3. Gate Hardware.
4. Card Access control system.
5. Hold-open closers with fire-alarm interface.
6. Wall or floor-mounted electromagnetic hold-ope
7. Power supplies for electric hardware.
8. Low energy door operators plus sensors and ac
9. Remote button release hardware.
10. Padlocks.
11. Cylinders for doors fabricated with locking hard
12. Wiring and riser diagrams for electric hardware
13. Key cabinets.

B. Related Sections:

1. Section 06200 - Finish Carpentry: Finish Hardw
2. Section 07900 - Joint Sealers – exterior thresho
3. Section 08100 - Metal Doors and Frames.
4. Section 08200 - Wood and Plastic Doors.
5. Section 08300 - Special Doors.
6. Section 08400 - Entrances and Storefronts.
7. Section 08900 - Glazed Curtain Walls.
8. Section 10650 - Operable Partitions.
9. Section 16722 - Fire/Life-Safety System.
10. Section 16724 - Security Access Systems.

C. Specific Omissions: Hardware for the following is specified or indicated elsewhere.

1. Windows.
2. Cabinets, including open wall shelving and locks.
3. Signs, except where scheduled.
4. Toilet accessories, including grab bars.
5. Installation.
6. Rough hardware.
7. Folding partitions, except cylinders where detailed.
8. Sliding aluminum doors, except cylinders where detailed.
9. Access doors and panels, except cylinders where detailed.
10. Corner Guards.

1.2 REFERENCES:

A. Use date of standard in effect as of Bid date.
B. American National Standards Institute – ANSI 156.18 – Materials and Finishes.
C. ICC/ANSI A117.1 – Specifications for making buildings and facilities usable by physically handicapped people.
D. ADA – Americans with Disabilities Act
E. BHMA – Builders Hardware Manufacturers Association
F. DHI – Door and Hardware Institute
G. NFPA – National Fire Protection Association

1. NFPA 80 – Fire Doors and Windows
2. NFPA 101 – Life Safety Code
3. NFPA 105 – Smoke and Draft Control Door Assemblies
4. NFPA 252 – Fire Tests of Door Assemblies

H. UL – Underwriters Laboratories

1. UL10B – Fire Tests of Door Assemblies as amended to incorporate positive pressure testing.
2. UL 305 – Panic Hardware

I. WHI – Warnock Hersey Incorporated
J. Local applicable codes
K. SDI – Steel Door Institute
L. AWI – Architectural Woodwork Institute
M. NAAMM – National Association of Architectural Metal Manufacturers

1.3 SUBMITTALS & SUBSTITUTIONS

A. SUBMITTALS: Submit six copies of schedule per Division 1. Organize vertically formatted schedule into “Hardware Sets” with index of doors and

1.4 QUALITY ASSURANCE:

A. Qualifications:

1. Hardware supplier: direct factory contract supplier who employs a certified architectural hardware consultant (AHC), available at reasonable times during course Work for project hardware (able toe-10(Au()7(abl)g60(A) AsAenablA.8 1(our(abl)(ablt)4 h(oj)16(ec) /LBod h)

1.5 DELIVERY, STORAGE AND HANDLING:

A. Delivery: coordinate delivery to appropriate locations (shop or field).

1. Permanent keys and cores: secured delivery direct to Owner's representative.

B. Acceptance at Site: Items individually packaged in manufacturers' original containers, complete with proper fasteners and related pieces. Clearly mark packages to indicate contents, locations in hardware schedule and door numbers.

C. Storage: Provide securely locked storage area for hardware, protect from moisture, sunlight, paint, chemicals, dust, excessive heat and cold, etc.

1.6 PROJECT CONDITIONS:

A. Where exact types of hardware specified are not adaptable to finished shape or size of members requiring hardware, provide suitable types having as nearly as practical as the same operation and quality as type specified, subject to Architect's approval.

1.7 SEQUENCING AND COORDINATION:

A. Coordinate with SHSU Access Control.pproval. aal.

1. Confirm that wood door manufacturers furnish necessary UBC Standard 7-2 compliant seal packages.

1.8 WARRANTY:

A. Part of respective manufacturers' regular terms of sale. Provide manufacturers' warranties:

1.	Locksets:	Seven years.
2.	Exit Devices:	Three years mechanical, one year electrical.
3.	Closers:	Ten years mechanical, two years electrical.
4.	Hinges:	Two years.
5.	Other Hardware:	Two years.

1.9 COMMISSIONING:

A. Conduct these tests three weeks prior to request for certificate of substantial completion

B. Test door hardware operation with climate control system and stairwell pressurization system both at rest and while in full operation.

C. Test electrical, electronic and electro-pneumatic hardware systems for satisfactory operation.

D. Test hardware interfaced with fire/life-safety system for proper operation and release.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

A. Listed acceptable alternate manufacturers: submit for review products with equivalent function and features of scheduled products.

ITEM:	MANUFACTURER:	ACCEPTABLE SUB:
Hinges	(IVE) Ives	Hager, McKinney
Continuous Hinges	(HAG) Hager	Pemko, Zero, Select
Pivots	(IVE) Ives	Rixson
Key System	(SCH) Schlage	None Available
Locks	(SCH) Schlage	None Available
Exit Devices	(VON) Von Duprin	None Available
Closers	(LCN) LCN	None Available
Auto Operators	(LCN) LCN	None Available
Auto Flush Bolts	(IVE) Ives	DCI
Coordinators	(IVE) Ives	Hager
Silencers	(IVE) Ives	Hager, Rockwood
Push & Pull Plates	(IVE) Ives	Hager, Rockwood
Kickplates	(IVE) Ives	Hager, Rockwood
Stops & Holders –	(IVE) Ives	Hager, Rockwood
Overhead Stops	(GLY) Glynn-Johnson	

3. Extra-heavy weight hinges on doors with panic hardware or fire exit devices.
4. Outswinging exterior doors: Stainless steel with non-removable (NRP) pins.
5. Stainless steel material at doors subject to corrosive atmospheric conditions.
6. Provide shims and shimming instructions for proper door adjustment.
7. All hinges shall be stainless steel material.

D. Continuous Hinges:

1. Geared-type aluminum at exteriors.

    a. Heavy-duty, extra-bearing units for doors over 3 foot, 5 inches in width.
    b. Heavy-duty, extra-bearing units for doors with panic hardware or fire exit devices.
    c. Use wide-throw units where needed for maximum degree of swing, advise architect if commonly available hinges are insufficient.

E. Pivots: Are not allowed

2.3 LOCKSETS, LATCHSETS, DEADBOLTS:

A. Extra Heavy Duty Cylindrical Locks and Latches: as scheduled.

1. Chassis: cylindrical design, corrosion-resistant plated cold-rolled steel, through-bolted.
2. Locking Spindle: stainless steel, interlocking design.
3. Latch Retractors: forged steel. Balance of inner parts: corrosion-resistant plated steel, or stainless steel.
4. Backset: 2-3/4" typically, more or less as needed to accommodate frame, door or other hardware.
5. Lever Trim: accessible design, independent operation, spring-cage supported, minimum 2” clearance from lever mid-point to door face.
6. Electric operation: Manufacturer-installed continuous duty solenoid.
7. Strikes: 16 gage curved steel, bronze or brass with 1” deep box construction, lips of sufficient length to clear trim and protect clothing.
8. Deadbolt: B660 JD
9. Padlocks: American interchangeable core Padlocks or approved equal.
10. Lock Series and Design: Schlage ND series, “Rhodes” design.
11. Certifications:

    a. ANSI A156.2, Series 4000, Grade 1.
    b. UL listed for A label and lesser class single doors up to 4ft x 8ft.

12. Accepted substitutions: Schlage – No substitution.

H. Fasteners: Generally, exposed screws to be Phillips or Robertson drive. Pinned TORX drive at high security areas. Flat head sleeve anchors (FHSL) may be slotted drive. Sheet metal and wood screws: full-thread. Sleeve nuts: full length to prevent door compression.

J. Silencers: Interior hollow metal frames, 3 for single doors, 4 for pairs of doors. Omit where adhesive mounted seal occurs. Leave no unfilled/uncovered pre-punched silencer holes.

K. Wall- & Floor-mounted electromagnetic door holders: LCN's SEM series or approved equivalent. Incorporate into U.L.-listed fire&life-safety system, doors release to allow closure and latching when door's zone is in alarm state. Use minimum projection required to allow door to open as widely as allowed by wall conditions and projection of door hardware.

2.7 FINISH:

A. Generally BHMA 626 Satin Chromium.

1. Areas using BHMA 626 to have push-plates, pulls and protection plates of BHMA 630, Satin Stainless Steel, unless otherwise noted.

B. Door closers: factory powder coated to match other hardware, unless otherwise noted.

C. Aluminum items: match predominant adjacent material. Seals to coordinate with frame color.

2.8C KEYING REQUIREMENTS:

A. Key System: Schlage Everest D utility-patented keyway, interchangeable core. Utility patent protection to extend at least until 2014. Key blanks available only from factory-direct sources, not available from after-market key blank manufacturers. For estimate use factory GMK charge. Initiate and conduct meetings(s) with Owner and I-R Security & Safety Consultants representatives to determine system keyway(s), keybow styles, structure and degree of geographic exclusivity. Furnish Owner's written approval of the system. Supplier to contact University lock shop at (936) 294-2704 to determine the appropriate keyway.

1. Existing factory registered master key system.
2. Construction keying: furnish temporary keyed-alike cores. Remove at substantial completion and install permanent cylinders/cores in Owner's presence. Demonstrate that construction key no longer (i)6(n)]almio60

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A. Ensure that walls and frames are square and plumb before hardware installation.

B. Locate hardware per SDI-100 and applicable building, fire, life-safety, accessibility, and security codes.

1. Notify Architect of any code conflicts before ordering material.
2. Locate levers, key cylinders, t-turn pieces, touchbars and other operable portions of latching hardware between 30 inches to 44 inches above the finished floor.
3. Where new hardware is to be installed near existing doors/hardware scheduled to remain, match locations of existing hardware.

C. Overhead stops: before installing, determine proposed locations of furniture items, fixtures, and other items to be protected by the overhead stop's action.

D. Existing frames and doors scheduled to receive new hardware: carefully remove existing hardware, tag and bag, and turn over to Owner.

1. Patch and fill wood frames and doors with solid wood dutchments before cutting for new hardware. Do not reuse existing screw holes - - fill with dowel plugs and re-pilot.
2. Metal doors/frames: Weld or fasten with screws: filler pieces in existing hardware cut-outs and mortises not scheduled for re-use by new hardware. Leave surfaces smooth - - no applied patches.
3. Remove unused existing floor closers, fill empty floor closer cavities with concrete.

3.3 INSTALLATION

A. Install hardware per manufacturer’s instructions and recommendations. Do not install surface-mounted items until finishes have been completed on substrate. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate for proper installation and operation. Remove and reinstall or replace work deemed defective by Architect.

1. Gaskets: install jamb-applied gaskets before closers, overhead stops, rim strikes, etc; fasten hardware over and through these seals. Install sweeps across bottoms of doors before astragals, cope sweeps around bottom pivots, trim astragals to tops of sweeps.

2. When hardware is to be attached to existing metal surface and insufficient reinforcement exists, use RivNuts, NutSerts or similar anchoring device for screws.
3. Use manufacturers' fasteners furnished with hardware items, or submit Request for Substitution with Architect.
4. Replace fasteners damaged by power-driven tools.

B. Locate floor stops no more that 4 inches from walls and not within paths of travel. See paragraph 2.2 regarding hinge widths, door should be well clear of point of wall reveal. Point of door contact no closer to the hinge edge than half the door width. Where situation is questionable or difficult, contact Architect for direction.

C. Locate overhead stops for minimum 90 degrees and maximum all0 Td [Thalf (o)10BIuor
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4. Submit written report identifying problems and likely future problems.

3.5 DEMONSTRATION:

A. Demonstrate electrical, electronic and pneumatic hardware systems, including adjustment and maintenance procedures.

3.6 PROTECTION/CLEANING:

A. Cover installed hardware, protect from paint, cleaning agents, weathering, carts/barrows, etc. Remove covering materials and clean hardware just prior to substantial completion.

B. Clean adjacent wall, frame and door surfaces soiled from installation/reinstallation process.

3.7 SCHEDULE OF FINISH HARDWARE

A. See door schedule in drawings for hardware set assignments.

B. Manufacturers and their abbreviations used in this schedule:

ADA Adams Rite
GLY Glynn-SADA