SECTION 08710 - FINISH HARDWARE

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

A. Work under this section comprises of furnishing specified herein and noted on drawings for a complete and operational system, including any electrified hardware components.

B. Items include but are not limited to the following:

1. Hinges - Pivots
2. Flush Bolts
3. Exit Devices
4. Locksets and Cylinders
5. Push Plates - Pulls
6. Coordinators
7. Closers
8. Kick, Mop and Protection Plates
9. Stops, Wall Bumpers, O.H. Controls
10. Electrified Hold Open Devices
11. Thresholds, Gasketing and Door Bottoms
12. Silencers
13. Miscellaneous Trim and Accessories
14. Electrified Hardware Items and Power Supplies

1.2 RELATED DOCUMENTS, drawings and general provisions of contract, including General and Supplementary Conditions, and Division 1 Specification sections, apply to this section.

A. Section 06200 - Finish Carpentry

B. Section 08110 - Hollow Metal Work

C. Section 08200 - Wood Doors

D. Sections within 08300 - Specialty Doors

E. Section 08400 - Entrances and Storefronts

F. Sections within 08800 - Glazing

G. Sections within 09900 - Painting

H. Division 16 - Electrical

1.3 REFERENCES SPECIFIED in this section subject to compliance as directed:

A. NFPA-80- 2007 - Standard for Fire Doors and Windows

B. NFPA-101-2006 - Life Safety Code

C. ADA, The Americans with Disabilities Act - Title III - Public Accommodations

D. ANSI-A 117.1-American National Standards Institute - Accessible and Usable Buildings and facilities

E. ANSI-A156.5-American National Standards Institute - Auxiliary Locks and

Associated Products

F. UFAS - Uniform Federal Accessibility Standards

G. UL - Underwriter's Laboratories

H. WHI - Warnock Hersey International, Division of Inchcape Testing Services

I. State and Local Codes including Authority Having Jurisdiction

J. FBC – Florida Building Code

1.4 SUBMITTALS

A. HARDWARE SCHEDULES: Submit copies of schedule in accordance with Division 1, General Requirements. Schedule to be in vertical format, listing each door opening, including handing of opening, all hardware scheduled for opening or otherwise required to allow for proper function of door opening as intended, and finish of hardware. At doors with door closers or door controls include degree of door opening. Supply the schedules within two (2) weeks from date purchase order is received by the hardware supplier.

B. Submit manufacturers' cut/catalog sheets on all hardware items and any required special mounting instructions with the hardware schedule.

C. Certification of Compliance:

1. Submit any information necessary to indicate compliance to any or all of these specifications as required.

1.5 QUALITY ASSURANCE

A. Hardware supplier to be a qualified direct distributor of the products to be furnished. In addition, the supplier to have in their regular employment an A.H.C. or person of equivalent experience who will be made available at reasonable times to consult with the Architect/Contractor and/or Owner regarding any matters affecting the finish hardware on this project.

B. All hardware used in labeled fire or smoke rated openings label or mark indicating U.L. (Underwriter's Laboratories) approved for fire. Exit devices in non-labeled openings to be listed for panic.

C. Contractor will be responsible for verifying that hardware supplier selected is authorized to purchase the required restricted key system.

D. Exterior openings: All doors, frames and hardware for exterior openings shall be tested and approved for use at the required wind loads for this project. Copies of current valid Florida State (FBC) or Metro-Dade County (NOA) product approvals shall be furnished as proof of compliance with this requirement.

1.6 DELIVERY, HANDLING, AND PACKAGING

A. Furnish all hardware with each unit clearly marked and numbered in accordance with the hardware schedule. Include door and item number for each.

B. Pack each item complete with all necessary parts and fasteners.

C. Properly wrap and cushion each item to prevent scratches and dents during delivery and storage.

1.7 SEQUENCING AND SCHEDULING

A. Any templates for the finish hardware, required by the frame or door manufacturers or other suppliers, in order to produce doors or frames is to be sent to those suppliers in a timely manner, so as not to interrupt job progress.

1.8 WARRANTY

A. All finish hardware shall be supplied with a one-(1) year warranty against defects in materials and workmanship, commencing with substantial completion of the project.

PART 2 PRODUCTS

2.1 FASTENERS

A. Furnish with finish hardware all necessary screws, bolts and other fasteners of suitable size and type to anchor the hardware in position for a long life under hard use. No other screws may be substituted.

B. Furnish fastenings where necessary with expansion shields, toggle bolts, and other anchors designated by the Architect according to the material to which the hardware is to be applied and the recommendations of the hardware manufacturer. All closers and exit devices on labeled wood doors shall be thru-bolted if required by the door manufacturer. All thresholds shall be fastened with machine screws and anchors.

C. Design of all fastenings shall harmonize with the hardware as to material and finish.

2.2 ENVIRONMENTAL CONCERN FOR PACKAGING

A. The hardware shipped to the jobsite is to be packaged in biodegradable packs, such as paper or cardboard boxes and wrapping. If non-biodegradable packing is utilized, such as plastic, plastic bags or Styrofoam, then the Contractor will be responsible for the disposal of the non-biodegradable packing to a licensed or authorized collector for recycling of the non-biodegradable packing.

2.3 HINGES

A. All hinges and pivots, including single and double acting types, pocket hinges, electric hinges, and continuous aluminum geared hinges to be of one manufacturer as hereafter listed for continuity and consideration of warranty.

B. Unless otherwise specified, provide five-knuckle, heavy-duty, button tip, full mortise template type butts with non-rising loose pins. Provide non-removable pins for out swinging doors at secured areas or as called for in this specification.

C. Exterior Door Hinges

1. Provide out-swinging door hinges of stainless steel with non-removable pins or security studs as called for in this specification.

D. Interior Door Hinges

1. Stainless steel, as specified finish. Furnish three (3) hinges up to 90 inches high and one (1) additional hinge for every 30 inches or fraction thereof.

E. Provide size 4 1/2 inch x 4 1/2 inch for all 1 3/4 inch thick doors up to and including 48 inches wide. Doors over 1 3/4 inch thru 2 1/4 inch thick use 5 inch x 5 inch hinges.

F. Where required to clear trim or permit doors to swing 180 degrees, furnish hinges of sufficient throw.

G. Provide heavy weight butts on all doors over 36 inches in width.

H. Finishes

1. At wood doors, hinges are to be plated to match adjacent hardware or as called for.
2. At all doors, hinges are to be stainless steel, unless otherwise specified.

I. Acceptable Products:

McKinney	Hager	Stanley
TA2314	BB1191	FBB191
T4A3386	BB1199	FBB199

J. Electric Hinges

1. Each electric hinge to have junction box fastened to the frame jamb installed by frame manufacturer.
2. Continuous circuit hinge to have number of wires required by electrical hardware it supports plus two additional wires for future considerations. All wires shall be terminated by means of a snap connector.
3. Continuous circuit hinge to have all wires concealed with 12 inch leads.
4. Monitoring switch hinges to be magnetic reed, concealed, adjustable switch type with extra heavy magnet.
5. Acceptable Products:

a. McKinney QC Series acceptable
b. Hager ETW Series acceptable
c. Stanley CE Series acceptable
d. McKinney MM x EHM Series as acceptable
e. Hager EMN Series acceptable
f. Stanley CS Series acceptable

2.4 KEYING

A. General:

1. The General Contractor shall furnish and install the specified Lockset, complete with its removable core cylinder, both made by the same manufacturer and keyed into the University's Proprietary Keyway.
2. The Architect's Office will furnish to the Contractor the proper purchase order number from the University to permit purchase of the locks with this special cylinder.
3. The cylinder shall be set at the factory into the restricted key system of the University, subject to the Great Grand Master, Grand Master, Master, Sub-Master and Change Key.
4. The General Contractor will be furnished a keying schedule for the project by the University. The finish hardware supplier will meet with

University Representative as necessary to aid in development of key schedule.

5. All cylinders are to be furnished with pin tumbler Construction Core during period of construction.

B. Furnish the following keys: 4 cut change keys per cylinder with locksets with 500 blanks; 5 cut Grand Master Keys and 10 blanks; 5 cut Master keys with 50 blanks.

C. On the bow of each cut key and blank, stamp the following: Property of the State of Florida.

D. Change keys shall accompany and be kept with their respective cores and upon completion of the project shall be properly tagged and turned over to the University. Hardware supplier and University Representative will install permanent cores and verify proper operation.

E. All Master Keys, Grand Master Keys and Great Grand Master Keys with required blanks shall be forwarded directly to:

Director of Facilities and Planning
Florida Atlantic University

F. System Restriction:

1. The system shall be a proprietary system for FAU and not be made available to anyone but FAU within a 300 mile radius.
2. Key blanks and cylinders shall not be available to purchase by anyone but FAU within a 300-mile radius.

G. Provide a key bitting list from the manufacturer for this project.

2.5 CYLINDERS

A. Cylinders shall not be fabricated prior to receipt of the approved keying schedule.

B. Construction:

1. Cylinders shall be made of brass. Die cast material will not be accepted. Screws shall be stainless steel.
2. Cylinders shall have paracentric keyways and not less than 6 tumblers.
3. Change key code numbers shall be embossed on each permanent removable core cylinder slide.
4. Cylinders shall be 1-1/8” nominal diameter and equipped with a standard cam or special cam if required.
5. The keys shall be made of nickel silver, accurately milled to fit the respective keyways.

C. The system shall be removable core, which allows inter-changeability of cores among all mortise locks. Supplier will verify which core system is in use for this project and will furnish accordingly.

D. Construction cores will be required during construction period.

E. Cylinder cams shall be brass, screws shall be stainless steel.

2.6 LOCKSETS

A. Locksets, as specified, and as scheduled, shall be heavy Duty mortise locksets and latchsets in Sargent 8200 Line complete with anti-friction latch bolts and guard bolts and ASA Strikes with wrought box. Only Sargent locksets will be acceptable.

B. Levers and roses/trim to be of 300 class stainless steel with solid turned screwless type knob shank and concealed type rose of design and finish schedule.

C. Trim of Sargent LNL design 32D finish.

D. All locksets and dead bolts to have armored scalps or fronts.

E. Items specified in schedule for aluminum doors shall be exactly as listed - no substitutions, and shall be furnished by the hardware supplier on this project.

2.7 CLOSERS

A. All closers for both interior and exterior doors shall be the product of one manufacturer and be matched in design.

B. Closers shall be provided with a 10-year warranty period in addition to the requirement of the General Conditions.

C. Construction shall be rack and pinion compression springs.

D. Closing speed, latching speed and backcheck shall be controlled by key operated valves.

E. The closer body shall be of a pressure cast aluminum alloy incorporating R14 silica with investment cast steel pistons.

F. All arms shall be finely finished, heavy-duty forged steel. All arms shall be interchangeable.

G. Projection of closer body and cover from door shall not exceed 2-1/16”.

H. Closers shall be non-handed, with opening force adjustable from 5 to 28 pounds, to meet specific door conditions and design requirements.

I. Seats for the needle bearing shall be machined directly in the closer body and shall be line-bored to insure accurate and positive alignment of the bearings.

J. Air expansion chamber for proper displacement of hydraulic fluid during opening cycle.

K. Sargent & Co. 350 Series (No Substitute).

2.8 EXIT DEVICES

A. All exit devices to be listed under Accident Equipment List and Label fire exit hardware of Underwriters’ Laboratories.

1. Devices to be chassis mounted unit construction.
2. Rail assembly must be a minimum of 2” wide and reinforced and in base metal of heavy bronze or stainless steel.
3. All springs must be stainless steel.
4. All devices shall be of matching trim, design and architectural hardware finish.

5. Device chassis must be non-ferrous alloy.
6. Approved Exit Device: 8800 Series FLL or ETL 32D(no substitute).
7. Approved Fire Exit Hardware and Trim: Sargent 12-8800 Series FLL or ETL trim 32D (no substitute).

B. All exit devices shall be operational over 1/2 the clear door width.

C. Exit devices for single doors or pairs of doors with mullions are to be of the rim type.

2.9 DOOR STOPS AND HOLDERS

A. Door stops are to be furnished for every door leaf. Every door to have either a floor, wall, or an overhead stop.

B. Place door stops in such a position that they permit maximum door swing, but do not present a hazard or obstruction. Furnish floor strikes for floor holders of proper height to engage holders of doors.

C. Where overhead stops and holders are specified, or otherwise required for proper door operation, they are to be heavy duty and of extruded brass or bronze with no plastic parts.

D. Finish: Same as other hardware, except use 32D and 32 (stainless steel) in lieu of 26D and 26 (plated chrome finishes), respectively, where available.

E. Acceptable Products

1. Floor and wall stops as listed in hardware sets. Equivalent products as manufactured by Quality, Ives, Rockwood, and Trimco acceptable.
2. Overhead stops/holders: Sargent specified

Sargent	Glynn Johnson	Rixson
590 Series	GJ90M Series	9 Series
1540 Series	GJ560 Series	33 Series

2.10 PUSH PLATES, DOOR PULLS, AND KICKPLATES

A. All push plates, door pulls, kickplates and other miscellaneous hardware as listed in hardware sets. Equivalent products as manufactured by McKinney, Quality, Ives, Rockwood, and Trimco acceptable.

B. Kickplates to be 10 inches high and Mop plates to be 6 inches high, both by 2 inches or 1 inch less than door width (LDW) as specified. They are to be of 16 gauge (.050 inches)thick bronze, brass, or stainless steel. For doors with louvers or narrow bottom rails, kickplate height to be 1 inch less than the dimension shown from the bottom of the door to the bottom of the louver or glass.

C. Where required armor plates, edge guards and other protective hardware are to be supplied in sizes as scheduled in the hardware sets.

D. Finish: Same as other hardware, except use 32D and 32 (stainless steel) in lieu of 26D and 26 (plated chrome finishes), respectively, where available.

2.11 FLUSH BOLTS AND COORDINATORS

A. Provide Flush bolts with Dust Proof Strikes as indicated in the individual hardware sets by Rockwood. Equals by McKinney, Ives, Trimco. Finish to match

adjacent hardware.

B. Coordinators - Approved Manufacturers:

1. Rockwood
2. McKinney
3. Trimco
4. Ives

2.12 THRESHOLDS AND WEATHERSTRIP

A. Provide materials and finishes as listed in hardware sets. Equivalent product by Pemko, McKinney, Reese, National Guard is acceptable. All thresholds must be in accordance with the requirements of the ADA and ANSI A117.1.

B. Provide threshold with screws. Supply all necessary anchoring devices for weather-strip and sound seal.

2.13 AUTOMATIC SWING DOOR SYSTEM

A. Gyro tech GT System 500 (surface applied): Automatic door system as indicated on the door schedule and hardware schedule.

B. Mode of operation: Spring close. Gyro Tech operator shall open door by energizing motor and stop by stalling motor against mechanical stop. Door shall close slowly by means of spring energy, closing shall be controlled by gear system and motor being used as dynamic brake with out power. Complete door cycle 18 to 20 seconds. manual door operation requires less than 12 lbs. of force applied to door style. System will act as a manual door closer in the event of a power failure. Hold open time shall be adjustable.

C. Components

1. Operator housing – 5½" x 5" Aluminum extrusions with finished end caps 0.146" thick.
2. Gyro-Swing power operator – Completely assembled sealed unit including helical gear driven transmission, overriding clutch, mechanical spring and bearings located in cast aluminum housing. Motor shall operate from 115-volt supply and require less than 5 amps at full power stall.
3. Electronic control – Self contained unit including including necessary transformer, relays, rectifiers, and other electrical components for proper operation and switching. All connecting harnesses shall have interlocking plugs. Controls shall include time delay for normal cycle and a 0-60 second time delay module.
4. Connecting hardware – Out swing doors shall be connected to operator by a two piece drive arm with self-aligning rod ends.
5. Activating devices – Stainless steel engraved, surface or flush mounted as required.

D. Manufacturer – NABCO Entrances inc. GT500 (No Substitution).

E. Warranty - 2 years labor and material.

2.14 FINISHES

A. The finishes for all hardware are as required in this specification and the

hardware sets.

B. Special care is to be taken to make uniform the finish of all various manufactured items.

C. Extruded aluminum products, except for thresholds and specified gasketing, are not acceptable.

2.15 DOOR SILENCERS

A. Furnish door silencers at all openings without gasketing. Provide two (2) at each pair of doors and three (3) for each single door.

2.16 PROPRIETARY PRODUCTS

A. Unless otherwise approved provide only the specified product.

B. All other materials, not specifically described, but required for a complete and proper finish hardware installation, are to be selected by the Contractor, subject to the approval of the Architect.

C. The Architect reserves the right to approve all substitutions to be made prior to bid.

PART 3 EXECUTION

3.1 INSTALLATION OF FINISH HARDWARE

A. Hardware is to be installed by experienced finish hardware installers only.

B. Check hardware against the reviewed hardware schedule upon delivery. Store the hardware in a dry, secure location to protect against loss and damage.

C. Install finish hardware in accordance with approved hardware schedule and manufacturers' printed instructions. Prefit hardware before finish is applied; remove and reinstall after finish is complete and dry. Install and adjust hardware so that parts operate smoothly, close tightly, and do not rattle.

D. Mortise and cutting to be done neatly, and evidence of cutting to be concealed in the finished work.

E. Protect knobs/levers from scratching or other damage.

F. Installation of Electronic Hardware: Comply with manufacturer's instructions for wiring, grounding, and shielding.

G. Field Quality Control of Electronic Hardware: Supplier of electronic hardware to make a visit to jobsite at the request of Architect or Contractor for the purposes of monitoring compliance with manufacturer's installation requirements

H. Installation of hardware using self drilling screws, sheet metal screws, or wood screws on hollow metal doors and frames is unacceptable, will void the hardware warrantee, and may require the replacement of the door and frame by the contractor.

PART 4 HARDWARE GROUPS

HW-1

Each to Have:

1	Pivots	195	26D
1	Inter. Pivots	EM19	26D
1	Exit Devices	51 52 56-HC8713 ETL W/Std dog	32D
1	Door Closers	351 P10	EN
1	Threshold	2005AS X DW	AL

HW-2

Each to Have:

1	Pivots	195	26D
1	Inter. Pivots	EM19	26D
1	Exit Devices	51 52 56-HC8713 ETL W/Std dog	32D
1	Door Operator	GT500 (2-Push Activators)	AL
1	Threshold	2005AS X DW	AL

HW-3

Each to Have:

2	Pivots	195	26D
2	Inter. Pivots	EM19	26D
2	Exit Devices	51 52 56-HC8713 ETL W/Std dog	32D
1	Door Operator	GT500 X 2 Push Activator	AL
2	Door Closer	351 P10	EN
1	Threshold	2005 AS X DW	AL

HW-4

Each to Have:

2	Pivots	195	26D
2	Inter. Pivots	EM19	26D
2	Exit Devices	51 52 56-HC8713 ETL W/Std dog	32D
2	Door Closer	351 P10	EN
1	Threshold	2005 AS X DW	AL

HW-5

Each to Have:

3	Each Hinges	T4A3386 4.5 X 4.5 NRP	32D
1	Exit Device	51 52-HC8804 FLW	32D
1	Door Closer	351 P10	EN
1	Kick Plate	8 X 2 LWD	32D

1	Stop	409	32D
1	Threshold	2005AS X DW	AL
1	W/Strip	303AS X LR	AL
1	Rain Drip	346C X LR	AL

HW-6

Each to Have:

4	Each Hinges	T4A3386 4.5 X 4.5 NRP	32D
2	Each Hinges	T4A3386CC4 4.5 X 4.5 NRP	32D
2	Exit Devices	51 52 76-HC8804 FLW	32D
1	Removable Mullion	12-980	P
2	Door Closers	351 P10	EN
2	Kick Plates	8 X 2 LWD	32D
2	Stops	409	32D
1	Threshold	2005AS X DW	AL
1	W/Strip	303AS X LR	AL
1	Rain Drip	346C X LR	AL

HW-7

Each to Have:

3	Each Hinges	T4A3386 4.5 X 4.5	32D
1	Door Closer	351	EN
1	Push Plate	70 8 X 16	32D
1	Pull Plate	125 X 70 4 X 16	32D
1	Deadlock	51 52-4878	32D
1	Kick Plate	8 X 2 LWD	32D
1	Wall Stop	409	32D
1	Threshold	171A X DW	AL
1	Latch	8215 LNL (@ Label Doors)	32D
3	Silencers	GJ64	

HW-8

Each to Have:

3	Each Hinges	TA2314 4.5 X 4.5	32D
1	Lockset	51 52 76-8250 LNL X Std. Cyl.	32D
1	Door Closer	351	EN
1	Threshold	177AV X DW	AL
1	W/Strip	S88D X LR	
1	Rain Drip	346C X LR	AL

HW-9

Each to Have:

3	Each Hinges	TA2314 4.5 X 4.5	32D
1	Lockset	51 52 76-8204 LNL	32D
1	Door Closer	351	EN
1	Wall Stop	409	32D
3	Silencers	GJ 64	

HW-10

Each to Have:

6	Each Hinges	TA2314 4.5 X 4.5	32D
1	Lockset	51 52-8204 LNL	32D
1	Flush Bolts	555	26D
2	Door Closers	351 PSH	EN
2	Wall Stops	409	32D
1	Threshold	217AS X DW	AL
1	W/Strip	S88D X LR	

HW-11

Each to Have:

3	Each Hinges	TA2314 4.5 X 4.5	32D
1	Lockset	51 52-8237 LNL	32D
1	Door Closer	351	EN
1	Kick Plate	8 X 2 LWD	32D
1	Stop	409 or 443 As Required	32D
3	Silencers	GJ 64	

HW-12

Each to Have:

3	Each Hinges	TA2314 4.5 X 4.5	32D
1	Lockset	51 52-8205 LNL	32D
1	Wall Stop	409	32D
3	Silencers	GJ64	

HW-13

Each to Have:

3	Each Hinges	TA2314 4.5 X 4.5	32D
1	Lockset	51 52-8204 LNL	32D
1	Wall Stop	409	32D
3	Silencers	GJ64	

HW-14

Each to Have:

6	Each Hinges	TA2314 4.5 X 4.5	32D
1	Lockset	51 52-8237 LNL	32D
2	Each Flush Bolts	557(555 if metal)	26D
2	Door Closers	351	EN
2	Kick Plates	8 X 2 LWD	32D
2	Wall Stops	409	32D
2	Silencers	GJ64	

HW-15

Each to Have:

2	Pivots	195	26D
2	Inter. Pivots	EM19	26D
1	Lockset	51 52-8237 LNL	32D
2	Flush Bolts	555	32D
2	Door Closer	351 P10	EN
2	Wall Stop	409	32D

HW-16

Each to Have:

6	Each Hinges	TA2314 4.5 X 4.5 NRP	32D
1	Lockset	51 52 76-8204 LNL	32D
2	Surface Bolts	360F 12"	2C
2	Oh Holders	590H	26D
1	Thresholds	177AS X DW	AL
1	W/Strip	S88D X LR	
1	Rain Drip	346C X LR	AL

HW-17

Each to Have:

3	Each Hinges	TA2314 4.5 X 4.5	32D
1	Lockset	8265 LNL	32D
1	Stop	409 or 443 As Required	32D
1	Threshold	171A X DW	AL
3	Silencers	GJ64	

HW-18

Each to Have:

3	Each Hinges	TA2314 4.5 X 4.5	32D
1	Lockset	51 52-8205 LNL	32D
1	Flush Bolts	555	26D
1	Door Closers	351	EN
1	Stops	409	32D
1	Threshold	151A X DW	AL
3	Silencers	GJ64	

HW-19

Each to Have:

3	Each Hinges	T4A3386 4.5 X 4.5	32D
1	Exit Device	12 51 52-8813 ETL	32D
1	Door Closer	351	EN
1	Kick Plate	8 X 2 LWD	32D
1	Stop	409	32D
3	Silencers	GJ64	

HW-20

Each to Have:

3	Each Hinges	TA2314 4.5 X 4.5	32D
1	Lockset	51 52-8205 LNL	32D
1	Door Closer	351 PSH	EN
1	Kick Plate	8 X 2 LWD	32D
1	Wall Stop	409	32D
3	Silencers	GJ64	

HW-21

Each to Have:

3	Each Hinges	TA2314 4.5 X 4.5	32D
1	Lockset	51 52-8205 LNL	32D
1	Door Closer	351	EN
1	Door Bottom	350CR X DW	AL
1	Threshold	151AV X DW	AL
1	W/Strip	S88D X LR	

HW-22

Each to Have:

6	Each Hinges	T4A3386 4.5 X 4.5 NRP	32D
2	Exit Device	12-8710	32D
2	Door Closer	351 P10	EN
2	Kick Plate	8 X 2 LWD	32D
2	Magnetic Holder	986	689
2	Silencers	GJ64	

HW-24

Each to Have:

1	Pivots	195	26D
1	Inter. Pivots	EM19	26D
1	Lockset	51 52-8205 LNL	32D
1	Wall Stop	409	32D
3	Silencers	GJ64	

HW-25

Each to Have:

6	Each Hinges	T4A3386 4.5 X 4.5	32D
2	Exit Device	8810 ETL	32D
2	Door Closer	351 PSH	EN
2	Kick Plate	8 X 2 LWD	32D
6	Silencers	GJ64	

HW-26

Each to Have:

1	Pivots	195	26D
1	Inter. Pivots	EM19	26D
1	Lockset	51 52-8237 LNL	32D

1	Door Closer	351	EN
1	Kick Plate	8 X 2 LWD	32D
1	Wall Stop	409	32D

HW-27

Each to Have:

6	Each Hinges	TA2314 4.5 X 4.5	32D
1	Lockset	51 52-8205 LNL	32D
2	Each Flush Bolts	557 (555 if metal)	26D
1	Floor Stop	442	26D
1	Wall Stop	409	32D
2	Silencers	GJ64	

HW-28

Each to Have:

3	Each Hinges	TA2314 4.5 X 4.5	32D
1	Lockset	8215 LNL	32D
1	Wall Stop	409	32D
3	Silencers	GJ64	

HW-29

Each to Have:

3	Each Hinges	TA2314 4.5 X 4.5	32D
1	Lockset	51 52-8225 LNL	32D
1	Door Closer	351	EN
1	Threshold	177AV X DW	AL
1	W/Strip	S88D X LR	
1	Rain Drip	346C X LR	AL

HW-30

Each to Have:

6	Each Hinges	T4A3386 4.5 X 4.5 NRP	32D
2	Exit Devices	12 51 52-8804 ETL	32D
1	Removable Mullion	12-980	P
2	Door Closers	351 P10	EN
2	Kick Plates	8 X 2 LWD	32D
2	Stops	409	32D

END OF SECTION