1. **GENERAL**
	1. **Requirements Include**
		1. Typical door hardware.
	2. **General Requirements**
		1. Through-bolt hardware for door mounted hardware is preferred.
		2. Furnish thermally broken exterior thresholds and fully support the threshold.
		3. Coordinate with Divisions 26, 27, and 28 as required.
		4. Where hardware is being replaced, salvage hardware and turn it over to BCIT.
	3. **References**
		1. Comply with current adopted edition BHMA A156.18 Materials and Finishes.
2. **ADMINISTRATIVE AND SUBMITTAL REQUIREMENTS**
	1. **BCIT Submittals and Notifications**
		1. Maintenance Material Submittals
			1. Five (5) extra key lock cylinders for each master keyed group unless indicated otherwise.
			2. Tools:
				1. Special wrenches and tools applicable to each different or special hardware component.
				2. Maintenance tools and accessories supplied by hardware component manufacturer.
	2. **Closeout Requirements**
		1. Turn over all locks to BCIT project liaison at or before Substantial Performance.
			1. Label key and locks by room and location.
			2. Bag locks and keys prior to delivery.
			3. Obtain written receipt.
3. **QUALITY ASSURANCE**
	1. **Warranty**
		1. Minimum warranty periods as follows:
			1. Locksets: Seven (7) years.
			2. Exit Devices: Three (3) years mechanical, one (1) year electrical.
			3. Closers: Ten (10) years mechanical, two (2) years electrical.
			4. Hinges: Life of Building.
			5. Other Hardware: Two (2) years.
			6. Automatic Door Operator Motor and Compressor: 5 years.
4. **PRODUCTS**
	1. **Manufacturers**
		1. Subject to compliance with requirements and consultation with BCIT Facilities and SSEM, the following manufacturers are acceptable for the products listed:
			1. Hinges: Hager, Stanley, Mckinney.
			2. Continuous Hinges: (IVE) Ives.
			3. Key System: (SCH) Schlage.
			4. Access Control: Confirm with BCIT.
			5. Access Control Locks: Confirm with BCIT.
			6. Locks and latches.: (SCH) Schlage.
			7. Electric strikes: As per Division 28.
			8. Anti-Pry Plates: Schlage, Stanley.
			9. Closers: (LCN) LCN.
			10. Flush Bolts: (IVE) Ives and Adams rite cylinder-operated.
			11. Push & Pull Plates: (SMH) Standard Metal Hardware.
			12. Stops & Holders: (IVE) Ives.
			13. Thresholds: (KNC) KN Crowder.
			14. Seals & Bottoms: (KNC) KN Crowder.
			15. Automatic Door Operators: Refer to Section 08 71 13.
	2. **Hinges**
		1. Preferred door size is 3’x7’H (single), and 6’W x 7’H (double), complete with 3 hinges per door.
		2. Specify 3 knuckle concealed bearing hinges, steel base metal for all rated and interior doors, stainless steel material for all exterior hollow metal doors sized as follows:
			1. 114 mm high hinges for doors up to 950 mm width.
			2. 127 mm high for doors greater than 950 mm width to 1220 mm width.
			3. Provide 3 hinges per leaf for doors up to 2150 in height. Add one additional hinge for every 610mm in height.
			4. Select hinge width to minimally clear all trim and permit maximum degree of opening.
		3. Specify three (3) knuckle concealed bearing heavy weight hinges for all high traffic and heavy use or for doors that are wider than 1066 mm. Confirm with BCIT as to the expected usage rating for area under consideration.
		4. Provide non-removable pin (NRP) for all exterior out swinging doors.
		5. Hinges and Pivots:
			1. Specify full mortise continuous geared hinges, anodized aluminum material sized to 1” less door height for exterior and vestibule aluminum doors.
			2. Continuous piano hinge system to be used on aluminum frame glazed doors.
	3. **Locksets, Latch Sets**
		1. Locksets: Heavy duty, Vandal Guard ND Series by Schlage, no substitutions.
		2. Chassis: modular cylindrical design, corrosion-resistant plated cold-rolled steel, through-bolted with locking anti-rotation plate.
		3. Spindle/Spring cage: Deep drawn seamless, stainless steel spindles with thru-bolted, with integral dual coil compression spring cages.
		4. Latch Retractors: forged steel. Balance of inner parts: corrosion-resistant plated steel, or stainless steel.
		5. Lever Trim: Accessible design, independent operation, spring-cage supported, minimum 50 mm (2 in.) clearance from lever mid-point to door face.
		6. Certifications:
			1. ANSI A156.2, 1994, Series 4000, Grade 1.
			2. ULC listed for up to A label 4ft x 8ft wide single doors.
	4. **Locksets – Access Control**
		1. All electrified hinges, electrified cylindrical locksets, electrified mortise locksets, electronically retracted panic hardware, door contacts, and any and all other equipment which is connected to, or powered by the enterprise access control system, is administered through SSEM with the current access control maintenance provider, as detailed in Division 28.
	5. **Dead Bolts**
		1. To be 25 mm (1 in.) throw deadbolt with hardened steel roller.
		2. Cylinder collar: 22 mm (7/8 in.) solid brass or bronze.
		3. Mounting bolts: 6 mm (1/4 in.) diameter with hardened steel ball bearings.
		4. Steel mounting plate and security shield.
		5. Deadbolt Series: B600 series.
		6. Certifications: ANSI A156.5 Grade 1.
	6. **Exit Devices**
		1. To be heavy duty exit devices or fire exit hardware certified ANSI 156.3 Grade 1 to meet door labeling requirements.
		2. Dead latching mechanism on all latches, heavy duty extruded aluminum housing, stainless steel touchpad and bell crank mechanism with all compression springs and zinc dichromated parts.
		3. No exposed screws to show through glass doors.
		4. Non-handed basic device design with center case interchangeable with all functions, no extra parts required to effect change of function.
		5. Where lever trim on doors to be locked is required to meet barrier free requirements, provide trim with breakaway feature to protect internal trim parts.
		6. Specialized functions to include CX - Chexit Delayed Egress.
			1. CD - Cylinder Dogged.
			2. Q-EL - Quiet Electric Latch Retraction.
		7. Product: Von Duprin Mortise type: Series, 996L-17 Trim or approved alternative.
	7. **Closers**
		1. Surface Closers: Series 4000 by LCN (4040XPO), no substitutions.
			1. Full rack-and-pinion type cylinder with high strength cast iron cylinder. Double heat- treated pinion shaft, single piece 38 mm (1-1/2 in.) diameter forged piston, chrome-silicon steel spring.
			2. Supply extra duty parallel arm mount closer at locations generally accessible to the public.
			3. Plates, brackets and special templating when needed for interface with particular header, door and wall conditions and neighboring hardware.
			4. Separate adjusting valves for closing speed, latching speed and back check, fourth valve for delayed action where scheduled.
			5. Independent lab-tested 10,000,000 cycles.
			6. Door Closer Series - LCN 4041, 4040XP.
	8. **Other Hardware**
		1. Protective Plates:
			1. Stainless steel or brushed chrome as applicable.
			2. Confirm with BCIT if kick plates are required. If so, kick plates to be not less than 254 mm (10 in.) in height.
		2. Door Stops and Holders:
			1. Where an open door can damage an adjacent wall, provide a door stop. Wall and overhead door stops are preferred; floor stops to be avoided.
			2. All applications: Provide stainless steel material when a door closer is not used supply a friction style stop.
			3. Integral stop closers: "Cush" “SCush”.
			4. Overhead stops (heavy duty: ): Glynn-Johnson 90,100 series.
			5. Overhead stops (medium duty)Glynn-Johnson 450,410 series.
			6. Wall Stops: IVES - WS406CCV, WS406CVX.
	9. **Keying**
		1. Include construction keying, control keying with removable core cylinders. Key to Owner’s keying requirements.
		2. Do not provide construction keys to building occupants.
		3. Supply keys in the following quantities:
			1. 4 construction keys.
			2. 4 control keys and 4 extra cylinder cores.
	10. **Finishes**
		1. Brushed stainless steel.
		2. Satin chromium.
		3. Anodized aluminum.
		4. Powder coating.
		5. Anodized aluminum and powder coating coloured to match adjacent installations.
5. **EXECUTION**
	1. **Installation – Finish Hardware**
		1. Mounting height for hardware:
			1. Unless a conflict arises, the following are standard mounting heights on Products. If a question or conflict should arise, the hardware Supplier, if requested, shall assist the Contractor and Owner in determining mounting heights. Refer to ANSI/BHMA Standards A156 Series.
			2. Measurements are from finish floor unless noted otherwise:
				1. Butts:

Top: 316.5 mm (11-3/4 in.) center of butt to top of door.

Intermediate: Equal distance between top and bottom butts.

Bottom: 330 mm (13 in.) center of butt.

* + - * 1. Knob locks:

1023 mm (40-5/16 in.) to center of strike.

* + - * 1. Deadlocks:

524 mm (60 in.) to center of strike.

* + - 1. Fit hardware accurately using full complement of screws and draw up tight.

\*\*\* END OF **DOOR HARDWARE** SECTION \*\*\*