	CC-8521B	Moniteq
2	Rechargeable Batteries 7AH	CC-BATT x 12 VDC x 7AH	Moniteq
1	Closer	4041 x Cush-n-Stop – AL	LCN
1	Electric Power Transfer	EPT-2 x SP28	Von Duprin
1	Magnetic Switch	1076D-G	GE Security
1 set	Stile Gasket	375CR	Pemko
1	Latching Panic Exit Saddle	177AS	Pemko
1	Door Bottom Sweep	345A	Pemko

SHW-25A

QUAN.	ITEM	MODEL & NOTES	MFR.
	Certified Forced Entry Hinge	Model and quantity to match certified / rated door.	
1	Lockset	ML2067 x NSM x 32D	Corbin Russwin
1	Interchangeable Core & Mortise Cylinder	32-0200-26D x CT-Z00	Medeco
	Certified Forced Entry Lock	Model and quantity to match certified / rated door.	
1	Closer	4041 x S-H-CNS – AL	LCN
1	Magnetic Switch	1076D-G	GE Security
1 set	Stile Gasket	375CR	Pemko
1	Latching Panic Exit Saddle	177AS	Pemko
1	Door Bottom Sweep	345A	Pemko

SHW 26

QUAN.	ITEM	MODEL & NOTES	MFR.
3	Hinge-NRP (non-removable pin)	BB1199-32D NRP 4-1/2" x 4-1/2"	Hager
1	Panic Exit Device	EL98TP x 990TP-R x 299 strike-32D	Von Duprin
1	Interchangeable Core & Rim Cylinder	32-0400V-32D x CT-Y32 with cylinder spacing ring	Medeco
1	Maxum Deadbolt	11-C422 – 26D	Medeco
2	Interchangeable Core	32-0201 – 26D	Medeco
1	Cypher Lock / Keypad	CC-8521B	Moniteq
1	Rechargeable Batteries	CC-BATT x 12 VDC x 7AH	Moniteq
1	Closer	4041 x Cush-n-Stop –AL	LCN
1	Electric Power Transfer	EPT-2 x SP28	Von Duprin
1	Magnetic Switch	1076D-G	GE Security
1 set	Stile Gasket	375CR	Pemko
1	Latching Panic Exit Saddle	177AS	Pemko
1	Door Bottom Sweep	345A	Pemko

END OF SECTION 08714

SECURITY DOOR HARDWARE SCHEDULE PARAMETERS

The following security hardware schedule parameters are provided as general guidance. The designer is responsible to fully develop the security hardware schedules according to the RFP package, to include the International Building Code (IBC) and IBC Code supplements. The schedules in this section utilize the room descriptions found in the OBO Requirements Integration Package (RIP), as well as the Space Requirements Program (SRP), and are meant to serve as a tool, or guide, to assist the designer in the development of the actual door hardware schedule or schedules. They are organized according to operational function with the RIP or SRP room description used to identify their locations. This means that in some cases the SRP descriptions will be divided so that the doors will be grouped where they are found instead of being grouped solely within their functional prefixes (i.e. building common spaces (prefix Z) will include some IRM (prefix G) and RSO (prefix E) functional spaces). When more than one door provides access to a particular room, or when the RIP/SRP room description does not fully describe a door location, additional information to describe the location has been provided. Doors included in these schedules apply to new office buildings (NOB's), new office annexes (NOX's), compound access control facilities (CAC's) and new embassy compound (NEC) housing (MSGQ and CMR). Post communication center (PCC) hardware is covered separately in the classified criteria.

When preparing the door hardware schedule, the designer shall coordinate/design/update the following: acoustic protection, stops, finishes (for both hardware and doors), thresholds, weather stripping, seals, sweeps, DOS Code (coordinated with required fire protection), degree opening setting for door closers, verifying/selecting models when alternatives are possible, etc. The "Swing" column, along with other information typically found on a door schedule, have been omitted for clarity, since these items are ultimately dictated by the design. RIP or SRP descriptions shall not be included in any post specific schedule. Only door mark number and room numbers are to be used in post specific schedules. Lastly, please note that all forced entry and ballistic resistant (FEBR) doors are to have a reverse bevel swing and the designer is required to use DOS security hardware terminology for swing and FEBR descriptions.

**A - NEW OFFICE BUILDING & NEW OFFICE ANNEX (NOB & NOX)
SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
A-01 Executive Section						
	Executive Section Suite	Suite Entry	2111	SHW-12C		
	Chief of Mission Office (COM)	Entry	2111	SHW-21A		
	Chief of Mission Office (COM)	Back Door	2111	SHW-15D or SHW-15B		Location determines hardware type: (i.e. SHW-15B to another suite when re-entry not required or to a balcony and SHW-15D when exiting/reentry control is required)
	Deputy Chief of Mission (DCM)		2111	SHW-21A		
B-02 Political Section						
	Political Section Suite	Suite Entry	2111	SHW-12C or SHW-11		Use SHW-11 for small suites of up to 3 or 4 individuals
	Political Section Suite	Back Door	2111	SHW-15B		This suite does not typically have a back door, but may be added if required by fire egress requirements.
	Political Chief		2111	SHW-21A		

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SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
C-01 Economic Section						
	Economic Section Suite	Suite Entry	2111	SHW-12 or SHW-11		Use SHW-11 for small suites of up to 3 or 4 individuals
	Economic Section Suite	Back Door	2111	SHW-15B		This suite does not typically have a back door, but may be added if required by fire egress requirements.
	Economic Chief		2111	SHW-21A		
D-01 and D-02 Global Affairs						
	Global Affairs	Suite Entry	2111	SHW-12C		Suite entry door is typically the interior door in a vestibule.
	Global Affairs	Vestibule Suite Entry	2111	SHW-7		Used only in conjunction with a suite entry door as the outer door
	Global Affairs	Back Door	2111	SHW-15D		If this door is identified as a required fire egress, per the IFC, additional signage may be required with regards to operation of the deadbolt.

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Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	Global Affairs	Vestibule Back Door	2111	SHW-15		Used only in conjunction with a suite back door as the outer door
	Global Affairs Chief		2111	SHW-21A		
	Equipment Room		2111	SHW-13		
	Power Room		2111	SHW-13		
	Secure Safe/Pouch Room		2133 and 2111 or 2111	SHW-9 and SHW10 or SHW-11		Use DOS Code 2111, SHW-11 door when SRP indicates only a safe storage room
	Storage Controlled	Near Service Entry	2111 or 3111	SHW-14		
	Disintegrator Room		2111	SHW-16	Provide sound insulation/ Treatment	

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Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
E. Diplomatic Security						
E-01 Regional Security Office (RSO)						
	Regional Security Office (RSO)	Suite Entry	2111	SHW-12C or SHW-11		Use SHW-11 for small suites of up to 3 or 4 individuals
	Regional Security Office (RSO)	Back Door	2111	SHW-15B		This suite does not typically have a back door, but may be added if required by fire egress requirements.
	Regional Security Officer		2111	SHW-21A		
	ID Picture Area		2111	SHW-15C		Only when outside of CAA suite, otherwise no special hardware required when inside of a CAA suite
	Storage		2111	SHW-13		

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Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
E-02 Engineering Services Office (ESO)						
	E-11 Storage & Workshop for SEO	Within RSO Suite	2111	SHW-11		Only when there is no ESO or ESC at Post
	Engineering Services Office	Suite Entry	2111	SHW-12C or SHW-11		Use SHW-11 for small suites of up to 3 or 4 individuals
	Engineering Services Office	Back Door	2111	SHW-15B		This suite does not typically have a back door, but may be added if required by fire egress requirements.
	Security Engineering Officer(SEO)		2111	SHW-21A		
	Security Technical Specialist					
	Vault		2133 and 2111	SHW-9 and SHW10		

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SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
E-03 Engineering Services Center (ESC)						
	Engineering Services Office	Suite Entry	2111	SHW-12C		
	Engineering Services Office	Back Door	2111	SHW-15B		This suite does not typically have a back door, but may be added if required by fire egress requirements.
	Officer In Charge		2111	SHW-21A		
	Vault		2133 and 2111	SHW-9 and SHW10		
E-06 Marine Security Guards (MSG)						
	Marine Security Guard Suite	Suite Entry	2111	SHW-11A or SHW-15C		Specify SHW-15C for small (5-6 man detachments) or at existing Post with the approval of COR thru OBO/CFSM physical security engineer

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SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	Marine Security Guard Suite	Back Door	2111	SHW-15B		This suite does not typically have a back door, but may be added if required by fire egress requirements.
	Detachment Commander		2111	SHW-21A		
	React Room	Within MSG Suite	----	----		No special Hardware required.
	React Room	Stand Alone React Room	2111	SHW-11A or SHW-15C		Specify SHW-15C for small (5-6 man detachments) or at existing Post with the approval of COR thru OBO/CFSM physical security engineer

F. Post Cost Communication Center (PCC)

See Classified Criteria

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SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
G. Information Resource Management (IRM)						
G-01 IRM Office						
	IRM Suite		2111	SHW-7C		
	Staging - PC Equipment		2111	SHW-14A		
	Storage		2111	SHW-14A		
	Computer Room(s) - UCR		2111	SHW-11		
	Server Space(s) for XXX Agency		2111	SHW-11	Provide sound insulation/ Treatment when within suite	Can also be distributed to each tenant's space or several share one room with partitioned/secured areas for each server, if approved/coordinated by IRM.
G-02 Telephone & Radio Support						
	Telephone Workshop		2111	SHW-15A		
	Radio Workshop		2111	SHW-15A		
	Storage		2111	SHW-13		
	Radio Repeating Equipment - Controlled		2111	SHW13		

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Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	Storage, Radio Room for DES Radios		2111	SHW13		
G-03 Mail Room						
	Mail Room	Main Entry to Corridor	3111 or 2111	SHW16 or SHW-15A		Typically a door pair. In single door applications use SHW-15A
	Mail Room	Access to Reproduction / Distribution Room	3111 or 2111	SHW-15A		
H. Management Sections						
H-01 through H-03 Management Office						
	Cashier Booth		3111 or 2111	SHW-15A		

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SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	Storage (Controlled)		3111 or 2111	SHW-13 or SHW-15A		Frequency of use determines hardware
	Computer/ Equipment Support Area		3111 or 2111	SHW-13 or SHW-14A		Coordinate use/application with OBO
H-05 Health Unit						
	Health Unit	Suite Entry	2111	SHW-12B	A kick stand hold open may be added to this door	
	Health Unit	Back Door	2111	SHW-15B or SHW-15D		This suite does not typically have a back door, but may be added if required by fire egress requirements or access requirements. Location determines hardware type: (i.e. SHW-15B to another suite when re-entry not required and SHW-15D when exiting/reentry control is required)
	Pharmacy		2111	SHW-11A		

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Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
J. Public Affairs Office						
J-06 Information Resource Center						
	Information Resource Center (IRC)	Main Lobby to IRC (Public Entry)	1123	SHW-1B or SHW -5A		SHW-5A is only allowed in large IRC application with the permission of COR based on input from OBO/CFMS physical security engineer and DS/PSP/PSD
	Information Resource Center	Egress/Entry door to GWA	2141	SHW-2E		
K. Consular Section						
	Consular Office Staff Area	Suite Entry	3111 or 2111	SHW-7		May be more than one entry
	Consular Officer	C Chief	3111 or 2111	SHW-21A		

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SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	Cashier(s) service area		3111 or 2111	SHW-15A		
	Storage, ACS Estate		3111 or 2111	SHW-13A		
MC. Narcotics Affairs Sections (NAS)						
	Narcotics Affairs Sections (NAS)	Suite Entry	2111	SHW-12C or SHW-11 or HW Set		When located in the CAA, specify SHW-11 for small suites of up to 3 or 4 individuals and SHW-12C for larger suites. No special security hardware when located outside of the CAA.
	Narcotics Affairs Sections (NAS)	Back Door	2111	SHW-15B or HW Set		This suite does not typically have a back door, but may be added if required by fire egress requirements. No special security hardware when located outside of the CAA.

**A - NEW OFFICE BUILDING & NEW OFFICE ANNEX (NOB & NOX)
SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	Chief		2111	SHW-21A		
P-01 Department of Defense Offices (DOD)						
	Defense Attaché Suite	Suite Entry	2111	SHW-12C		
	Defense Attaché Suite	Back Door	2111	SHW-15B		This suite does not typically have a back door, but may be added if required by fire egress requirements.
	Defense Attaché		2111	SHW-21A		
	Storage Secure		2111	SHW-14		
	Systems Room		2133 and 2111	SHW-9 and SHW-10A		

**A - NEW OFFICE BUILDING & NEW OFFICE ANNEX (NOB & NOX)
SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
P-04 Security Assistance Office (SAO) (ODC or MLO)						
	Security Assistance Office (SAO) (ODC or MLO)	Suite Entry	2111	SHW-12C or SHW-11 or SHW-15C		When located in the CAA, specify SHW-11 for small suites of up to 3 or 4 individuals and SHW-12C for larger suites. Specify SHW-15C when suite is not located within the CAA.
	Security Assistance Office (SAO) (ODC or MLO)	Back Door	2111	SHW-15B		This suite does not typically have a back door, but may be added if required by fire egress requirements.
	Systems Room		2111	SHW-11		

**A - NEW OFFICE BUILDING & NEW OFFICE ANNEX (NOB & NOX)
SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
Q. Department Of Justice Office (DOJ)						
Q-03 Drug Enforcement Agency (DEA)						
	Drug Enforcement Agency (DEA)	Suite Entry	2111	SHW-12C or SHW-11 or SHW-15A		When located in the CAA, specify SHW-11 for small suites of up to 3 or 4 individuals and SHW-12C for larger suites. Specify SHW-15A when suite is not located within the CAA.
	Drug Enforcement Agency (DEA)	Back Door	2111	SHW-15B		This suite does not typically have a back door, but may be added if required by fire egress requirements.
	DEA Attaché		2111	SHW-21A		
	Systems Room		2133 and 2111	SHW-9 and SHW-10A	Provide sound insulation/ Treatment when within suite	

**A - NEW OFFICE BUILDING & NEW OFFICE ANNEX (NOB & NOX)
SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
Q-05 Department Of Justice (FBI/LEGAT)						
	FBI/LEGAT	Suite Entry	2111	SHW-12C or SHW-11		Specify SHW-11 for small suites of up to 3 or 4 individuals and SHW-12C for larger suites.
	FBI/LEGAT	Back Door	2111	SHW-15B		This suite does not typically have a back door, but may be added if required by fire egress requirements.
	FBI (Chief)		2111	SHW-21A		
	Systems Room		2111	SHW-11		
R-02 Department Of Homeland Security						
	Bureau Of Citizenship & Immigration Services (USCIS)	Suite Entry	2111	SHW-15A		

**A - NEW OFFICE BUILDING & NEW OFFICE ANNEX (NOB & NOX)
SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	Bureau Of Citizenship & Immigration Services (USCIS)	Back Door	2111	SHW-15B or SHW-15D		This suite does not typically have a back door, but may be added if required by fire egress requirements or access requirements. Location determines hardware type: (i.e. SHW-15B to another suite when re-entry not required and SHW-15D when exiting/reentry control is required)
	Chief		2111	SHW-21A		
	Systems Room		3111 or 2111	SHW-11	Provide sound insulation/ Treatment when within suite	
R-04 Customs and Boarder Protection						
	Systems Room		3111 or 2111	SHW-11		

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SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
R-05 US Secret Service						
	US Secret Service	Suite Entry	2111	SHW-12C or SHW-11		Use SHW-11 for small suites of up to 3 or 4 individuals
	US Secret Service	Back Door	2111	SHW-15B		This suite does not typically have a back door, but may be added if required by fire egress requirements.
	Officer - Chief		2111	SHW-21A		
	Systems Room		2111	SHW-11	Provide sound insulation/ Treatment when within suite	
	Commission Director - Regional Director		2111	SHW-21A		

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SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
S-01 Department Of Agriculture						
	P-6 and P-16 Systems Room		3111 or 2111	SHW-11	Provide sound insulation/ Treatment when within suite	
T-01 Department Of Commerce						
	Systems Room		3111 or 2111	SHW-11	Provide sound insulation/ Treatment when within suite	
T-02 Foreign Commercial Library						
	Foreign Commercial Library	Main Lobby/ Public Entry	1123	SHW-1B		There are some cases that this space is Not located off of lobby; in that case, coordinate hardware and DOS rating to match location/ SRP requirements. COR approval based on input of OBO/CF/SM physical security engineer of hardware/DOS code is required.

**A - NEW OFFICE BUILDING & NEW OFFICE ANNEX (NOB & NOX)
SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
W. Broadcast Open Source Center (formally FBIS)/VOA/IBB						
	Broadcast Open Source Center/VOA/IBB	Suite Entry	3111 or 2111	SHW-15A		
	Broadcast Open Source Center /VOA/IBB	Suite Exit	3111 or 2111	SHW-15A		
	Computer Room		3111 or 2111	SHW-11		
X. Shared Office Support – Post Facility						
X-05 Shared/Other						
	Conference Rooms -Type II		2111	SHW-11		
	Conference Room (Non-Type II) within CAA	Within CAA Suite	2111	----		No SHW set required

**A - NEW OFFICE BUILDING & NEW OFFICE ANNEX (NOB & NOX)
SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	Conference Room (Non-Type II) within CAA	Corridor to Conference Room	2111	SHW-11		
	Training, Computer terminals		3111 or 2111	SHW-15		
	Training, Computer terminals within the CAA	Within CAA Suite	2111	----		No SHW set required
	Training, Computer terminals within the CAA	Corridor to Room	2111	SHW-11		
X-05 Growth Workstations						
	Workstation, Growth – CAA (When an enclosed office)	Within CAA Suite	2111	----		No SHW set required
	Workstation, Growth – CAA (When an enclosed office)	Corridor to Room	2111	SHW-11		
	Workstation, Growth – CAA Suite	Suite Entry	2111	SHW-12C or SHW-11		Use SHW-11 for small suites of up to 3 or 4 individuals

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SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
Y. Support Functions						
Y-03 Multipurpose Room						
	Multipurpose Room	Public Entry	1123	SHW-1B or SHW 1B and SHW-5D		SED's and large multipurpose rooms use SHW-1B and SHW-5D (Two doors – one in and one out)
	Multipurpose Room	Public to GWA	2123	SHW-2B		
Y-04 Commercial Bank						
	Commercial Bank	Public/ Suite Entry	3111 or 2111	SHW-15A		
Z. Building Common						
	Z-02 Main Entrance (exterior hardline)	Lobby / Waiting	1123	SHW-5A		

**A - NEW OFFICE BUILDING & NEW OFFICE ANNEX (NOB & NOX)
SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	Z-02 Main Exit (exterior hardline)	Lobby / Waiting	1123	SHW-5B		
	Z-02 Main Entrance (exterior hardline) Lock and Leave Applications	Lobby / Waiting	1123	SHW-2D or SHW-2A		Specify SHW-2A when compliance with ADA/ABA accessibility is not required.
	Main Entrance Annex or GSO Building (exterior hardline)	Lobby / Waiting	1123	SHW-2D or SHW-2B or SHW-2C		SHW-2B and SHW-2C are sometimes used in existing building applications or very small annexes. Coordinate selection with COR based on input from OBO/CFSM physical security engineer.
	Z-02 Main Entrance (interior hardline)	Lobby to GWA	1123	SHW-1B		
	Z-02 Main Entrance (interior hardline) Lock and Leave Applications	Lobby to GWA	1123	SHW-18B		

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SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	Main Entrance Annex (interior hardline)	Lobby to GWA	1123	SHW-1B or SHW-2D or SHW-2A		Specify SHW-2D or SHW-2A when there is no receptionist/guard assigned to control the interior hardline. SHW-2A when compliance with ABA accessibility is not required. Not all Annexes have interior hardline or control door. Exterior keyed FEL's are also sometimes provided; coordinate with COR based on input from OBO/CFSM physical security engineer.
	E-06 Guard Post #1 (MSG) and Guard Post # 2		1123	SHW-3		½ Vision; No change in hardware when Post 1 or Post 2 is NOT staffed by an MSG
	G-02 EC Room		2111 or 3111	SHW-13 or SHW-17		Use SHW-17 when 24/7 AC is NOT provided
	G-02 EC Room – Lock and Leave Applications		2111 or 3111	SHW-17A		

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SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	E-01 Interview Room	Main Lobby to Interview Room	2123	SHW-1	Provide sound insulation/treatment	
	E-01 Interview Room	Interview Room to Anti-room	2111 or 3111	SHW-15	Provide sound insulation/treatment	
	E-01 Interview Room	Anti-room to GWA	2123	SHW-2E	Provide sound insulation/treatment	
	E-01 Consular Entrance	Building Exterior to Security Screening	1123	SHW-5A		
	E-01 Consular Entrance	Main Lobby to Security Screening/Waiting Area	1123	SHW-1D or SHW1B		Specify SHW-1B only when there is NO consular access/entry direct from the exterior (compound).

**A - NEW OFFICE BUILDING & NEW OFFICE ANNEX (NOB & NOX)
SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	E-01 Service Entrance	Building Exterior/ Loading Dock to Security Screening	1123	SHW-6A or SHW-6		Use SHW-6A when the entry doubles as an employee entry (typical for an SED). ½ vision top in SHW-6A applications.
	E-01 Service Entrance	Security Screening to GWA/ Employee Entry	1123	SHW-6A		½ vision top
	F-05 Pouch Vault	Near Service Entry	2133 and 2111	SHW-9 and SHW-10		
	D-02 Storage, Controlled	Near Service Entry	2111 or 3111	SHW-14		

**A - NEW OFFICE BUILDING & NEW OFFICE ANNEX (NOB & NOX)
SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	Limited Access Area (LAA) Lock and Leave applications	GWA to LAA	2141	SHW-18 or SHW-18A or SHW-18C		Configuration of the door determines hardware
	H-29 Driver's Lounge (when separated by a hardline from the building)	Building Exterior to Lounge	1123	SHW-2A or SHW-2C		Use SHW-2C for very small or existing facilities with COR approval based on OBO/CFSM physical security engineer input. When entry is located within service entry lobby (special case), no SHW hardware required. Exterior keyed FEL's are sometimes provided; coordinate this requirement with COR using physical security engineer input.
	Circulation, Community Areas or any Space Requiring an Emergency Exit(s)	Building Exterior Hardline	1123 or 2123	SHW-8		

**A - NEW OFFICE BUILDING & NEW OFFICE ANNEX (NOB & NOX)
SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	Circulation, Community Areas or any Space Requiring an Emergency Exit (Lock and Leave Bypass Door)	Building Exterior to GWA	1123 or 2123	SHW-8B		Typically one emergency exit specified with this door hardware, all other emergency exits should have SHW-8 hardware
	Circulation or any Space that Provides Primary Access to the CAA Buffer Area	GWA access to CAA Buffer	2111	SHW-7D		For small Posts coordinate the specification of a SHW-7 series hardware alternatives with COR based on input from OBO/CFSM physical security engineer. Requires wall-mounted telephone and phone list in vestibule, adjacent to door.
	Circulation, Stairwell or any Space that Provides Secondary Access to the CAA Buffer	GWA Rear access to CAA Buffer	2111	SHW-7 or SHW-7A or SHW-7D		Location determines hardware type: (i.e. Specify SHW-7D for SED's or NOB's, Use SHW-7 and SHW-7A (Same as SHW-7, but with Emergency Exit Device) only at small Posts or when used in a isolated lobby or stair. Requires wall-mounted telephone and phone list in vestibule, adjacent to door.

**A - NEW OFFICE BUILDING & NEW OFFICE ANNEX (NOB & NOX)
SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	Primary Access to the CAA Buffer via a double door		2111	SHW-16A		Specified only when remote access is not required, Typically located on the 3 rd floor of an SED. In addition, a wall-mounted telephone and phone list is provided adjacent to the door.
	Building Safe Area (Other than or in addition to the PCC)		2123 or 1123	SHW-4 or SHW-4A or SHW-4B		Specify at existing posts or when only a safe area is required. Glazing is generally limited to 100mm x 500mm opening. SHW set is determined by the secondary use of the space (i.e. specify SHW-4 for a regular office space, SHW-4B for CAA office and SHW-4A when in a hallway or combined with another door)
	Building Safe Haven (Other than or in addition to the PCC)		2133	SHW-4 or SHW-4A or SHW-4B		No glazings are allowed, except a peep hole. SHW set is determined by the secondary use of the space (i.e. specify SHW-4 for a regular office space, SHW-4B for CAA office and SHW-4A when in a hallway or combined with another door)

**A - NEW OFFICE BUILDING & NEW OFFICE ANNEX (NOB & NOX)
SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	Roof (non-hardline access)		2111	SHW-13A		
Building System						
	G-02 NOB Telecommunications Service Entrance Facility (NOB TSEF)		2111 or 3111	SHW-13		
	G-02 Main Terminal Space (MTS)		2111 or 3111	SHW-13		
	G-02 Telecommunications Equipment Room (PBX)		2111 or 3111	SHW-13		
	G-02 Telecommunications Equipment Room	When Distributed on Each Floor	2111	SHW-14 or SHW-13		Assumes C-LAN switches co-located; if not, specify SHW-13

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 SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	F-05 Switchgear, Secondary (Serving the PCC or any forced entry protected power source)		2133	SHW-19B	Provide sound insulation/ treatment	
	F-05 Generator (PCC)		2133	SHW-19 or SHW19B	Provide sound insulation/ treatment	Use SHW-19 for door pairs and SHW-19B for single door applications
	H-38- Generator (Protected, Non-PCC)		2123 or 2133	SHW-19A	Provide sound insulation/ Treatment when located within/close to an office building	For 15 minute FE/BR applications specify DOS Code 2123 and for 60 minute FE/BR (safe haven) applications specify DOS Code 2133
	Electrical Rooms	Office Building and CAC's	2111 or 3111	SHW-13 or SHW-16B		Specify SHW-16B for double doors

**A - NEW OFFICE BUILDING & NEW OFFICE ANNEX (NOB & NOX)
 SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	Mechanical Rooms	Office Building and CAC's	2111 or 3111	SHW-13 or SHW-16B		Specify SHW-16B for double doors
	RMS, Cooling Towers or any other roof mounted structure with a door	Roof	2111	SHW-13		

B - PEDESTRIAN/CONSULAR CAC (PEDESTRIANS ONLY)
SECURITY DOOR HARDWARE SCHEDULE PARAMETERS

Rm. No. (A/E to Assign)	Plan, RIP or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	E-14 Security Screening	Street Side Entry	1141	SHW-5A		
	E-14 Security Screening	Exit to street	1141	SHW-5B		
	E-14 Security Screening	Exit to Compound	1111	SHW-12A		
	E-14 Security Screening	Compound side entry	1111	SHW-12A		
	K-12 Consular Pass back Booth		1123	SHW-2C		
	E-14 Electrical Room(s)		2111	SHW-13 or SHW-16B		Use SHW-16B for a pair of doors

**C - MAIN ENTRANCE CAC (VEHICLE/PEDESTRIAN)
SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	E-14 Security Screening	Street side entry	1141	SHW-5A		
	E-14 security Screening	Exit to Street	1141	SWH-5B		
	E-14 Guard Booth		1123	SHW-3		
	E-14 Security Screening	Sally Port	1111	SHW-12E		
	Sally Port	Compound	--	SHW-22 or SHW-22A		Control in CAC Guard Booth with override controls at MSG Post 1
	E-14 Mech. And Elec. Hydraulic Room(s)	Compound	2111	SHW-13 or SHW-16B		Specify SHW-16B for door pair
	E-14 Security Screening	Exit to Compound	1111	SHW-12A		
	E-14 Security Screening	Compound side entry	1111	SHW-12A		

**C - MAIN ENTRANCE CAC (VEHICLE/PEDESTRIAN)
SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	E-14 or G-02 EC Room (TSS)		2111 or 3111	SHW-13 or SHW-17		Use SHW-17 when 24/7 AC is NOT provided
	E-14 Storage Closet	Sally Port	2111	SHW-16B		

**D - SERVICE ENTRANCE CAC (VEHICULAR/PEDESTRIAN)
SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	E-14 Security Screening	Street Side Entry	1141	SHW-5A or SHW-1B		SHW-5A is recommend; SHW-1B is provided on the SED GPE order and is also acceptable
	E-14 Guard Booth		1123	SHW-3		
	E-14 Security Screening	Sally Port	1111	SHW-12E		
	Sally Port	Compound	---	SHW-22 or SHW-22A	---	Control in CAC Guard Booth with override controls at MSG Post 1
	E-14 Storage Closet	Sally Port	2111	SHW-16B		Pair
	E-14 Security Screening	Exit to Compound/ Compound Entry	1111	SHW-12A		
	E-14 Security Screening area	Exit to Street	1141	SHW-5B		

**D - SERVICE ENTRANCE CAC (VEHICULAR/PEDESTRIAN)
SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	E-14 or G-02 EC Room (TSS)		2111 or 3111	SHW-13 or SHW-17		Use SHW-17 when 24/7 AC is NOT provided
	E-14 Transfer Portion	Street Side Loading Dock	---	--	---	Overhead door. Use two (2) Padlocks -- Medeco 54- 510R00KA. Exterior.
	E-14 Transfer Portion	Compound Loading Dock	---	--	---	Overhead door. Use two (2) Padlocks -- Medeco 54- 510R00KA. Exterior.
	E-14 Transfer Portion	Compound Pedestrian Entry	2111	SHW-13		Exterior.
	E-14 Mech. And Elec. Hydraulic Room	Compound	2111	SHW-16B		
	E-14 Initial Screening (Mail)	Entry	1111	SHW-13		This facility may also be located as a stand alone booth.
	G-02 Telecommunications Service Entry	Public/ Street	2111	SHW-13 or SHW-16B		Specify SHW-16B for door pairs.

**D - SERVICE ENTRANCE CAC (VEHICULAR/PEDESTRIAN)
SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	G-02 Telecommunications Service Entry	Compound	2111	SHW-13 or SHW-16B		Specify SHW-16B for door pairs.
	H-38 Electrical Room	Public/ Street	2111	SHW-13 or SHW-16B		Specify SHW-16B for door pairs.
	H-38 Electrical Room	Compound	2111	SHW-13 or SHW-16B or per local regulation		Specify SHW-16B for door pairs
	H-38 Water Meter Room	Public/ Street	2111	SHW-13 or SHW-16B or per local regulation		Specify SHW-16B for door pairs.

**E - MARINE SECURITY GUARD QUARTERS (MSGQ)
SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	E-18 Foyer/Lobby	Public Entrance	1123 or 1111	SHW-25 or SHW-26		FY06 and FY07 GPE based projects specify the SHW-26 DOS Code 1111 door, all others use SHW-25, DOS Code 1123
	E-18 Patio and Ground Floor Rooms	*Exterior Entry/Exit Doors	1123 or 2123 or 1111 or 2111or 3111	SHW-25A or SHW-15B		FY06 and FY07 GPE based projects use the SHW-15B, DOS xx11door, all others use SHW-25, DOS Code xx23 doors. *Any doors that are also accessible from a DOS ant-climb standard, must also be specified with the SHW-25A or SHW-15B (FY06 and FY07 only) hardware accordingly.

**F - CHIEF OF MISSION (CMR)
SECURITY DOOR HARDWARE SCHEDULE PARAMETERS**

Rm. No. (A/E to Assign)	Plan, RIP, or SRP Room Description	Location	DOS Code	Security Hardware	Modifications	Comments
	Foyer/Lobby	Public Entrance	1123 or 2123 or 1111	SHW-25A or HW-		FY06 and FY07 GPE based projects use a similar HW set, DOS Code xx11door, all others use SHW-25A, DOS Code xx23 door.
	Patio and Ground Floor Rooms	*Exterior Entry/Exit Doors	1123 or 2123 or 1111 or 2111 or 3111	SHW-25A or SHW-15B		FY06 and FY07 GPE based projects use the SHW-15B, DOS xx11door, all others use SHW-25A, DOS Code xx23 doors. *Any doors that are also accessible from a DOS anti-climb standard, must also be specified with the SHW-25A or SHW-15B hardware accordingly.

DIVISION 9 – FINISHES

SECTION 09912 - PAINTING

PART 1 - GENERAL

1.1 Products and materials in this Section have been selected for one or more of the following: recycled material content; resource reuse; rapidly renewable materials; certified wood; regionally manufactured materials; regionally extracted materials; water use reduction; innovative wastewater technologies; stormwater management; light pollution reduction; exterior heat island reduction; energy efficiency; indoor chemical and pollutant source control; CFC reduction; elimination of HCFC's and halons; and/ or low-VOC emitting characteristics.

1.2 SUMMARY

- A. This Section includes surface preparation and field painting of exposed exterior and interior items and surfaces.
 - 1. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.
- B. Paint exposed surfaces, except where these Specifications indicate that the surface or material is not to be painted or is to remain natural. If an item or a surface is not specifically mentioned, paint the item or surface the same as similar adjacent materials or surfaces. If a color of finish is not indicated, COR will select from standard colors and finishes available.
 - 1. Painting includes field painting of exposed bare and covered pipes and ducts (including color coding), hangers, exposed steel and iron supports, and surfaces of mechanical and electrical equipment that do not have a factory-applied final finish.
- C. Do not paint prefabricated items, concealed surfaces, finished metal surfaces, operating parts, and labels.
 - 1. Prefabricated items include the following factory-finished components:
 - a. Architectural woodwork.
 - b. Acoustical wall panels.
 - c. Metal lockers.
 - d. Unit kitchens.
 - e. Elevator equipment.
 - f. Finished mechanical and electrical equipment.
 - g. Light fixtures.
 - 2. Concealed surfaces include walls or ceilings in the following generally inaccessible spaces:
 - a. Foundation spaces.
 - b. Furred areas.

- c. Ceiling plenums.
 - d. Utility tunnels.
 - e. Pipe spaces.
 - f. Duct shafts.
 - g. Elevator shafts.
3. Finished metal surfaces include the following:
 - a. Anodized aluminum.
 - b. Stainless steel.
 - c. Chromium plate.
 - d. Copper and copper alloys.
 - e. Bronze and brass.
4. Operating parts include moving parts of operating equipment and the following:
 - a. Valve and damper operators.
 - b. Linkages.
 - c. Sensing devices.
 - d. Motor and fan shafts.
5. Labels: Do not paint over UL, FMG, or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

1.3 REFERENCES

1. Code of Federal Regulations (CFR), Title 40, Chapter I, Part 51.100.
2. U.S. Environmental Protection Agency (EPA), Test Method 24 – Determination of Volatile Matter Content, Water Content, Density, Volume Solids, And Weight Solids of Surface Coatings.
3. Green Seal Environmental Standard GS-11, Paints.
4. Green Seal Environmental Standard GC-03, Anti-Corrosive Paints.
5. State of California Air Resources Board (CARB), Suggested Control Measure for Architectural Coatings.
6. South Coast Air Quality Management District, Rule 1113: Architectural Coatings.

1.4 DEFINITIONS

1. Volatile Organic Compounds (VOCs): Compounds as defined by the U.S. Environmental Protection Agency (EPA) in 40 CFR § 51.100 (s), (1).
2. Anti-Corrosive Paints: Coatings formulated and recommended for use in preventing the corrosion of ferrous metal substrates.

1.5 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Initial Selection: For each type of topcoat product indicated.
- C. Samples for Verification: For each type of paint system and in each color and gloss of topcoat indicated.
 - 1. Submit Samples on rigid backing, 200 mm square.
 - 2. Step coats on Samples to show each coat required for system.
 - 3. Label each coat of each Sample.
 - 4. Label each Sample for location and application area.
- D. Product List: For each product indicated, include the following:
 - 1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
 - 2. Printout of current "MPI Approved Products List" for each product category specified in Part 2, with the proposed product highlighted.
- E. LEED Submittals: For Credit EQ 4.2, manufacturers' product data for paints, including printed statement of VOC content and chemical components.
- F. Flat and Non-Flat Interior Coatings: Provide a certification by the manufacturer that products supplied comply with the Volatile Organic Compound (VOC) and chemical component restrictions of the Green Seal Environmental Standard GS-11, if the product is a flat or non-flat interior coating applied indoors and on-site.
- G. Anti-Corrosive Coatings: Provide a certification by the manufacturer that products supplied comply with the Volatile Organic Compound (VOC) and chemical component restrictions of Green Seal Environmental Standard GC-03, if the product is an anti-corrosive coating applied indoors and on-site.
- H. Other Interior Coatings: If the product is applied indoors and on-site, and not covered by both the Green Seal Environmental Standard GS-11 and Standard GC-03, provide a certification by the manufacturer that products supplied comply with the chemical component restrictions of the Green Seal Environmental Standard GS-11, Paints, and comply with the Volatile Organic Compound (VOC) restrictions of the State of California Air Resources Board (CARB) Suggested Control Measure for Architectural Coatings, and the South Coast Air Quality Management District Rule 1113: Architectural Coatings

1.6 PROJECT CONDITIONS

- A. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 7 deg C. Maintain storage containers in a clean condition, free of foreign materials and residue.

- B. Apply waterborne paints only when temperatures of surfaces to be painted and surrounding air are between 10 and 32 deg C.
- C. Apply solvent-thinned paints only when temperatures of surfaces to be painted and surrounding air are between 7 and 35 deg C.
- D. Do not apply paint in snow, rain, fog, or mist; or when relative humidity exceeds 85 percent; or at temperatures less than 3 deg C above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Provide paint products by one of the following manufacturers:
 - 1. Benjamin Moore
 - 2. PPG Industries
 - 3. Sherwin-Williams

2.2 PAINT MATERIALS, GENERAL

- A. Material Compatibility: Provide block fillers, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.
- C. Chemical Components of Interior Paints and Coatings: Provide products that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24) and the following chemical restrictions.
 - 1. The following chemicals shall not be used as an ingredient in any of the paints or coatings applied indoors and on-site:
 - a. Aromatic Compounds: The product must contain no more than 1.0% by weight of the sum total of aromatic compounds.
 - b. Halomethanes: Methylene Chloride.
 - c. Chlorinated Ethanes: 1,1,1-trichloroethane.
Aromatic Solvents: Benzene, Toluene (methylbenzene), Ethylbenzene.
 - d. Chlorinated Ethylenes: Vinyl Chloride.
 - e. Polynuclear Aromatics: Naphthalene.
 - f. Chlorobenzenes: 1,2-dichlorobenzene.
 - g. Phthalate Esters: di (2-ethylhexyl) phthalate, butyl benzyl phthalate, di-n-butyl phthalate, di-n-octyl phthalate, diethyl phthalate, dimethyl phthalate.

- h. Miscellaneous Semi-Volatile Organics: Isophorone. Metals and their compounds: Antimony, Cadmium, Hexavalent Chromium, Lead, Mercury.
 - i. Preservatives (Anti-Fouling Agents): Formaldehyde.
 - j. Ketones: Methyl ethyl ketone, Methyl isobutyl Ketone.
 - k. Miscellaneous Volatile Organics: Acrolein, Acrylonitrile.
2. Volatile Organic Compounds: The volatile organic compound (VOC) concentrations (in grams per liter) of the paint or coating shall not exceed those listed below if the paint or coating is applied indoors, on-site. VOCs shall be tested in accordance with the U.S. Environmental Protection Agency (EPA) Test Method 24. The calculation of VOC shall exclude water, exempt solvents, and tinting color added at the point of sale.

**NOTE: EDIT THE TEXT BELOW TO MATCH PAINTS AND
COATINGS SPECIFIED FOR PROJECT.**

- 1. Flat Interior Coatings: 50 g/L.
- 2. Non-Flat Interior Coatings: 150 g/L.
- 3. Gloss Anti-Corrosive Interior Coatings: 250 g/L.
- 4. Semi-Gloss Anti-Corrosive Interior Coatings: 250 g/L.
- 5. Flat Anti-Corrosive Interior Coatings: 250 g/L.
- 6. Anti-Fouling Coatings: 400 g/L.
- 7. Bond Breaker Coatings: 350 g/L.
- 8. Concrete Curing Compounds: 350 g/L.
- 9. Faux Finishing/Glazing (Japans) Coatings: 350 g/L.
- 10. Fire Resistive Coatings: 350 g/L.
- 11. Fire Retardant, Clear Coatings: 650 g/L.
- 12. Fire Retardant, Opaque (Pigmented) Coatings: 350 g/L.
- 13. Floor Coatings: 250 g/L.
- 14. Flow Coatings: 420 g/L.
- 15. Form Release Compounds: 250 g/L.
- 16. Graphic Arts (Sign Paints): 500 g/L.
- 17. High Temperature Coatings: 420 g/L.
- 18. Industrial Maintenance Coatings: 250 g/L.
- 19. Lacquers (including lacquer sanding sealers): 550 g/L.
- 20. Lacquers, Clear Brushing: 680 g/L.
- 21. Low Solids Coatings: 120 g/L.
- 22. Magnesite Cement: 450 g/L.

23. Mastic Texture: 300 g/L.
24. Metallic Pigmented Coatings: 500 g/L.
25. Multi-Color Coatings: 250 g/L.
26. Pre-Treatment Wash Primers Coatings: 420 g/L.
27. Recycled Coatings: 250 g/L.
28. Sanding Sealers (Non-Lacquer): 350 g/L.
29. Shellacs, Clear: 730 g/L.
30. Shellacs, Opaque: 550 g/L.
31. Specialty Primers, Sealers, and Undercoaters: 350 g/L.
32. Stains: 250 g/L.
33. Swimming Pool Coatings: 340 g/L.
34. Swimming Pool Repair and Maintenance Coatings: 340 g/L.
35. Temperature-Indicator Safety Coatings: 550 g/L.
36. Varnishes: 350 g/L.
37. Waterproofing Sealers: 250 g/L.
38. Waterproofing Sealers, Concrete/Masonry: 400 g/L.
39. Wood Preservatives: 350 g/L.

2.3 PREPARATORY COATS

- A. Concrete Unit Masonry Block Filler: High-performance latex block filler of finish coat manufacturer and recommended in writing by manufacturer for use with finish coat and on substrate indicated.
- B. Exterior Primer: Exterior alkyd or latex-based primer of finish coat manufacturer and recommended in writing by manufacturer for use with finish coat and on substrate indicated.
 1. Ferrous-Metal and Aluminum Substrates: Rust-inhibitive metal primer.
 2. Zinc-Coated Metal Substrates: Galvanized metal primer.
 3. Where manufacturer does not recommend a separate primer formulation on substrate indicated, use paint specified for finish coat.
- C. Interior Primer: Interior latex-based or alkyd primer of finish coat manufacturer and recommended in writing by manufacturer for use with finish coat and on substrate indicated.
 1. Ferrous-Metal Substrates: Quick drying, rust-inhibitive metal primer.
 2. Zinc-Coated Metal Substrates: Galvanized metal primer.
 3. Where manufacturer does not recommend a separate primer formulation on substrate indicated, use paint specified for finish coat.

2.4 EXTERIOR FINISH COATS

- A. Exterior Flat Acrylic Paint.
- B. Exterior Semigloss Acrylic Enamel.
- C. Exterior Full-Gloss Acrylic Enamel for Concrete, and Masonry.
- D. Exterior Full-Gloss Acrylic Enamel for Ferrous and Other Metals.
- E. Exterior Full-Gloss Alkyd Enamel.

2.5 INTERIOR FINISH COATS

- A. Interior Flat Acrylic Paint.
- B. Interior Flat Latex-Emulsion Size.
- C. Interior Semigloss Acrylic Enamel.
- D. Interior Full-Gloss Acrylic Enamel.
- E. Interior Full-Gloss Alkyd Enamel for Gypsum Board.
- F. Interior Full-Gloss Alkyd Enamel for Wood and Metal Surfaces.

2.6 INTERIOR WOOD STAINS AND VARNISHES

- A. Open-Grain Wood Filler.
- B. Interior Wood Stain: Alkyd based.
- C. Interior Alkyd- or Polyurethane-Based Clear Satin Varnish.
- D. Interior Waterborne Clear Satin Varnish: Acrylic-based polyurethane.
- E. Interior Waterborne Clear Gloss Varnish: Acrylic-based polyurethane.
- F. Paste Wax: As recommended by manufacturer.

PART 3 - EXECUTION

3.1 APPLICATION

- A. Comply with procedures specified in PDCA P4 for inspection and acceptance of surfaces to be painted.

- B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
- C. Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of size or weight of the item, provide surface-applied protection before surface preparation and painting.
1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.
- D. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.
1. Provide barrier coats over incompatible primers or remove and reprime.
 2. Cementitious Materials: Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.
 3. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.
 - a. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.
 - b. Prime, stain, or seal wood to be painted immediately on delivery. Prime edges, ends, faces, undersides, and back sides of wood, including cabinets, counters, cases, and paneling.
 - c. If transparent finish is required, backprime with spar varnish.
 - d. Backprime paneling on interior partitions where masonry, plaster, or other wet wall construction occurs on back side.
 - e. Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or sealer immediately on delivery.
 4. Ferrous Metals: Clean ungalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with SSPC's recommendations.
 - a. Blast steel surfaces clean as recommended by paint system manufacturer and according to SSPC-SP 6/NACE No. 3, SSPC-SP 10/NACE No. 2.
 - b. Treat bare and sandblasted or pickled clean metal with a metal treatment wash coat before priming.
 - c. Touch up bare areas and shop-applied prime coats that have been damaged. Wire-brush, clean with solvents recommended by paint manufacturer, and touch up with same primer as the shop coat.
 5. Galvanized Surfaces: Clean galvanized surfaces with nonpetroleum-based solvents so surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.

- E. Material Preparation:
1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
 2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
- F. Exposed Surfaces: Include areas visible when permanent or built-in fixtures, grilles, convector covers, covers for finned-tube radiation, and similar components are in place. Extend coatings in these areas, as required, to maintain system integrity and provide desired protection.
1. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 2. Paint interior surfaces of ducts with a flat, nonspecular black paint where visible through registers or grilles.
 3. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
 4. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.
 5. Finish interior of wall and base cabinets and similar field-finished casework to match exterior.
- G. Sand lightly between each succeeding enamel or varnish coat.
- H. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
1. Omit primer over metal surfaces that have been shop primed and touchup painted.
 2. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance.
- I. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.
- J. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate. Provide total dry film thickness of the entire system as recommended by manufacturer.
- K. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to items exposed in equipment rooms and occupied spaces.
- L. Block Fillers: Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.
- M. Prime Coats: Before applying finish coats, apply a prime coat, as recommended by manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or

unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.

- N. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.
- O. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even luster. Provide a finish free of laps, runs, cloudiness, color irregularity, brush marks, orange peel, nail holes, or other surface imperfections.
- P. Stipple Enamel Finish: Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling, such as laps, irregularity in texture, skid marks, or other surface imperfections.

3.2 CLEANING AND PROTECTING

- A. At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from Project site.
- B. Protect work of other trades, whether being painted or not, against damage from painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by COR.
- C. Provide "Wet Paint" signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by others to protect their work.
 - 1. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

END OF SECTION 09912