1.01 **RELATED WORK**

A. Finish hardware is specified in Section 08710.

1.02 **SUBMITTALS**

Submit shop drawings of hollow metal doors and frames and frames for fixed glazing for the Architect's approval prior to fabrication.

2.01 **METAL FRAMES**

A. Frames for doors shall be cold rolled 16-gauge steel of shapes and sizes as shown on plans. Frames for interior fixed glazed panels shall be 18-gauge steel, shapes and sizes shown. Steel for exterior frames shall be zinc-coated carbon steel with ASTM A 525-87 G60 zinc coating, mill phosphatized. Door frames shall have cutouts and reinforcing to accommodate all finish hardware specified under the hardware section. Frames in masonry walls shall be shop assembled with joints continuously welded and ground smooth, and with galvanizing touched-up. Frames in metal stud framed partitions shall be "dry-wall" type.

B. Hardware cut-outs shall have 1/8" minimum plate reinforcements welded to the frame.

C. Provide 20-gauge removable channel shaped glazing beads at interior glazed panels.

D. Door frames shall be provided with adjustable base and jamb anchors; provide one (1) anchor for each 2'-0" of height for each jamb of all door frames. Frames for fixed glazing shall have anchors at tops and bottoms and at intermediate points not over 2'-0" o.c., and shall have provisions for squaring and leveling before final securing in place.

E. Frames shall be chemically cleaned after fabrication and given one coat of baked-on zinc chromate primer.

3.01 **INSTALLATION**

A. Set interior frames in metal stud framing after gypsum wallboard has been installed. Secure to metal studs with anchors at floors and at intermediate points as specified.

B. Doors shall hang in frames with uniform clearance. Use metal shims behind hinges for adjustment.

C. Install frames for fixed glazing within metal studs, set level and square, ready to receive glazing as required.

3.02 **APPLICATION OF FINISH HARDWARE**

A. Receive, store, and be responsible for all finished hardware. Tag, index, and file all keys. Use care not to injure work when applying hardware. Remove and replace doors so bottoms may be painted.

B. The location of hardware mounting is indicated in Section 08710.

C. Remove escutcheons, and cover door knobs and pulls with heavy cloth until painting is completed. Prior to completion of building, examine doors and movable parts. Adjust and leave hardware in good working order.

END OF SECTION

1.01 RELATED WORK

A. Finish hardware is specified in Section 08710.

B. Hollow metal frames for interior doors are specified in Section 08100.

1.02 QUALITY ASSURANCE

A. Manufacturer of wood doors shall have not less than ten years successful production of the quality of wood doors specified herein.

B. Wood doors shall comply with AWI Quality Standards of the Architectural Woodwork Institute, Premium Grade, Section 1400, Seventh Edition.

1.03 SUBMITTALS

A. Submit manufacturer's descriptive literature, specifications, installation instructions, warranty form and other data to indicate compliance with specified requirements.

B. Submit shop drawings which shall include:

1. Door schedule indicating opening identification number, door type, grade, size, thickness, swing, and undercuts.
2. Door elevations indicating type of construction.
3. Use same reference numbers for openings and details as on the Contract Drawings.
4. Indicate pre-fitting and pre-machining requirements including hardware locations.

1.04 DELIVERY, STORAGE AND HANDLING

A. Protect wood doors during transit, storage and handling to prevent damage, soiling and deterioration. Replace doors damaged from any cause before final inspection.

B. Comply with manufacturer's instructions and with "On-Site-Care" requirements of AWI pamphlet "Care and Finishing of Wood Doors."

C. Deliver wood doors to site after wet contraction operations are completed and dry and building has reached average prevailing relative humidity.

D. Deliver pre-finished components in manufacturer's original unopened protection covering or container, clearly marked with manufacturer's name, brand name and identifying number on the covering.

E. Store in clean, dry, well ventilated area protected from sunlight. Avoid extreme heat, cold, dryness or humidity; relative humidity in storage area shall be not less than 30% nor greater than 60%. Store flat over level surface above floor on wood blocking. Under bottom door and over top of stack, provide plywood or corrugated cardboard for protection.

F. Do not drag doors across one another or across other surfaces.

1.05 WARRANTY

A. Provide the manufacturer's written warranty, agreeing to repair or replace wood doors which have:

1. Delaminated in any degree

2. Warped or twisted 1/4" or more in plane of door face
3. Telegraphed stile, rail or core through the face to cause surface variation in excess of 1/100" in any 3" span
4. Any faulty workmanship

2.01 **WOOD DOORS**

A. Wood doors shall be 5–ply and have solid particleboard core meeting or exceeding the requirements of ANSI A208.1, CS236, type 1 Density C. Class 1, AWI Specification Symbol PC-5/PC-7. AWI1300 PC-5/PC-7 prefinished / premachined. Approved manufacturers are Mohawk, Algoma, Eggers and Lampton.

B. Stiles and rails shall be securely bonded to the core by non-mechanical method, and shall be minimum 1-3/8" vertical stiles and 1-1/8" top and bottom rails. Stiles shall match face veneer of doors in appearance.

C. Adhesive shall be Type 1.

D. Face veneer shall be AWI Premium Grade Veneer with the quality characteristics of AW1200-S-8 Panel Products and shall match existing. The minimum thickness of face veneer shall be 1/40" before sanding.

E. Labeled wood fire doors shall be AWI Type FD, flush panel, with face veneers matching those specified for regular wood doors, with non-combustible mineral core. Provide fire retardant treated matching hardwood, minimum 5/8" after trimming at top rail, 1/2" minimum after trimming at stiles and 1-1/2" minimum after trimming at bottom rail. Ratings shall be as indicated on the Door Schedule.

F. Provide metal frames and removable glazing beads at glazed openings, prefinished in color as approved by the Architect from the manufacturer's standard colors. Frames shall provide rating protection indicated. Fasten frames with security-headed fastenings.

2.02 **FABRICATION**

A. Face veneer and cross band shall be glued to the core in a hot press. The face veneer shall be center balanced on all doors.

B. Unless otherwise required to match hardware bevel, provide 1/8" standard bevel at stiles.

C. Fabricate and trim doors to size at the factory to coordinate with approved shop drawings and to accommodate floor finishes indicated on the finish schedule. Pre-fit doors as specified below to receive specified hardware conforming to requirements of the hardware suppliers. Provide cut-outs to receive glazed panels and door louvers.

D. Doors shall be factory-finished as specified below after pre-fitting, conforming to requirements of Section 1500 AWI Standards. Submit samples of stained finish to Architect for approval before beginning work.

2.03 **FACTORY FINISHING**

A. Pre-finish all wood doors at factory to match manufacturer's standard color approved by the Architect.

B. Finish shall consist of stain and clear top coats consisting of:

1. Highly pigmented wiping filler/stain, hand-applied to provide grain depth and definition.
2. Coat of clear vinyl sealer, oven-dried and sanded.
3. Clear top coat, oven-dried.
4. Final clear topcoat, oven dried.
5. Top and bottom edges shall be sealed.

C. Pre-finished doors shall be individually packaged.

2.04 **PREPARATION FOR HARDWARE**

A. Pre-machine all wood doors at factory.

B. Pre-machine doors in accordance with final approved hardware and frame schedule.

C. Pre-machine doors within industry tolerances. A plus or minus 1/32" will be allowed on all hardware locations. A plus 1/32" minus 0" tolerance will be allowed on hinge cutouts. A plus 1/64" minus 0" tolerance will be allowed on lock front preparation cutouts.

3.01 **INSTALLATION**

A. Install doors within openings in hollow metal frames. Provide shims and blocking as required to maintain proper positioning.

B. Protect new doors after hanging. Protection shall prevent gouges in faces, stains, dirt, or damage.

3.02 **ADJUSTING**

A. Adjust and check each door to ensure operation and function requirements.

B. Replace or rehang doors which are hinge bound and do not swing or operate without binding. Remove and replace doors which do not meet requirements specified under WARRANTY above.

C. Replace pre-finished doors damaged during installation.

END OF SECTION

1.01 SUMMARY

A. The work required under this section consists of furnishing hardware and supervising the installation of hardware and related items that are necessary to complete the work, as indicated on the drawings and described in this section.

B. Related work described in other sections includes:

1. Pre-machined wood doors
2. Carpentry

1.02 REFERENCES

A. ANSI A117.1 - 1986 - Specifications for making buildings and facilities usable by physically handicapped people

B. AWI - Architectural Woodwork Institute, Seventh Edition

C. BHMA - Builders' Hardware Manufacturers Association

D. DHI - Door and Hardware Institute

E. NAAMM - National Association of Architectural Metal Manufacturers

F. NFPA - National Fire Protection Association

1. NFPA 80 - 1991 - Fire Doors and Windows
2. NFPA 101 - 1997 - Life Safety Code
3. NFPA 252 - 1984 - Fire Tests of Door Assemblies

G. UL - Underwriters Laboratories

1. UL 10B - Fire Tests of Door Assemblies
2. UL 305 - Panic Hardware

H. IBC - International Building Code

1. IBC - 2004

1.03 SUBMITTALS

A. Hardware Schedule: Submit a complete schedule of hardware. Using the format of this specification, indicate type, number location, and finish of each item. Include manufacturer's name and model description, fastening devices, and complete keying schedule. Reference architect's door designation. Submit six (6) copies.

B. Provide a cross reference between door numbers and hardware headings.

C. Physical Samples: When requested, submit physical samples of each item of hardware and show manufacturer's name, model, and finish.

D. Templates: Furnish templates and approved schedule to each related manufacturer of equipment which require same for the fabrication of their material.

1.04 **QUALITY ASSURANCE**

A. Provide hardware in compliance with the local building code requirements. Also comply with NFPA 101 Life Safety Code and ANSI A117.1 where applicable.

B. Provide hardware for fire rated openings in accordance with NFPA 80, Fire Doors and Windows, and NFPA 105, Smoke and Draft - Control Door Assemblies.

C. Provide the services of a finish hardware supplier who has been furnishing hardware in the project's vicinity for a period of not less than two (2) years and is an experienced hardware consultant (AHC). The consultant shall be available during the course of the work to the architect, contractor, and owner.

1.05 **DELIVERY, STORAGE AND HANDLING**

A. Deliver finish hardware to project site in manufacturer's protective packaging. All items are to be marked to indicate door opening number, hardware schedule number, or other identifying marks.

B. Store hardware in secure lock-up area that is dry and lighted.

1.06 **WARRANTY**

A. Warrant door closers against failure due to defective materials and workmanship for a period of five (5) years beginning at date of the Architect 's Final Certificate. Closers judged defective during this period shall be replaced or repaired at no cost to the owner.

B. Warrant exit devices against failure due to defects in material or workmanship for a period of three (3) years.

2.01 **KEYING**

A. New keys shall match Valdosta Technical College grand master-keyed system.

B. Install cylinders, housing and construction to match existing.

C. Prior to including the cost of Best Mortise Cylinders (consisting of cylinder housing and construction core), the operating keys, and the control keys on any periodical estimate and in any event prior to making demands for final payment, the Contractor shall deliver to the owner a "certificate and receipt" in the following exact language:

CERTIFICATE AND RECEIPT

This will certify (a) that the permanent cores for the doors designated in the contract documents for_____on the campus of _____ _____delivered to the comptroller of the said institution on _____, 200_: that (b) all keys for permanent cores called for in the aforesaid contract document were delivered to the aforesaid comptroller on the same date; and that (c) by reason of the fact that the cost of the aforesaid permanent cores were included in the cost of the Best Mortise Cylinders (consisting of cylinder housing and construction core), no additional charge has been made or will be made by Best Universal Lock Company against the general contractor, any subcontractor, the owner, or the institution for the aforesaid permanent cores or the aforesaid keys for the aforesaid permanent cores.

This receipt made on behalf of the _____ will acknowledge receipt of the permanent cores and the keys to the said permanent cores as referred to in the above certificate of BEST UNIVERSAL LOCK COMPANY.

_____

Comptroller, _____

D. Neither the owner, the general contractor, nor any subcontractor shall be accountable to Best Universal Lock Company for the construction cores. The contractor shall have no responsibility for installing permanent cores.

E. The contract between the general contractor and the supplier of Best Mortise Cylinders (consisting of cylinder housing and construction cores) shall include provisions (a) imposing upon Best Universal Lock Company the obligation to obtain and deliver to the general contractor the "certificate and receipt" set forth hereinabove and (b) relieving the general contractor, subcontractor, and the owner from any obligation to deliver construction cores to Best Universal Lock Company.

F. Permanent keying shall be finalized by the Valdosta Technical College and the representative of Best Lock Company. Installation of permanent cores shall be performed by Best Lock Company.

G. Furnish the following:

4 Change keys each cylinder
2 Control keys for construction cores

2.02 **HINGES**

A. Types, materials, sizes, and finishes are noted in the Schedule. Steel hinges shall be primed coated for use on hollow metal doors with a zinc plate base, bonderized in addition to the final finish. Use security studs in secure areas with stainless steel pins, non-rising.

B. Bearings are not to be installed in hinges before electro-plating the hinge. If frozen bearings are found, replace the complete shipment.

C. Manufacturer's whose product meets the criteria of this specification and are acceptable:

1. Hager

2. Bommer
3. Ceco

2.03 **CONTINUOUS HINGES**

A. Butt hinges shall be by Stanley as shown on schedule.

B. Manufacturer's whose product meets the criteria of this specification and are acceptable:

1. Lawrence
2. Hager
3. Stanley

2.04 **LOCKSETS AND LATCHES**

A. Lock sets shall match existing mortise locks, Luster Lever design - to match existing.

B. All locksets shall be manufactured by the same manufacturer. All leveler trim shall be Cast Solid.

C. Manufacturers whose products meet the criteria of this specification are acceptable:

1. Best, 35H Series - 15J Design
2. Corbin-Russwin, 5000 Series,
3. Yale, Series, 8700

2.05 **DEADBOLTS**

A. Deadbolts shall be bored type, key-operated both sides and shall be fitted with Best cylinders masterkeyed to the campus keying systems.

B. Manufacturers products acceptable are: Schlage B162N, Yale 3321B and Corbin Russwin DC2021.

2.06 **EXIT DEVICES**

A. Exit devices shall be listed by Underwriters' Laboratories, Inc. for Accident Hazard. Exit devices for use on fire-rated openings shall bear factory installed UL markings that indicate fire rating appropriate for the opening. All series exit devices shall incorporate a fluid damper, which decelerates the touch pad on its return stroke and eliminates noise associated with exit device operation.

B. All exit devices shall be of one manufacturer. The devices shall be non-handed. All latchbolts shall be deadlocking type. Attach surface applied items to doors with sex nuts and bolts. Touch pad shall extend a minimum of 1/2 of the door width and shall be stainless steel, US32D finish; plastic is not acceptable. Latch-bolts shall have a self-lubricating coating to reduce wear. Plated or plastic coated latch-bolts are not acceptable.

C. Manufacturers whose product meets the criteria of this specification and are acceptable:

1. Precision
2. Sargent
3. Von Duprin, Inc.

2.07 SURFACE MOUNTED DOOR CLOSERS

A. All surface closers shall be of one manufacturer. The closers shall be non-handed and non-sized. They shall be hydraulically controlled and full rack and pinion operation. They shall have cast iron bodies and adjustments for backcheck, general speed, and latch speed.

B. Provide mounting plates as required, sex nuts and bolts for application to doors, and through bolts for application to wood doors.

C. Manufacturers whose products meet the criteria of this specification and are acceptable:

1. Russwin R9100 and 2800 Series
2. Corbin
3. LCN

2.08 STOPS AND HOLDERS

A. Types as indicated in the Hardware Schedule.

B. Manufacturers whose products meet the criteria of this specification and are acceptable:

1. Rockwood
2. Donco
3. Trimco

2.09 MISCELLANEOUS

A. Types as indicated in Hardware Schedule

B. Manufacturers whose products meet the criteria of this specification and are acceptable:

1. Glynn-Johnson Corp.
2. H. B. Ives Co.
3. Baldwin Hardware Corp.

2.10 BOLTS

A. Flush bolts shall be 1" x 6-3/4" brass, rectangular front, per lengths indicated with 3/4" throw. Furnish bottom strike and top strike plate.

B. Bolts and accessories for use on fire-rated doors shall be Underwriters' Laboratories listed.

C. Manufacturers whose products meet the criteria of this specification and are acceptable:

1. Rixson
2. H. B. Ives Co.
3. Baldwin Hardware Corp.
4. Glynn-Johnson Corp.

2.11 FLAT GOODS

A. Manufacturers whose products meet the criteria of this specification and are acceptable:

1. Rixson, Inc.
2. Glynn-Johnson Corp.
3. Baldwin Hardware Corp.
4. H. B. Ives Co.

2.12 THRESHOLDS AND WEATHER-STRIP

A. Manufacturers whose products meet the criteria of this specification and are acceptable:

1. Pemko
2. NPG
3. Hager

2.13 PULLS AND PUSH PLATES

A. Pulls shall be stainless steel, satin finish, 2" extension and 10" centers.

B. Push plates and backing plates for pulls shall be .050" thick No. 4 finish stainless steel, 4" x 16", beveled edges

C. Acceptable manufacturers and products are:

	Baldwin	Rockwood	Hager
Push plates and backer plates	2124	70C	30S
Pulls	2594	112 x 70C	4J x 905

3.01 PRELIMINARY WORK

A. Receive, store in temporary bins, and be responsible for all finish hardware. Tag, index, and file all keys temporarily during construction.

B. Check all hardware upon arrival on job site against approved Finish Hardware Schedule. Function of hardware shall be examined against the job site conditions and interferences. If exceptions in these regards are found, notify Architect at once and retain subject hardware in its original packing carton. Adjustment and/or substitutions shall be made only as authorized by Architect.

3.02 INSTALLATION

A. Install hardware to doors as listed in the door schedule. Comply with *"Recommended Locations for Builders Hardware for Custom Steel Doors and Frames"* as published by the Door and Hardware Institute. Application shall be by skilled workmen, who work with proper equipment, and shall be in accord with manufacturer's instructions, fit to work of others accurately, applied securely, and adjusted properly. Hardware let into work of others shall be neatly done from template and shall fit perfectly. Exercise care not to injure work of others.

B. Install finish hardware to template. Cut and fit substrate to avoid substrate damage or weakening. Cover cut-outs with hardware item. Mortise work to correct location and size without gouging, splintering, or causing irregularities in exposed finished work.

C. Where cutting and fitting is required on substrates to be painted or similarly finished, install, fit, and adjust hardware prior to finishing, and then remove and place in original packaging. Reinstall hardware after finishing operation is completed.

D. Attach thresholds with flathead screws in lead expansion shields, spaced at 24" o.c. maximum and symmetrical with the center of door opening. On cast thresholds where cast-on-anchors are used, apply utilizing an epoxy grout mixture.

E. Attach door closers to door, whether wood or metal, with sex nut and bolt assemblies. Where closers have stop function, install closer to stop the door before striking obstructions.

3.03 CLEANING AND ADJUSTING

A. At the time of hardware installation, adjust each hardware item to perform function intended. Lubricate moving parts with lubricant acceptable to hardware manufacturer.

B. Prior to final inspection, readjust and re-lubricate hardware. Repair or replace defective materials. Clean hardware as recommended by manufacturer to remove dust and stains.

3.04 FASTENINGS

A. All exposed screws shall be Phillips head, finished to match item and sized to suit job requirements.

B. Surface applied items such as closers and overhead holders shall be applied with sex nut and bolt assemblies.

3.05 OPERATION AND ADJUSTMENT

A. After installation, all templates, installation instructions, and Special Details to be placed in a properly identified binder. This binder and all special tools are to be turned over to the Architect on date of Architect's Final Certificate.

B. After Final Acceptance, the hardware supplier shall instruct the Owner's designated personnel in the proper operation, adjustment, and maintenance of hardware and finishes.

3.06 COORDINATION

Coordinate finish hardware and electrical hardware installation with other trades to ensure proper installation and function for a complete operating system.

3.07 HARDWARE SCHEDULE

Set No. 1:

1-1/2 pair Butts	FBB179 4-1/2 x 4-1/2	US26D
1 each Lockset	5056 Lustra	US26D
1 each Closer	PR9120 x SNB	SBL
1 each Kick Plate	8" L.D.W. x .050	US32D
1 each Stop	402-1/2 or 438	US32D
3 each Silencers	20	

Set 2:
ADA Electric hardware to match existing at building 400.

END OF SECTION