

SECTION 08 70 00 _ SUMMARY

University Contact: Structural Services, Maintenance & Operations (302) 831-8456

PART 1 - GENERAL

1.1 SUMMARY

- A. The drawings and General Provisions of the contract, including the Conditions of the Contract (General, Supplementary, and other Conditions, if any) and Divisions 1 as appropriate, apply to the Work specified in this section.

1.2 WORK INCLUDED

- A. Hardware for Exterior and Interior Doors other than specified in specific door sections.
- B. Thresholds and Weather stripping for Exterior Doors.
- C. Specialties as listed herein.

1.3 RELATED WORK

- A. Section 08100: Hollow Metal Doors and Frames.
- B. Section 08210: Wood Doors.
- C. Section 08400: Aluminum Entrances.

1.4 SUBSTITUTIONS

- A. Approval of alternative and/or substitute products will be considered only under terms and conditions specified in Section 01600. This paragraph applies when specific manufacturer's names follow a specified manufacturers name in Part 2.02, or when no manufacturer's names follow a specified manufacturers name in Part 2.02.
- B. Alternate and/or substitute products will be considered only when request includes documented proof product complies with IBC std. 714.2.1 (2003) or UL10C.
- C. Requests for substitution are to be in writing and received by the Architect at least ten days prior to the bid date. The acceptance of any substitutions will be by addendum. Unauthorized substitutions will not be accepted.
- D. The quality of all items of hardware has been clearly indicated by the manufacturer's name and product number. Certain products are specified without substitution and are to be furnished exactly as specified.

1.5 REFERENCE STANDARDS

- A. DHI Recommended locations for Builders Hardware for Standard Steel Doors and Frames
- B. DHI Scheduling Sequence and Scheduling Format

- C. DHI Processing Hardware Schedules and Templates
- D. IBC 2003 Edition, 714.2.1 Hinges
- E. IBC 714.2.1 Section
- F. NFPA 80 Fire Doors & Windows 1999
- G. NFPA 101 Life Safety Code 2000
- H. ANSI A156.18 Material and Finishes
- I. ANSI A156.23 Electromagnetic Locks
- J. ANSI A156.24 Delayed Egress locks
- K. ANSI A117.1 Accessible and Usable Buildings and Facilities, 1998
- L. Governing Codes: When conflict occurs between codes and standards the most stringent requirement governs.

1.6 SUBMITTALS

- A. Submit in accordance with Section 01300
- B. Door hardware Schedule & Format
 - 1. Submit 6 copies of schedule on 8.5 x 11" sheets numbered consecutively and on a 3.5" computer disk in a pdf file. The schedule shall be reviewed prior to submission by a certified Architectural Hardware Consultant, who shall affix his or her seal attesting to the completeness and correctness of the schedule.
 - 2. Furnish cover sheet listing name of project as shown on Contract Documents, Owner, Architect, Contractor, Architectural hardware Consultant (AHC) who prepared the hardware submittal and date of submittal.
 - 3. Furnish a vertical listing of hardware items used followed by manufacturer's name either on cover sheet or immediately following cover sheet. Horizontal schedule is not acceptable.
 - 4. Schedule hardware items for each door separately in typed vertical form. List each door in numerical order under a separate heading using door number in sequence as shown in door Opening Schedule.
 - o The Finishing Hardware Schedule is to clearly indicate the swing, location, number, size, and thickness of each door, as well as type number and finish of each article of hardware required for each opening.
 - o The Finishing Hardware Schedule is to follow the guidelines and format as set forth in the DHI publication, "Scheduling Sequence and Scheduling Format".
 - o Include with each submittal:
 - a. Documentation from UL or approved testing agency indicating hardware is approved for use on doors complying with IBC 2003, 714.2.1 or UL10C.

- b. Wiring diagrams: Elevation, riser, point to point.
- c. Written description of operation at all headings with electric hardware.
- d. Schedules submitted without the above materials will be considered incomplete and will not be reviewed.
- e. Approval of schedule does not relieve Contractor of providing hardware specified for project.
- f. Two complete sets of catalog cuts are to accompany the Finishing Hardware Schedule. The list of cuts is to include the item, manufacturer, and item number.
- g. Name, address, and phone number of automatic door operator installer.
- h. Letter from automatic door operator manufacturer certifying the above listed installer is a factory-authorized installer.

1.7 QUALITY ASSURANCE

A. Rated Openings:

Hardware used in labeled fire or smoke rated openings to be listed for those types of openings and bear the identifying label or mark indicated. U.L. approved for fire. Exit devices in non-labeled openings to be listed for panic.

Project requires door assemblies and components that are compliant with positive pressure and S-label requirements. Specifications must be cross referenced and coordinated to ensure that total opening engineering is compatible with UL 10C-Standard for Positive Pressure Fire Tests of Door Assemblies, and IBC 714.2.1.

1. Certification(s) of compliance shall be made available upon request by the Authority Having Jurisdiction.

B. Qualifications:

1. Contractor is responsible for:
 - a. Proper application and fit of door and specialty hardware in locations as indicated on drawings or as specified.
 - b. Items not specifically mentioned, but necessary to complete work are to be furnished matching in quality and finish of specified items in similar locations.
 - c. Coordinate dimensions between hardware items.
 - d. Furnish and install only hardware items listed on approved Door hardware submittal.

2. Contractor's selection of hardware supplier:
 - a. Proper application and fit of door and specialty hardware in area of project for period no less than five years.
 - b. Recognized supplier to have, full-time, on staff an Architectural Hardware Consultant (AHC) certified by the Door and Hardware Institute or person of equal experience who is acceptable to the Architect and GC. This consultant is to be registered in the Door and Hardware Institute Seal Program.
 - c. Hardware supplier's AHC to be available at all reasonable times during course of work to meet personally with Owner, Architect or Contractor for hardware consultation.
 - d. Supplier willing to agree in writing to maintain parts inventory of items supplied for future service to Owner.
 - e. Supplier to furnish all the hardware listed in this Section 08710 Finishing hardware. All material is to be furnished totally, including the hardware for Aluminum Doors, as listed in the sets. No items may be excluded. Any hardware listed as installed, is to be furnished and installed as part of the Finishing Hardware Bid. The installation is to be by an authorized installer as listed in the sets or by Addendum. The successful bidder is to provide a letter from the factory certifying that the installer is a factory authorized installer.

C. Electric Hardware:

1. Unless noted otherwise in Division 16, provide electric hardware items rated 24 VDC.
2. Coordinate electrical hardware requirements with Division 16 work for electrical distribution, fire alarm, and security systems.

D. Submittal Review Conference:

1. Hardware supplier to arrange a meeting with Contractor, Architect, and owner for the review of hardware, hollow metal, and wood door shop drawings.
2. The hardware supplier attendee is to be an AHC.
3. Representatives from the hollow metal and wood door manufacturers are also to attend. Representatives are to be factory employees, or factory sales agents. Wholesale warehouse employees are not acceptable.
4. Meeting location is to be determined by the Architect.

E. Pre-Installation:

1. Hardware supplier to meet with installer and discuss installation of hardware, templates and any unique hardware applications.

1.8 OPERATION AND MAINTENANCE DATA

- A. Furnish manufacturer's parts list and maintenance instructions for each type of hardware provided and furnish the Owner with the necessary wrenches and tools required for proper maintenance of installed hardware.

1.9 GENERAL REQUIREMENTS

- A. The hardware specified herein is intended to cover all necessary materials required to complete fully the hardware requirements of the building, except for those items of hardware that are covered specifically under other sections of the specifications. If hardware for any particular location is not specified herein, furnish item of identical design, finish and function required for a similar location, hardware shall be of suitable type and ample size and weight to perform the service required.

1.10 DELIVERY, STORAGE AND HANDLING

A. Delivery:

1. Delivery of all hardware to the building site shall be its original package and properly wrapped. Package each of hardware with correct screws, installation templates and bolts for fastening, free from flaws and defects.
2. Deliver packages clearly identified with heading number and door number as approved on hardware schedule.

B. Storage and handling:

1. General Contractor and/or Construction Manager to provide storage area for hardware, which is dry, secure, and complete with shelving and tables for unpacking and storing. A locked room is to be provided by the General Contractor and/or Construction Manager of the finishing hardware.
2. All hardware to be delivered to the jobsite by employees of the finishing hardware supplier. No drop shipments are permitted.
3. Upon delivery, the General Contractor and/or Construction Manager and the hardware supplier to check in the hardware against the approved Finishing hardware Schedule, and place the items on the shelves.
4. After delivery the General Contractor and/or Construction Manager is responsible for the hardware against theft, misplacement, defacements, etc.

1.11 REPRESENTATIVE

- A. Provide a competent representative to inspect and direct method of setting, applying, and adjustment of all hardware. Representative shall not be required to remain constantly at the site, but shall be readily available to consult with the Owner, Contractor and Architect at the project site. Representative shall periodically visit the site during installation of the hardware, and shall make final inspection, to assure that all items are correctly installed and adjusted.

1.12 TEMPLATES

- A. All hardware for pre-machined wood, and hollow metal doors and frames shall be made to template.
- B. Furnish templates and approved hardware schedules to all interested manufacturers in sufficient quantities for preparation of their work to receptive hardware. Templates will be required for all hardware applied to hollow metal and steel.
- C. Where necessary for proper installation, furnish actual hardware to the manufacturer for his installation. Furnish samples to the manufacturer as required so that all provisions for attachment, clearance and other requirements can be made.

1.13 WIRING DIAGRAMS

- A. Furnish wiring for scheduled items requiring power.
- B. Provide an elevation drawing for each door showing location of electric hardware. Include point to point wiring and riser diagrams and power requirements.
- C. Submit wiring diagrams and door elevations with hardware submittal.

PART 2 - PROCEDURES

2.1 GENERAL

- A. Provide items as listed in the schedule at the end of this section, complete to function as intended.
- B. Items as same function and performance are acceptable in conformance with Section 01600 and as listed herein.
- C. Finish:
 - 1. Materials shall have finishes as listed in the schedule of hardware and as follows:
 - o Exterior butt hinges where scheduled - US26D (Dull Chrome Plated). Ball bearing only.
 - o Interior butt hinges - US26D (Dull Chrome Plated). Ball bearing only.

- Exterior and Interior locksets - US32D (Satin Stainless Steel).
 - Cylinders - US26D (Dull Chrome Plated).
 - Panic Exit Devices - US32D (Satin Stainless Steel).
 - Push, Pull, and Kick Plates - US32D (Satin Stainless Steel).
 - Overhead Stops, Flush Bolts, and Floor Stops - US26D (Dull Chrome Plated).
 - Mullions - USP (Prime Coat for Painting).
 - Door Closers - Sprayed Aluminum to match adjacent hardware.
- D. Fastenings: Furnish appropriate screw attachments, through bolts, concealed fasteners and machine screws.
1. Furnish thresholds with machine screw and expansion shields at both ends and at six inches on centers.
- E. Hardware specified in these documents is intended to cover necessary material required to fully complete hardware requirements for specified openings. It is the intention and it shall be understood that hardware herein specified shall be figured in sufficient quantities to fill requirements of the contract drawings even though every item necessary to do so is not specified herein, except for those items of hardware that are specifically covered under other sections of the specifications.
- F. If hardware for any particular location is not specified herein, it shall be furnished of similar design and quality equal to other items specified for similar locations. It shall be of suitable type and ample size and weight to perform services required. Where Underwriter's Label is noted on door schedule, hardware for the opening is to meet the labeling requirements.
- G. Where finish shape or size of member taking hardware is such to prevent use of, or make unsuitable exact types specified, suitable types shall be furnished having as near as practical same operation as that which is specified.
- H. Hardware shall be delivered to building site properly wrapped with correct screws and bolts for fastening, and shall be free from flaws and defects. It shall be properly labeled for location with item number corresponding with hardware schedule. Thresholds and floor type door stops shall have "tamping shields".
- I. Mounting requirements: Refer to Section 01046 for requirements.
- J. It is the intent that hardware be furnished and installed so that it meets applicable Barrier-Free Facilities Standards of the State of Delaware, IBC, A.N.S.I. A117.1, and ADA where applicable. Note especially the following:
1. Lever heights.
 2. Knurled levers as required by Handicapped code and where directed.
 3. Closer closing force.

4. Pulls and Push Plate height.

2.2 ACCEPTABLE MANUFACTURERS

A. Manufacturer and type: Butt hinges scheduled as manufactured by Hager Hinge Company, and shall of Ball Bearing and Plain Bearing, five knuckle types as scheduled.

1. Hinges shall be of sizes as follows:

- Doors 3 feet and less in width - 4½ inch in height.
- Doors 3 feet and over in width - 5 inch in height.
- Doors 5 feet and less in height - Provide 1 Pair.
- Doors 7 feet and less in height -Provide 1½ Pairs.
- Doors 7 feet and over in height - Provide ½ Pair of each 2 feet in height.
- Width of hinges shall be determined by jamb conditions and shall be of sufficient width to clear trim.
- Hinges shall be of duty scheduled; sizes scheduled may vary depending on conditions. Provide N.R.P. (non-removable pins) on all doors that are listed L.H.R. or R.H.R. that are equipped with butt hinges.

2. Door Closers: Shall be as manufactured by Norton and shall be of surface types 1604 of regular and parallel type arms. Closers shall be of sizes as recommended by the manufacturer, and shall be equipped with a back-check valve, and two separate valves for latch and closing speeds. All closers shall have a five year warranty. In residence halls LCN closers are preferred, model 4040 unless approved. Closers should be thru bolted.

Special Notes:

Interior Housing –	LCN 1261
Exterior Housing –	LCN 4040 XP
Interior Academics -	Norton 1604
Exterior Academics -	LCN 4040 XP

3. Handicap Operators: Shall be as manufactured by Nabco Entrances, Inc. Operators shall be Model GT 710 or Horton 7000 low energy, of arm sizes as scheduled with buttons located 36" above finish floor. Operators on all non-rated doors should be tied to EMERGENCY power.
4. Exit Devices: Shall be as manufactured by Sargent, and shall be Series 8800, of functions as scheduled.
5. Locksets and Latchsets: Shall be as manufactured by Best Access Systems and shall be 45H Lever Series mortise type, with Lever-15/Rose-H trim, or Schlage L series, with lever 06 and A Rose trim. Locksets shall be functions scheduled. Strikes shall be of sufficient length to clear trim.

6. Cylinders shall be as manufactured by Best Access Company, and shall be extruded brass, and shall be of removable core type, equipped with no less than 7 pins.
7. Flush Bolts, Wall Bumpers, and Floor Stop: Shall be as manufactured by Ives and shall be as scheduled.
8. Push Plates, Pull Plates, and Kick Plates: Shall be as manufactured by Ives and shall be of types, and sizes scheduled. Plates shall be .050 ga. and shall have edges beveled on all sides.
9. Overhead Stops: Shall be as manufactured by Glynn-Johnson Corp., and shall be of the 80 or 100 series, of sizes as scheduled.
10. Balance of hardware items shall be scheduled.

B. Acceptable Substitutions:

1. Butt Hinges: McKinney and Bommer. Ball bearing only.
2. Flush Bolts, Stops, and Wall Bumpers: Triangle Brass Mfg. Co., and Builders Brass Works.
3. Push, Pull and Kick Plates: Triangle Brass Mfg. Co., Door Controls International, Rockwood and Builders Brass Works.
4. Door Closers: Norton 1600 Series.
5. No substitutes will be permitted on the following:
 - a. Best Access Systems/ Schlage L series mortise locksets and latchsets.
 - b. Glynn Johnson Holders
 - c. Best Lock Cylinders
 - d. Nabco Entrances, Inc., Auto Operators
6. Equivalent products of other manufacturers may be proposed for approval during bidding.

C. Templates: All hardware for metal doors and frames shall be made to template. Furnish templates and hardware scheduled in sufficient quantities for preparation of all hardware.

D. Gasketed Doors: Where noted on the schedule, provide gasketing for doors consisting of National Guard Products. Clear anodized aluminum finish.

2.3 KEYING

- A. Keying shall be factory engineered, produced and recorded.
- B. All locks shall be furnished with cylinders, of type (1E74) or (1E72) with modifications as required, manufactured by Best Access Systems. Cores shall be keyed to the Best Masterkey System of the University, standard in academics and premium in housing, as approved by the University and coordinated by the University Lock and Hardware Services.
- C. For the construction period, locks shall be provided with black plastic plugs, for contractor's convenience. These shall be replaced, at time of substantial completion of the building, by the University, with permanent cores keyed by the University. Exterior doors shall be keyed alike by the University to a Project core for the convenience of the contractor and the University at the time of hardware installation to secure the construction site.

2.4 HARDWARE SCHEDULE

- A. Each door shall have hardware conforming to the foregoing specifications grouped in sets according to the following schedule. Manufacturers' numbers used in the schedule are not complete and must be supplemented to indicate the hereinbefore specified features.
- B. Locks: All locks to be mortise type with heavy gauge nickel plate steel case and heavy gauge steel beveled fronts. Armored scalp plate and strikes to be bronze. Latch bolts to be two-piece mechanical anti-friction bolt. All locks to have an auxiliary dead-locking latch bolt to prevent retraction of regular latch bolt when door is locked. Lock finish to be US32D. All locks to receive wrought boxes with strike.
- C. Surface Closers: Surface type shall have a full rack and pinion mechanism providing positive continuous checking action from fully open position. Key controlled adjusting valves to control closing speed, latching speed and back check. Surface type to be surface mounted with case finished in aluminum. All closers to be furnished with sex nuts and bolts. Surface type to have 15% spring power adjustment. All closers shall be mounted in parallel arm configuration.
- D. Door Operators: Door operators and controls are to be hardwired. On all non-rated openings.
- E. Exit Device - Rim Flat Bar: Exit devices to consist of rim devices with flat cross-bar and straight through operation. Latch bolts to have 3/4" throw. Outside trim to be cast with thru bolts. US32D finish.
- F. Door Holders and Stops: Overhead holders and stops as specified to be architectural bronze. Surface holders to be supplied with thru bolts for door. Wall bumpers to be cast bronze or brass

- (finished US26D) and furnished with proper attachments for fastening the wall bumpers.
- G. Pulls and Plates: Pulls are to be of style and finish as indicated with thru-bolts. Push plates are to be stainless steel .050" thickness with sizes as indicated.
 - H. Kick Plates and Mop Plates: Kick plates and mop plates to be .050 ga. with beveled edges (B4E). Width of kick plates to be 2" less than door width on single door and 1" less on pair of doors.
 - I. Silencers: Interior frames without gasketing will receive rubber silencers #20 or #21, two (2) for each double and three (3) for each single frame.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. General Contractor and/or Construction Manager to verify doors and frames are ready to receive work, and dimensions are as indicated on shop drawings or as instructed by manufacturers.
- B. General Contractor and/or Construction Manager to verify power supply is available to electrically operated devices.

3.2 INSTALLATION

- A. Install finish hardware in accordance with reviewed hardware schedule and manufacturer's printed instructions. Pre-fit hardware before finish is applied, remove and reinstall after finish is completed. Install hardware so that parts operate smoothly, close tightly and do not rattle.
- B. Installation of hardware shall comply with JFPA 80, UL10C, and NFPA 101 requirements.
- C. Set units level, plumb and true to line and location. Adjust and reinforce attachment to substrate as necessary for proper installation and operation.
- D. Drill and countersink units which are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.
- E. Set thresholds for exterior doors in full bed of butyl-rubber or polyisobutylene mastic sealant, forming tight seal between threshold and surface to which set. Securely and permanently anchor thresholds, using countersunk non-ferrous screws to match color of thresholds (stainless steel screws at aluminum thresholds).
- F. Lead Protection: Lead wrap hardware penetrating lead-lined doors. Levers and roses to be lead lined. Apply kick and armor plates with 3M adhesive #1357, as recommended by 3M Co., on lead-lined doors.

3.3 FIELD QUALITY CONTROL

- A. After installation has been completed, provide services of qualified hardware consultant to check Project to determine proper application of finish hardware according to schedule. Also check operation and adjustment of hardware items.
- B. Adjust door control devices to compensate for final operation of heating and ventilating equipment.

3.4 ADJUSTING AND CLEANING

- A. At final completion, hardware shall be left clean and free from disfigurement. Make final adjustment to door closers and other items of hardware. Where hardware is found defective repair or replace or otherwise correct as directed.
- B. Adjust door closers to meet opening force requirements of Uniform Federal Accessibility Standards.
- C. Final Adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy of space or area, return to work during week prior to acceptance or occupancy, and make final check and adjustment of hardware items in such space or area. Clean operating items as necessary to restore proper function and finish of hardware and doors.
- D. Instruct Owner's personnel in proper adjustment and maintenance of door hardware and hardware finishes.
- E. Clean adjacent surfaces soiled by hardware installation

3.5 PROTECTION

- A. Provide for proper protection of items of hardware until Owner accepts Project as complete.

3.6 EXISTING OPENINGS

- A. Existing Openings:
 - 1. The finishing hardware supplier is responsible for surveying all existing doors and frames in order to verify the existing hardware preps and assure compatibility with specified hardware.
 - 2. The survey is to be accomplished prior to submitting schedules and shop drawings.
 - 3. Hardware supplier is to furnish a letter, certifying that the survey was completed prior to preparing the shop drawings and schedules. A copy of the survey list with door numbers and survey information is to be included with this letter.

- 4. Hardware schedules not complying with above will not be reviewed and will be returned for proper compliance.

3.7 HARDWARE SETS

A. The following schedule of hardware sets shall be considered a guide only, and the supplier is cautioned to refer to general conditions, and the preamble to this section. It shall be the hardware supplier’s responsibility to furnish all required hardware.

B. Provide hardware as specified in the previous articles and the following sets:

Set #1

Doors: 1 pr. main entrance doors with surface overhead stop - LHR/RHR Act.

Each to have:

6	Hinges	Hager	BB1199 4 ½ X 4 ½ NRP	US32D
2	Exit Devices	Sargent	43-8804 STS	US32D
1	Mullion	Sargent	L-980S	USP
1	Rim Cylinder	Best	1ESPL-7-A05994	US26D
1	Mortise Cylinder	Best	1ESPL-7-A35124 X R709	US26D
2	Closers	LCN	PA4040 XP	AL
2	Kickplate	Ives	8"x35"x.050 ga.B4E	US32D
2	O.H. Stops	Glynn-Johnson	81S	US26D
1	Thresholds	National Guard	425 x 72"	AL
2	Silencers	Ives	20(HM) or 21(WD)	GR

Set #2

Door: 1 single main entrance door with surface OH stop - LHR/RHR

Each to have:

3	Hinges	Hager	BB1199 4 ½ X 4 ½ NRP	US32D
1	Exit Device	Sargent	43-8804 STS	US32D
1	Rim Cylinder	Best	1ESPL-7-A05994	US26D
1	Closer	LCN	PA 4040 XP	AL
1	Kickplate	Ives	8"x34"x.050 ga.B4E	US32D
1	O.H. Stop	Glynn-Johnson	81S	US26D
1	Threshold	National Guard	425 x 36"	AL
3	Silencers	Ives	20(HM) or 21(WD)	GR

Set #3

Doors: 1 pr. vestibule doors non-locking - LHR/RHR

Each to have:

6	Hinges	Hager	BB1168	US26D
2	Pull Plates	Ives	8303-0S32D 3½ x 15"	US32D
2	Push Plates	Ives	8200S32D 3½ x 15"	US32D
2	Closers	LCN	PA 4040 XP	AL
2	Kickplate	Ives	8"x35"x.050 ga.B4E	US32D
2	O.H. Stop	Glynn-Johnson	81S	US26D
4	Silencers	Ives	20(HM) or 21(WD)	GR

Set #4

Doors: Office door with wall stop may be a labeled opening - LHR/RHR

Each to have:

3	Hinges	Hager	BB1279 4½ x 4½ NRP	US26D
1	Lock Set	Best	45-H7-E-15-H	US32D
1	Closer	Norton	PA 1604 BC SNB	AL
1	Kickplate	Ives	8"x34"x.050 ga.B4E	US32D
1	Wall Stop	Ives	407½	US26D
3	Silencers	Ives	20(HM) or 21(WD)	GR

Set #5

Doors: Classroom door with mortise overhead stop may be used on a labeled opening – LHR/RHR

Each to Have:

3	Hinges	Hager	BB1168 4½ x 4½ NRP	US26D
1	Lock Set	Best	45H7-R-15-H	US32D
1	Closer	Norton	PA 1604 BC SNB	AL
1	Kickplate	Ives	8"x 34"x.050 ga.B4E	US32D
1	O.H. Stop	Glynn-Johnson	100S-ADJ	US26D
3	Silencers	Ives	20(HM) or 21(WD)	GR

Set #6

Doors: Classroom door with wall stop - LH/RH

Each to have:

3	Hinges	Hager	BB1168 4½ x 4½	US26D
1	Lock Set	Best	45H7-R-15-H	US32D
1	Stop	Ives	407½	US26D

3	Silencers	Ives	20(HM) or 21(WD)	GR
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Set #7

Doors: Classroom door with mortise overhead stop - LH/RH

Each to have:

3	Hinges	Hager	BB1168 4½ x 4½	US26D
1	Lock Set	Best	45H7-R-15-H	US32D
1	O.H. Stop	Glynn-Johnson	100S-ADJ	US26D
3	Silencers	Ives	20(HM) or 21(WD)	GR

Set #8

Doors: Classroom door with wall stop - LHR/RHR

Each to have:

3	Hinges	Hager	BB1168 4½ x 4½ NRP	US26D
1	Lock Set	Best	45H7-R-15-H	US32D
1	Closer	Norton	PA 1604 BC SNB	AL
1	Kickplate	Ives	8"x34"x.050 ga.B4E	US32D
1	Stop	Ives	407½	US26D
3	Silencers	Ives	20(HM) or 21(WD)	GR

Set #9

Doors: Storeroom door with surface stop may be used on labeled opening LHR/RHR

Each to have:

3	Hinges	Hager	BB1279 4½ x 4½ NRP	US26D
1	Lock Set	Best	45H7-D-15-H	US32D
1	Closer	Norton	PA 1604 BC SNB	AL
1	Kickplate	Ives	8"x34"x.050 ga.B4E	US32D
1	O.H.Stop	Glynn-Johnson	450S	US26D
3	Silencers	Ives	20(HM) or 21(WD)	GR

Set #10

Door: Storeroom door with mortise overhead stop may be used on labeled opening - LHR/RHR

Each to have:

3	Hinges	Hager	BB1279 4½ x 4½ NRP	US26D
1	Lock Set	Best	45H7-D-15-H	US32D
1	Closer	Norton	PA 1604 BC SNB	AL
1	Kickplate	Ives	8"x34"x.050 ga.B4E	US32D
1	O.H. Stop	Glynn-Johnson	410S	US26D
3	Silencers	Ives	20(HM) or 21(WD)	GR

Set #11

Doors: Storeroom door with wall stop may be used on a labeled opening - LHR/RHR

Each to have:

3	Hinges	Hager	BB1279 4½ x 4½ NRP	US26D
1	Lock Set	Best	45H7-D-15-H	US32D
1	Closer	Norton	PA 1604 BC SNB	AL
1	Kickplate	Ives	8"x34"x.050 ga.B4E	US32D
1	Stop	Ives	407½	US26D
3	Silencers	Ives	20(HM) or 21(WD)	GR

Set #12

Doors: Storeroom door with wall stop - LH/RH

Each to have:

3	Hinges	Hager	BB1279 4½ x 4½	US26D
1	Lock Set	Best	45H7-D-15-H	US32D
1	Stop	Ives	407½	US26D
3	Silencers	Ives	20(HM) or 21(WD)	GR

Set # 13

Doors: 1 pr. doors to storeroom with surface overhead stop may be used on a labeled opening – LHR/RHR

Each to have:

6	Hinges	Hager	BB1279 4½ x 4½ NRP	US26D
2	Flush Bolts	Ives	458	US26D
1	Lock Set	Best	45H7-D-15-H	US32D
1	Mort.Cylinder	Best	1E74	US26D
1	Closer	Norton	PA 1604 BC SNB	AL
2	Kickplates	Ives	8"x35"x.050 ga.B4E	US32D
1	O.H. Stop	Glynn-Johnson	450S	US26D
2	Silencers	Ives	20(HM) or 21(WD)	GR

Set #14

Doors: 1 pr. doors to storeroom with wall stop may be used on a labeled opening - LHR/RHR

Each to have:

6	Hinges	Hager	BB1279 4½ x 4½ NRP	US26D
2	Flush bolts	Ives	458	US26D
1	Lock Sets	Best	45H7-D-15-H	US32D
1	Closer	Norton	PA 1604 BC SNB	AL
2	Kickplates	Ives	8"x35"x.050 ga.B4E	US32D
2	Stops	Ives	407½	US26D
2	Silencers	Ives	20(HM) or 21(WD)	GR

Set #15

Door: Storeroom door with wall stop may be used on labeled opening - LHR/RHR

Each to have:

3	Hinges	Hager	BB1279 4½ x 4½ NRP	US26D
1	Lock Set	Best	45H7-D-15-H	US32D
1	Closer	Norton	PA 1604 BC SNB	AL
1	Kickplate	Ives	8"x34"x.050 ga.B4E	US32D
1	Stop	Ives	407½	US26D
3	Silencers	Ives	20(HM) or 21(WD)	GR

Set #16

Doors: Interior door to mechanical room with wall stop, special lever for handicap may be used on a labeled opening - LHR/RHR

Each to have:

3	Hinges	Hager	BB1279 4½ x 4½ NRP	US26D
1	Lock Set	Best	45H7-D-15-H-TL	US32D
1	Closer	Norton	PA 1604 BC SNB	AL
1	Kickplate	Ives	8"x34"x.050 ga.B4E	US32D
1	Stop	Ives	407½	US26D
3	Silencers	Ives	20(HM) or 21(WD)	GR

Set #17

Door: Mechanical room door with surface stop, special lever for handicap may be used on a labeled opening - LHR/RHR

Each to have:

3	Hinges	Hager	BB1279 4½ x 4½ NRP	US26D
1	Lock Set	Best	45-H7-D-15-H-TL	US32D
1	Closer	Norton	PA 1604 BC SNB	AL
1	Kickplate	Ives	8"x34"x.050 ga.B4E	US32D
1	O.H. Stop	Glynn-Johnson	450S	US26D
3	Silencers	Ives	20(HM) or 21(WD)	GR

Set #18

Door: Closet or passage door with mortise overhead stop (No Lock) - LH/RH

Each to have:

3	Hinges	Hager	BB1279 4½ x 4½	US26D
1	Latch Set	Best	45H0-N-15-H	US32D
1	O.H. Stop	Glynn-Johnson	410S	US26D
3	Silencers	Ives	20(HM) or 21(WD)	GR

Set #19

Door: Passage set (No Lock) may be used on a labeled opening - LHR/RHR

Each to have:

3	Hinges	Hager	BB1279 4½ x 4½	US26D
1	Latch Set	Best	45H0-N-15-H	US32D
1	Closer	Norton	PA 1604 BC SNB	AL
1	Kickplate	Ives	8"x34"x.050 ga.B4E	US32D
1	Stop	Ives	407½	US26D
3	Silencers	Ives	20(HM) or 21(WD)	GR

Set #20

Door: Bedroom or bathroom door with wall stop - LH/RH

Each to have:

3	Hinges	Hager	BB1279 4½ x 4½	US26D
1	Privacy Set	Best	45H0-L-15-H	US32D
1	Stop	Ives	407½	US26D

3	Silencers	Ives	20(HM) or 21(WD)	GR
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Set #21

Doors: Public bathroom door with wall stop - LHR/RHR

Each to have:

3	Hinges	Hager	BB1168 4½ x 4½ NRP	US26D
1	Deadlock	Best	38H7-R	US26D
1	Pull Plate	Ives	8303-0S32D 3½ x 15"	US32D
1	Push Plate	Ives	8200S32D 3½ x 15"	US32D
1	Closer	Norton	PA 1604 BC SNB	AL
1	Kickplate	Ives	8"x34"x.050 ga.B4E	US32D
1	Stop	Ives	407½	US26D
3	Silencers	Ives	20(HM) or 21(WD)	GR

Set #22

Doors: Interior corridor with wall stop, door controls to be hardwired on all non-rated doors - LHR/RHR, LH/RH.

Each to have:

3	Hinges	Hager	BB1168 4½ x 4½ NRP	US26D
1	H.C. Operator	Nabco	GT710	US26D
2	Wall switch	Nabco	24089-05 (Wall)	US32D
		Nabco	123816 (Frame)	US32D
1	Pull Plate	Ives	8303-0S32D 3½ x 15"	US32D
1	Push Plate	Ives	8200S32D 3½ x 15"	US32D
1	Kick plate	Ives	8"x34"x.050 ga.B4E	US32D
1	Stop	Ives	407½	US26D
3	Silencers	Ives	20(HM) or 21(WD)	GR

Set #23

Doors: Interior stair tower fire door with wall stop will be used on a labeled opening - LHR/RHR

Each to have:

3	Hinges	Hager	BB1168 4½ x 4½ NPR	US26D
1	Exit Device	Sargent	12-8815 ETL	US32D
1	Closer	Norton	PA 1604 BC SNB	AL
1	Kick plate	Ives	8"x34"x.050 ga.B4E	US32D
1	Stop	Ives	407½	US26D

3	Silencers	Ives	20(HM) or 21(WD)	GR
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Set #24

Doors: Corridor/Bedroom with wall stop - LH/RH

Each to have:

3	Hinges	Hager	BB1279 4½ x 4½	US26D
1	Lock set	Best	45H7-T-15-H	US32D
1	Closer	Norton	PA 1604 BC SNB	AL
1	Kickplate	Ives	8"x34"x.050 ga.B4E	US32D
1	Stop	Ives	407½	US26D
3	Silencers	Ives	20(HM) or 21(WD)	GR

Set #25

Doors: Fire Command Center door with wall stop, lock to be 24VAC and connected to fire alarm system - may be used on labeled opening.

Each to have:

2	Hinges	Hager	BB1279 4½ x 4½	US26D
1	Hinge	Hager	BB1279 4½ x 4½	US26D
1	Lock Set	Best	45H7-EWEU-15-H	US32D
1	Closer	Norton	PA 1604 BC SNB	AL
1	Kickplate	Ives	8"x34"x.050 ga.B4E	US32D
1	Stop	Ives	407½	US26D
3	Silencers	Ives	20 (HM) or 21 (WD)	GR

Set #26

Doors : Sliding door (No lock)

Each to have:

1 set	B1 Passing hdw.		F 72 134 5'	
2	Flush pulls	Ives	227	US26D

Set #27

Doors: A garage door with no outside operation

Each to have: Hardware by door manufacturer

Set #28

ALL ELECTRICAL PANELS WITH LOCK IN PUBLIC AREAS

Each to have:

1	Lock	Best	5L7RL Series (Handing as required)	US26D
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Set #29

ALL CABINET **DOORS** REQUIRING LOCK
ALL CABINET **DRAWERS** REQUIRING LOCK

Each to have:

1	Lock	Best	3L7RD Series (Handing as required)	US26D
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Set #30

ALL ELEVATOR CONTROLS REQUIRING LOCK

Each to have:

1	Cylinder	Best	Appropriate Cylinder	US26D
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Set #31

Doors to be held open by electromagnets labeled or non-labeled opening LHR/RHR, LH/RH.

Each to have:

1	Electromagnet	Rixon	997 x 24 VDC	US26D
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