ADDENDUM NO. 1

March 14, 2016

To all bidders for the work entitled:

ADDITIONS AND REMODELING
ROBERT ASP, ELLEN HOPKINS AND S.G. REINERTSEN ELEMENTARY SCHOOLS
MOORHEAD AREA PUBLIC SCHOOL DISTRICT 152
MOORHEAD, MINNESOTA

The proposed Contract Documents are modified as follows:

PLEASE NOTE:
A Pre-bid walkthrough is scheduled for Thursday, March 17th as such:
Hopkins Elementary School - 3 PM (south main entrance)
SG Reinertsen Elementary School - 4 PM (main east entrance)

Walkthrough is not mandatory but highly suggested.

I. SPECIFICATIONS

ASP AND HOPKINS ELEMENTARY SCHOOLS:

Section 05 1200- Structural Steel Framing

1. At canopy steel tube columns: (NE column at each school)
   a. As part of this section provide cutouts in column for electrical boxes to serve recessed card access reader and automatic door operator push button. Locations and sizes to be indicated by Architect on the shop drawings.

ALL SCHOOLS:

Section 00 0200-Bid Package Summary

1. Bid Package 6A- 'General Work and Labor'
   a. Delete Section 10 2600 Wall and Door Protection. Section does not exist.

2. Bid Package 7A – Provide the work associated with furnishing and installing moisture barrier (Tyvek) as per section 07 2800. (Interior vapor barrier to be furnished and installed by Bid Package 9B.)

3. Bid package 9B 'Drywall'
   a. Add Section 05 4100 Cold Formed Metal Framing to this bid package
   b. Delete 06 1100 Framing and Sheathing. Section does not exist.
   c. This bid package shall include furnishing and installing the vapor barrier as per Section 07 2600.

Section 05 4100 - Cold Formed Metal Framing

1. Delete requirement for engineering of structural steel studs.

Section 06 4100 - Architectural Wood Casework

1. As part of this work provide a total of 6 (distributed between the three schools) 2" grommets. Cut into countertops at locations to be determined in the field.

Section 08 7100 - Door Hardware

1. See attached section. Add to project manual.

Section 12 2113 Horizontal Louver Blinds

Window blind schedule for blinds at each school:

Asp Elementary School

Opening on Plan	Size (w x h)
AL1	7'-1" x 6'-5"
AL2	7'-1" x 6'-5"
AL3	3'-6" x 6'-5"
AL4	6'-4" x 6'-5"
AL5	11'-0"x 6'-5"
AL6	7'-2" x 6'-5"
HM 6	3'-8" x 4'-3" (2 thus)
HM 7	5'-0" x 4'-3"
Sidelite -door 005	4'-1" x 7'-0"
Sidelite -door 007	1'-8" x 7'-0"

Hopkins Elementary School

Opening on Plan	Size (w x h)
AL1	7'-1" x 6'-5"
AL2	7'-1" x 6'-5"
AL3	3'-6" x 6'-5"
AL4	6'-4" x 6'-5"
AL5	11'-0"x 6'-5"
AL6	7'-2" x 6'-5"
HM 6	3'-8" x 4'-3" (2 thus)
HM 7	5'-0" x 4'-3"
Sidelite -door 005	4'-1" x 7'-0"
Sidelite -door 007	1'-8" x 7'-0"

Reinertsen Elementary School

Opening on Plan	Size (w x h)
W1	4'-0" x 6'-10"
W2	2'-8" x 6'-10"
HM4	4'-10" x 7'-2"
Sidelite -door A105	4'-6" x 7'-2"

Also: at Reinertsen, work as part of this section requires removal, inventory, cleaning and reinstallation of 12 existing window blinds (2'-8" x 6'-10" approximate size)

II. DRAWINGS

HOPKINS ELEMENTARY SCHOOL ONLY

Cover Sheet

1. Refer to Cover Sheet at Asp Elementary School-Provide same concrete joint configuration and spacing under entrance canopy as shown at Asp Elementary School.

ASP AND HOPKINS ELEMENTARY SCHOOLS:

Cover Sheet

1. 6A- Move splash block from ground below scupper at west side of entrance canopy and move to north end of canopy roof to collect water from scupper at roof to the north of the canopy.
2. 32B- In place of the ground splash block provide one dozen 16" diameter or larger field stones at each site to be placed directly below west canopy scupper. Bend/extend proposed concrete landscape curb to the south to surround new field stone 'splash'.

Sheet A1.1

1. Door Types - Elevation 'OH 1'
   a. Change door height from 4'-2" to 7'-0". Added height is to allow door housing to be placed as high as possible and above ceiling.
2. Detail 3/A1.1
   a. Note 08 4226.A1 should be corrected to read as 08 4113.A1.
3. Door and Frame Schedule
   a. Door 011 (pair) is called to remain as existing. In order to accommodate specified hardware remove existing door and hardware, discard and replace with new wood doors Type WD2, 3'-0" x7'-0". Provide 20 minute rating with appropriate glass and glass frame. Provide specified hardware.

Sheet A1.2
1. Entry 001
    a. Change note on floor from 'Porcelain Tile' to 'Polished Concrete.'-by 3B.
2. Numbered note 2
    a. Clarification: Provide wood blocking in wall and install owner-provided flat screen wall mount bracket. Work by bid package 6A.

Sheet A3.1
1. Building sections 2/A3.1 and 4/A3.1
    a. Note 31 0000. A1 (compacted granular fill) shown under interior slab of addition should be labeled as 31 2300.A1 (compacted granular fill) . Section 31 0000 does not exist.
    b. Condoc notes: Change note 31 0000.A1 to 31 2300.A1.
2. Building section 3/A3.1
    a. Missing number at detail bubble at top of building section should be labeled 6/A3.2.

Sheet A3.2
1. Wall sections 1, 2, 3 and 4/A3.2
    a. Note 31 0000A.1 (compacted granular fill) shown under interior slab and exterior fill of addition should be labeled as 31 2300.A1 (compacted granular fill). Section 31 0000 does not exist.
    b. Note 31 2200.A2 (6" sand) shown under the slab at the addition should be labeled as 31 2300.A2. Section 31 2200 does not exist.
    c. Condoc notes: Change note 31 0000 A.1 to 31 2300.A1.
       Change note 31 2200 A.2 to 31 2300.A2.
2. Wall section 4/A3.2
    a. Near top of detail-Change Note 09 2900.A3 to 09 2900. A1.

Sheet A5.1
1. Reflected Ceiling Plan
    a. Vestibule 002- Two dashed square represent ceiling fan coil units which will be exposed partially below the ceiling. Ceiling contractor shall frame ceiling grid around these mechanical units as required.

III. APPROVED EQUALS

SECTION	PRODUCT	APPROVED PRODUCT/ MANUFACTURER
08 4113	Aluminum Framed Entrances and Storefronts	CMI Architectural Products

IV. ATTACHMENTS:

Section 08 7100 - Door Hardware with Hardware Set/Index.

END OF ADDENDUM NO. 1

SECTION 08 7100 – DOOR HARDWARE

GENERAL

1.1 CONDITIONS

A. Conditions of the contract (General and Supplementary Conditions) and Division One General Requirements, govern the work of this section.

B. This section includes all material, and related service necessary to furnish all finish hardware indicated on the drawings, or specified herein.

C. Furnish UL listed hardware for all labeled and 20 min. openings in conformance with the requirements for the class of opening scheduled. Underwriters' requirements shall have precedence over specification where conflicts exist.

D. All work shall be in accordance with all applicable state and local building codes. Code requirements shall have precedence over this specification where conflicts exist.

1.2 WORK INCLUDED

A. This section includes the following:

1. Furnish door hardware (for hollow metal, wood doors) specified herein, listed in the hardware schedule, and/or required by the drawings.
2. Thresholds and Weather-stripping (Aluminum frame seals to be provided by aluminum door supplier)
3. Complete hardware for interior and exterior Aluminum doors, excluding cylinders, to be specified by this Section (08 7100), but supplied by Section 08 4113 Aluminum-Framed Entrances and Storefronts. Cylinders for the Aluminum door hardware to be provided by Section 087100.
4. Section 08 4113 will be responsible for jobsite verification and modification of the existing aluminum doors and aluminum frames for specified hardware.
5. Electro-Mechanical Devices
6. Access Control components and or systems specified within this section.
7. Section 08 7100 will be responsible for jobsite verification and modification of the existing wood doors and hollow metal frames for specified hardware.

B. Where items of hardware are not definitely or correctly specified and is required for the intended service, such omission, error or other discrepancy should be directed to the Architect prior to the bid date for clarification by addendum. Otherwise furnish such items in the type and quantity established by this specification for the appropriate service intended.

1.3 RELATED WORK IN OTHER SECTIONS

A. This section includes coordination with related work in the following sections:

1. Division 6 Section "Finish Carpentry".
2. Division 6 Section "Cabinet Hardware"
3. Division 8 Section "Hollow Metal Doors and Frames".
4. Division 8 Section "Wood Doors"
5. Division 8 Section "Aluminum Entrances and Storefronts"
6. Division 28 Sections "Electrical".

1.4 REFERENCES

A. Publications of agencies and organizations listed below form a part of this specification section to the extent referenced.

1. DHI - Recommended Locations for Builders' Hardware.
2. NFPA 80 - Standards for Fire Doors and Windows.
3. NFPA 101 - Code for Safety to Life from Fire in Buildings and Structures.
4. UL - Building Material Directory.
5. DHI - Door and Hardware Institute
6. WHI - Warnock Hersey
7. BHMA - Builders Hardware Manufacturers Association
8. IBC 2006 - International Building Code 2006 Edition (as amended by local building code)

1.5 SUBMITTALS

A. Within ten days after award of contract, submit detailed hardware schedule in quantities as required by Division 1 - General Conditions.

B. Schedule format shall be consistent with recommendations for a vertical format as set forth in the Door & Hardware Institute's (DHI) publication "Sequence and Format for the Hardware Schedule". Hardware sets shall be consolidated to group multiple door openings which share similar hardware requirements. Schedule shall include the following information:

1. Door number, location, size, handing, and rating.
2. Door and frame material, handing.
3. Degree of swing.
4. Manufacturer
5. Product name and catalog number
6. Function, type and style
7. Size and finish of each item
8. Mounting heights
9. Explanation of abbreviations, symbols, etc.
10. Numerical door index, indicating the hardware set/ group number for each door.

C. When universal type door closers are to be provided, the schedule shall indicate the application method to be used for installation at each door: (regular arm, parallel arm, or top jamb).

D. The schedule will be prepared under the direct supervision of a certified Architectural Hardware Consultant (AHC) employed by the hardware distributor. The hardware schedule shall be signed and embossed with the DHI certification seal of the supervising AHC. The supervising AHC shall attend any meetings related to the project when requested by the architect.

E. Check the specified hardware for suitability and adaptability to the details and surrounding conditions.

F. Review drawings from related trades as required to verify compatibility with specified hardware. Indicate unsuitable or in compatible items, and proposed substitutions in the hardware schedule.

G. Provide documentation for all hardware to be furnished on labeled fire doors indicating compliance with positive pressure fire testing UL 10C.

H. Furnish manufacturers' catalog data for each item of hardware in quantities as required by Division 1 - General Conditions.

I. Submit a sample of each type of hardware requested by the architect. Samples shall be of the same finish, style, and function as specified herein. Tag each sample with its permanent location so that it may be used in the final work.

J. Furnish with first submittal, a list of required lead times for all hardware items.

K. After final approved schedule is returned, transmit corrected copies for distribution and field use in quantities as required by Division 1 - General Conditions.

L. Furnish approved hardware schedules, template lists, and pertinent templates as requested by related trades.

M. Furnish necessary diagrams, schematics, voltage and amperage requirements for all electro-mechanical devices or systems as required by related trades. Wiring diagrams shall be opening specific and include both a riser diagram and point to point diagram showing all wiring terminations.

N. After receipt of approved hardware schedule, Hardware supplier shall initiate a meeting including the owner's representative to determine keying requirements. Upon completion of the initial key meeting, hardware supplier shall prepare a proposed key schedule with symbols and abbreviations as set forth in the door and hardware institute's publication "Keying Procedures, Systems, and Nomenclature". Submit copies of owner approved key schedule for review and field use in quantities as required by Division 1 - General Conditions. Wiring diagrams shall be included in final submittals transmitted for distribution and field use.

1.6 QUALITY ASSURANCE

A. Manufacturers and model numbers listed are to establish a standard of function and quality. Similar items by approved manufacturers that are equal in design, function, and quality, may be considered for prior

approval of the architect, provided the required data and physical samples are submitted for approval as set forth in Division One General Requirements.

B. Obtain each type of hardware (hinges, latch & locksets, exit devices, closers, etc.) from a single manufacturer, although several may be indicated as offering products complying with requirements.

C. All hardware items shall be manufactured no earlier than 6 months prior to delivery to site.

D. Hardware supplier shall be factory trained and certified by the manufacture to provide and support all computer managed locks and system components.

E. Installation of hardware shall be installed or directly supervised and inspected by a skilled installer certified by the manufacturer of locksets, door closers, and exit devices used on the project, or with not less than 3 years' experience in successful completion of projects similar in size and scope.

F. Provide hardware for all labeled fire doors, which complies with positive pressure fire testing UL 10C.

G. Comply with all applicable provisions of the standards referenced within section 1.4 of this specification.

H. Hardware supplier shall participate when reasonably requested to meet with the contractor and or architect to inspect any claim for incorrect or non-functioning materials; following such inspection, the hardware supplier shall provide a written statement documenting the cause and proposed remedy of any unresolved items.

1.7 DELIVERY, STORAGE AND HANDLING

A. Hardware supplier shall deliver hardware to the job site unless otherwise specified.

B. All hardware shall be delivered in manufacturers' original cartons and shall be clearly marked with set and door number.

C. Coordinate with contractor prior to hardware delivery and recommend secure storage and protection against loss and damage at job site.

D. Contractor shall receive all hardware and provide secure and proper protection of all hardware items to avoid delays caused by lost or damaged hardware. Contractor shall report shortages to the Architect and hardware supplier immediately after receipt of material at the job site.

E. Coordinate with related trades under the direction of the contractor for delivery of hardware items necessary for factory installation.

1.8 PRE-INSTALLATION MEETING

A. Schedule a hardware pre-installation meeting on site to review and discuss the installation of continuous hinges, locksets, door closers, exit devices, overhead stops, and electromechanical door hardware.

B. Meeting attendees shall be notified 7 days in advance and shall include: Architect, Contractor, Door Hardware Installers (including low voltage hardware), Manufacturers representatives for above hardware items, and any other effected subcontractors or suppliers.

C. All attendees shall be prepared to distribute installation manuals, hardware schedules, templates, and physical hardware samples.

1.9 WARRANTY

A. All hardware items shall be warranted against defects in material and workmanship as set forth in Division One General Requirements.

B. Repair, replace, or otherwise correct deficient materials and workmanship without additional cost to owner.

PART 2 - PRODUCTS

2.1 FASTENERS

A. All exposed fasteners shall be Phillips head or as otherwise specified, and shall match the finish of the adjacent hardware. All fasteners ex-posed to the weather shall be non-ferrous or stainless steel. Furnish correct fasteners to accommodate surrounding conditions.

B. Where torx tamper resistant fasteners have been specified for a specific hardware group, provide torx head fasteners with center pin on ALL exposed fasteners.

C. Coordinate required reinforcements for doors and frames. Seek approval of the architect prior to furnishing through-bolts. Furnish through-bolts as required for materials not readily reinforced.

2.2 BUTT HINGES

A. Acceptable manufacturers and respective catalog numbers:

	Ives	Hager	McKinney
1 Standard Weight, Plain Bearing	5PB1	1279	T2714
2 Standard Weight, Ball Bearing	5BB1	BB1279	TB2714
3 Standard Weight, Ball Bearing, Non-Ferrous	5BB1	BB1191	TB2314
4 Heavy Weight, Ball Bearing	5BB1HW	BB1168	T4B3786
5 Heavy Weight, Ball Bearing, Non-Ferrous	5BB1HW	BB1199	T4B3386

B. Unless otherwise specified, furnish the following hinge quantities for each door leaf.
   1. 3 hinges for doors up to 90 inches.
   2. 1 additional hinge for every 30 inch on doors over 90 inches.
   3. 4 hinges for Dutch door applications.

C. Unless otherwise specified, top and bottom hinges shall be located as specified in division 8 Section "Hollow Metal Doors and Frames". Intermediate hinges shall be located equidistant from others.

D. Unless otherwise specified, furnish hinge weight and type as follows:
   1. Standard weight: plain bearing hinge 5PB1 for interior openings through 36 inches wide without a door closer.
   2. Standard weight: ball bearing hinge 5BB1 for interior opening over 36 through 40 inches wide without a door closer, and for interior openings through 40 inches wide with a door closer.
   3. Heavyweight: 4 ball bearing hinge 5BB1HW for interior openings over 40 inches wide, and for all vestibule doors.
   4. Heavyweight: 4 ball bearing hinge 5BB1HWss for exterior openings unless otherwise listed in groups.

E. Unless otherwise specified, furnish hinges for exterior doors, fabricated from brass, bronze, or stainless steel. Unless otherwise specified, hinges for interior doors may be fabricated from steel.

F. Unless otherwise specified, furnish hinges in the following sizes:

1 5" x 5"	2-1/4" thick doors
2 4-1/2" x 4-1/2"	1-3/4" thick doors
3 3-1/2" x 3-1/2"	1-3/8" thick doors

G. Furnish hinges with sufficient width to accommodate trim and allow for 180-degree swing.

H. Unless otherwise specified, furnish hinges with flat button tips with non-rising pins at interior doors, non-removable loose pins (NRP) at exterior and out-swinging interior doors.

I. Unless otherwise specified, furnish all hinges to template standards.

2.3 CONTINUOUS PIN AND BARREL HINGES

A. Acceptable manufacturers and respective catalog numbers:

	Ives	Marker	Hager
1 Edge Mount Pin & Barrel Stainless Steel Continuous Hinge	700 Series	300 Series	790 Series

B. Continuous hinges shall be full height pin and barrel type hinge providing full height door support up to 600 lbs. Edge mount (unless noted otherwise).

C. Construct hinges of heavy-duty 14-gauge material. The stainless internal pin shall have a diameter of 0.25 and the exterior barrel diameter of 0.438.

D. Hinge shall be non-handed with symmetrical template hole pattern and factory drilled. Hinge must accept a minimum of 21 fasteners on the door and 21 fasteners on the frame.

E. Each knuckle to be 2 inch, including split nylon bearing at each separation for quiet, smooth, self-lubricating operation.

F. Hinge to be able to carry Warnock Hersey Int. or UL for fire rated doors and frames up to 3 hours.

G. Provide machine screws for doors which have been reinforced to accept machine screws.

H. Note: Fire label for doors and frames should be placed on the header and top rail of fire rated doors and frames.

2.4 POWER TRANSFERS

A. Acceptable manufacturers and respective catalog numbers:

	Von Duprin
1 Concealed Two Wire	EPT-2
2 Concealed Ten Wire	EPT-10

B. Concealed power transfers shall be concealed in the door and frame when the door is closed.

C. Concealed power transfers shall have a steel tube to protect wires from being cut.

D. Concealed power transfers with spring tubes shall be rejected.

E. Concealed power transfers shall be supplied with a mud box to house all terminations.

2.5 FLUSH BOLTS AND DUST PROOF STRIKES

A. Acceptable manufacturers and respective catalog numbers:

	Ives	Door Controls	Hager
1 Dust Proof Strike	DP2	80	280X
2 Auto Flush Bolt (Metal Door)	FB31P	842	292D
3 Auto Flush Bolt (Wood Door)	FB41P	942	291D
4 Manual Flush Bolt	FB458	780	282D

B. Unless otherwise specified, provide 12" rods for manual flush bolts for door 7'6" or less, 24" top rods for doors over 7'6" to 8'6".

C. Unless otherwise specified, provide doors over 8'6" with automatic top bolts.

D. Provide automatic flush bolts where required to maintain fire door listing and or egress requirements on pairs of doors.

E. All flush-bolt applications shall be UL listed to be installed with top flush-bolt only. Provide auxiliary fire bolt as required for fire rated openings where less bottom bolt has been specified.

F. Provide all bottom flush bolts with non-locking dust proof strikes.

2.6 EXIT DEVICES

A. Acceptable manufacturers and respective catalog numbers:

	Von Duprin	No Substitution
1 Wide Stile, Push Pad	98Series	
2 Wide Stile, Electric Latch Retraction	QELA 98 Series	
3 Lever Trim	996 Series	
4 Pull Trim	990 Series	

B. Obtain exit devices from a single manufacturer, although several may be indicated as offering products complying with requirements.

C. All exit devices shall be equipped with a sound-dampening feature to reduce touch pad return noise.

D. On full glass doors there shall be no exposed fasteners on the back of the mechanism visible through the glass.

E. All exit devices shall be provided with flush end caps to reduce potential damage from impact.

F. All exit devices shall be provided with dead-locking latch bolts to insure security.

G. All exit devices shall be U.L. listed for accident hazard. Exit device for use on fire doors shall also be U.L. listed for fire exit hardware.

H. Provide optional strikes, special length rods, and adapter plates to accommodate door and frame conditions. Provide narrow style series devices in lieu of wide stile series devices where optional strikes will not accommodate door and frame conditions.

I. Coordinate with related trades to insure adequate clearance and reinforcement is provided in doors and frames. Provide thru bolts as required.

J. Refer to hardware groups for exit device applications utilizing the option of: "less bottom cable and floor strike" (LBL)

K. All exit devices shall be provided with optional trim designs to match other lever and pull designs used on the project.

L. Unless specific exit device dogging options are noted within hardware sets, provide dogging options as follows:

1. Fire Rated devices: Dogging not permitted.
2. Non-Rated Exit Only functions not equipped with outside trim or pull: Less Dogging.
3. Non-Rated Classroom functions: Less Dogging.
4. Non-Rated devices utilizing electric latch retraction or electrified outside trim: Less Dogging.
5. All Other Non-Rated devices: Cylinder Dogging utilizing interchangeable core cylinders. Cylinder keyway shall match locksets furnished on this project.

M. Provide glass bead kits as required to accommodate door conditions. Screws shall not be visible through full glass doors.

N. Where specified, provide compatible keyed mullions with cylinder for pairs of doors.

O. Provide reinforced crossbars for all traditional style exit devices applied to doors over 36" wide.

2.7 LOCKS AND LATCHES

A. Acceptable manufacturers and respective catalog numbers:

	Best	No Substitution
1 Grade 1 Mortise	45H Series 15H	
2 Grade 1 Cylindrical	9K Series 15D	

B. Unless otherwise specified, all locks and latches to have:

1. 2-3/4" Backset
2. 1/2" minimum throw latchbolt
3. 1" throw deadbolt
4. 6 pin cylinders
5. ANSI A115.2 strikes

C. Provide guarded latch bolts for all locksets, and latch bolts with sufficient throw to maintain fire rating of both single and paired door assemblies.

D. Length of strike lip shall be sufficient to clear surrounding trim.

E. Provide wrought boxes for strikes at inactive doors, wood frames, and metal frames without integral mortar covers.

2.8 PULLS, PUSH BARS, PUSH/PULL PLATES

A. Acceptable manufacturers and respective catalog numbers:

	Burns	Hager	Ives
1 Straight Pull (1" dia., 10" ctc)	26C	4J	8103EZ-0
2 Straight Pull (3/4” dia., 8” ctc)	25B	3G	8102-8
3 Offset Door Pull (1" dia., 10" ctc)	39C	12J	8190-0
4 Pull / Push-Bar (1" dia., 10" ctc Pull)	422 x 26C	153	9103EZ-0
5 Offset Pull / Push-Bar (1" dia., 10" ctc Pull)	422 x 39C	157	9190-0
6 Push Plate (.050 4"X 16")	54	30S 4 x 16	8200 4 x 16
7 Push Plate (.050 6"X 16")	56	30S 6 x 16	8200 6" X 16"
8 Pull Plate (1" dia., 10" ctc - .050" X 4" X 16")	5426C	34J 4 x 16	8303EZ-0 4" X 16"

A. Adjust dimensions of push plates to accommodate stile and rail dimensions, lite and louver cutouts, and adjacent hardware. Where required by adjacent hardware, push plates shall be factory drilled for cylinders or other mortised hardware. All push plates shall be beveled 4 sides and counter sunk.

B. Where possible, provide back-to-back, and concealed mounting for pulls and push bars. Push bar length shall be 3" less door width, or center of stile to center of stile for stile & rail or full glass doors.

2.9 COORDINATORS

A. Acceptable manufacturers and respective catalog numbers:

	Ives	Door Controls	Hager
1 Bar Coordinator	COR x FL	600 x Filler	297D x 297F
2 Mounting Bracket	MB Series	AB, C Series	297 Series

B. Provide coordinators at all pairs of doors having automatic flush bolts and closers on the inactive leaf, and for pairs of doors having vertical rod/mortise exit device combinations with overlapping astragals.

C. Provide appropriate filler bars, closer mounting brackets, carry bars, and special top latch preparations as required by adjacent hardware.

2.10 CLOSERS

A. Acceptable manufacturers and respective catalog numbers:

	LCN	No Substitution
1	4011 /4111 EDA	

B. Obtain door closers from a single manufacturer, although several may be indicated as offering products complying with requirements.

C. Provide extra heavy duty arm (EDA / HD) when closer is to be installed using parallel arm mounting.

D. Closers shall use high strength cast iron cylinders, forged main arms, and 1 piece forged steel pistons.

E. Closers shall utilize a stable fluid withstanding temperature range of +120deg F to -30deg F without seasonal adjustment of closer speed to properly close the door. Closers for fire-rated doors shall be provided with temperature stabilizing fluid that complies with standards UL10C.

F. Unless otherwise specified, all door closers shall have full covers and separate adjusting valves for sweeps, latch, and backcheck.

G. Provide closers for all labeled doors. Provide closer series and type consistent with other closers for similar doors specified elsewhere on the project.

H. Provide closers with adjustable spring power. Size closers to insure exterior and fire rated doors will consistently close and latch doors under existing conditions. Size all other door closers to allow for reduced opening force not to exceed 5 lbs.

I. Install closers on the room side of corridor doors, stair side of stairways and interior side of exterior doors.

J. Closers shall be furnished complete with all mounting brackets and cover plates as required by door and frame conditions, and by adjacent hardware.

K. Door closers shall be provided with a powder coat finish to provide superior protection against the effects of weathering. Powder coat finish shall successfully pass a 100 hour salt spray test.

2.11 LOW ENERGY ELECTRO-HYDRAULIC AUTOMATIC OPERATORS

A. Acceptable manufacturers and respective catalog numbers:

	LCN	BESAM
1 Electro-Hydraulic Operator	4640	PowerSwing

B. Where low kinetic energy, as defined by ANSI/BHMA Standard A156.19, power operators are indicated for doors required to be accessible to the disabled, provide electrically powered operators complying with the ADA for opening force and time to close standards.

C. The closing action shall be controlled by modern type cast iron door closer cylinder filled with a flat viscosity fluid, stable from +120F to -30F that would require no seasonal adjustments. The closer shall have field adjustable spring power; have two independent closing speed adjustment valves, and hydraulic back-check.

D. Full closing force shall be provided when the power or assist cycle ends.

E. All power operator systems shall include the following features and functions:

1. Provisions for separate conduits to carry high and low voltage wiring in compliance with the National Electrical Code, section 725-31.

2. The operator will be designed with an electronically controlled mechanical clutching mechanism to prevent damage to the operator if the system is actuated while the door is latched or if the door is forced closed during the opening cycle.
3. All covers, mounting plates and arm systems shall be powder coated and successfully pass a minimum of 100 hours testing as outlined in ANSI/BHMA Standard A156.18.
4. UL listed for use on labeled doors.
5. All operators shall be non-handed with spring power over a range of at least four sizes; either 1 through 4 or 2 through 5.
6. The power operator shall incorporate microprocessor controlled digital controls including: factory default memory settings, on-board diagnostics, non-volatile memory, and integrated delay and relay for controlling door release devices.
7. Provisions in the control box or module shall provide control {inputs and outputs) for; electric strike delay, auxiliary contacts, sequential operation, fire alarms systems, actuators, swing side sensors, and stop side sensors.
8. Wall mounted actuators shall consist of a 4-1/2 inch diameter stainless steel touch plate with a blue filled handicapped symbol. Switches shall be weather resistant and mount on a single gang electrical box furnished by Division 16.

F. All electrically powered operators shall include the following features or functions:
1. When an obstruction or resistance to the opening swing is encountered, the operator will pause at that point, then attempt to continue opening the door. If the obstruction or resistance remains, the operator will again pause the door.
2. Easily accessible main power and maintain hold open switches will be provided on the operator.
3. An electronically controlled clutch to provide adjustable opening force.
4. A microprocessor to control all motor and clutch functions.
5. An on-board power supply capable of delivering both 12V and 24V outputs up to a maximum of 1.0 ampere combined load.
6. All input and output power wiring shall be protected by slow blow fuses. These fuses shall be easily replaceable without special tools or component replacement.
7. If electrical failure occurs, the unit shall operate as a standard door closer.

G. Power Operators shall be warranted by the manufacture to be free from defects in material and workmanship for a period of two years.

2.12 KICK PLATES AND MOP PLATES

A. Furnish protective plates as specified in hardware groups.

B. Where specified, provide 10" kick plates, 34" armor plates, and 4" mop plates. Unless otherwise specified, metal protective plates shall be .050" thick; plastic plates shall be 1/8" thick.

C. Protective plates shall be 2" less door width, or 1" less door width at pairs. All protective plates shall be beveled 4 sides and counter sunk. Protection plates over 16" shall not be provided for labeled doors unless specifically approved by door manufacturers listing.

D. Where specified, provide surface mounted door edges. Edges shall butt to protective plates. Provide edges with cutouts as required adjacent hardware.

E. Adjust dimensions of protection plates to accommodate stile and rail dimensions, lite and louver cutouts, and adjacent hardware. Where required by adjacent hardware, protection plates shall be factory drilled for cylinders or other mortised hardware.

2.13 OVERHEAD STOPS

A. Acceptable manufacturers and respective catalog numbers:

	Glynn-Johnson	Rixson	Sargent
1 Heavy Duty Surface Mount	GJ900 Series	9 Series	590
2 Heavy Duty Concealed Mount	GJ100 Series	1 Series	690

B. Overhead stops (including slide block and end caps) shall be fabricated from metal.

C. Unless otherwise specified, furnish GJ900 series overhead stop for hollow metal or 1-3/4” solid core doors equipped with regular arm surface type closers that swing more than 140 degrees before striking a wall,

for hollow metal or 1-3/4" solid core doors that open against equipment, casework, sidelights, or other objects that would make wall bumpers inappropriate, and as specified in hardware groups.

D. Furnish sex bolt attachments for wood and mineral core doors unless doors are supplied with proper reinforcing blocks.

E. Provide special stop only ("SE" suffix) overhead stops when used in conjunction with electronic hold open closers.

F. Do not provide holder function for labeled doors.

2.14 WALL STOPS AND HOLDERS

A. Acceptable manufacturers and respective catalog numbers:

	Ives	Hager	Burns
1 Wrought Convex Wall Bumper	WS406CVX	232W	570
2 Wrought Concave Wall Bumper	WS406CCV	236W	575

B. Furnish a stop or holder for all doors. Furnish floor stops or hinge pin stops only where specifically specified.

C. Where wall stops are not applicable, furnish overhead stops.

D. Do not provide holder function for labeled doors.

2.15 WEATHERSTRIP, GASKETING

A. Acceptable manufacturers and respective catalog numbers:

	Zero	Pemko	NGP	Reese
1. Weatherstrip	429	2891_PK	700NA	755
2. Adhesive Gasket	188	S88	5050	797
3. Mullion Seal/Silencer	8780	5110	5100N	
4. Meeting Edge Seals	8193	18041	9605	959
5. Sweeps	8192	18061_NB	B606	964
6. Sweep w/ drip	8198	345_N	C627	354
7. Drip Cap	142	346	16	R201

B. Where specified in the hardware groups, furnish the above products unless otherwise detailed in groups.

C. Provide weatherstripping all exterior doors and where specified.

D. Provide intumescent and other required edge sealing systems as required by individual fire door listings to comply with positive pressure standards UL 10C.

E. Provide Zero 188 smoke gaskets at all fire rated doors and smoke and draft control assemblies.

F. Provide gasketing for all meeting edges on pairs of fire doors. Gasketing shall be compatible with astragal design provided by door supplier as required for specific fire door listings.

2.16 ELECTRIC STRIKES

A. Acceptable manufacturers and respective catalog numbers:

	Von Duprin	HES
1. Type 1	6000 Series	4500 / 9500 / 9600 Series

B. Provide electric strikes designed for use with the type of locks shown at each opening where specified.

C. Electric strikes shall be UL listed as Burglary-Resistant Electric Door Strikes and where required shall be UL listed as Electric Strike for Fire Doors.

D. Provide transformers and rectifiers for each strike as required. Verify voltage with electrical contractor.

2.17 DOOR POSITION SWITCHES

A. Acceptable manufacturers and respective catalog numbers:

	Schlage Electronics	Sentrol
1. Concealed (wood & hollow metal doors)	679 Series	1076W
2. Concealed (aluminum doors)	679 Series	1076W

2.18 THRESHOLDS

A. Acceptable manufacturers and respective catalog numbers:

	Zero	Pemko	NGP	Reese
1 Saddle Thresholds	8655	171	425	S205

B. Hardware supplier shall verify all finish floor conditions and coordinate proper threshold as required to insure a smooth transition between threshold and interior floor finish.

C. Threshold Types:

1. Unless otherwise specified, provide saddle threshold similar to Zero 8655 for all exterior openings with an interior floor finish less than or equal to 1/4" in height.
2. Unless otherwise specified, provide half saddle threshold similar to Zero 1674 for all exterior openings with an interior floor finish greater than 1/4" in height. Threshold height shall match thickness of interior floor finish.

2.19 POWER SUPPLIES

A. Provide quantities and types as specified in hardware sets. Shared power supplies will not be accepted without prior approval from the owner.

B. All power supplies shall have the following features:

1. 12/24 VDC Output, field selectable.
2. Class 2 Rated power limited output.
3. Universal 120-240 VAC input.
4. Low voltage DC, regulated and filtered.
5. Polarized connector for distribution boards.
6. Fused primary input.
7. AC input and DC output monitoring circuit w/LED indicators.
8. Cover mounted AC Input indication.
9. Tested and certified to meet UL294.
10. NEMA 1 enclosure.
11. Hinged cover w/lock down screws.
12. High voltage protective cover.

C. All power supplies shall incorporate fused distribution boards.

D. All electro-mechanical systems requiring fail safe circuits shall be capable of interfacing with the fire alarm system to cut power to appropriate system components. Unless already provided in another system component, all power supplies utilized in fail safe circuits shall include an integral relay which when connected to the N/C fire alarm contact will cut power to all openings connected to the individual power supply. Power supply, unless otherwise specified, will automatically reset itself when fire alarm relay returns to normal state following a fire alarm.

2.20 FINISHES AND BASE MATERIALS

A. Unless otherwise indicated in the hardware groups or herein, hardware finishes shall be applied over base metals as specified in the following finish schedule:

HARDWARE ITEM	BHMA FINISH AND BASE MATERIAL
1. Butt Hinges: Exterior, or Non-Ferrous	630 (US32D - Satin Stainless Steel)
2. Butt Hinges: Interior	652 (US26D - Satin Chromium)
3. Continuous Hinges	630 (US32D - Satin Stainless Steel)
4. Flush Bolts	626 (US26D - Satin Chromium)
5. Exit Devices	626 (US26D - Satin Chromium)
6. Locks and Latches	626 (US26D - Satin Chromium)
7. Pulls and Push Plates/Bars	630 (US32D - Satin Stainless Steel)
8. Coordinators	600 (Prime painted or mill alum.)
9. Closers	689 (Powder Coat Aluminum)
10 Protective Plates	630 (US32D - Satin Stainless Steel)
11 Overhead Stops	630 (US32D - Satin Stainless Steel)
12 Wall Stops and Holders	630 (US32D - Satin Stainless Steel)
13 Thresholds	628 (Mill Aluminum)
14 Weather-strip, Sweeps Drip Caps	Aluminum Anodized
15 Miscellaneous	626 (US26D - Satin Chromium)

2.21 KEYING

A. Acceptable manufacturers and respective catalog numbers:

1 Best No Substitution

B. Provide al locks and cylinders in keyways as required to accommodate owners existing Best master key system.

C. All locks under this section shall be keyed as directed by the owner to an existing Best master key system.

D. Keying shall be by lock manufacturer where permanent records shall be kept.

E. Provide temporary brass construction cores for all exterior lock cylinders. Provide 10% additional temporary cores and or cylinders as required to provide secure storage locations during construction.

F. Furnish a total of 2 keys per cylinder. Actual cut keys to be determined by owner.

G. Permanent cylinder cores shall be installed by the owner, or owner's representative. Temporary cylinders and cores shall be returned to the distributor once permanent cores have been installed.

H. Permanent master keys, control keys, and change keys shall be delivered by registered mail to the owner. Construction keys shall be delivered to the contractor.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Prior to installation of hardware, installer shall examine door frame installation to insure frames have been set square and plumb. Installer shall examine doors, door frames, and adjacent wall, floor, and ceiling for conditions, which would adversely affect proper operation and function of door assemblies. Do not proceed with hardware installation until such deficiencies have been corrected.

3.2 INSTALLATION

A. Before hardware installation, general contractor/construction manager shall coordinate a hardware installation seminar with a 1 week notice to all parties involved. The seminar is to be conducted on the installation of hardware, specifically of locksets, closers, exit devices, continuous hinges and overhead stops. Manufacturer's representative of the above products to present seminar. Seminar to be held at the job site and attended by installers of hardware (including low voltage hardware) for aluminum, hollow metal and wood doors. Training to include use of installation manuals, hardware schedule, templates and physical products samples.

B. Install all hardware in accordance with the approved hardware schedule and manufacturer's instructions for installation and adjustment.

C. Set units level, plumb and true to the line and location. Adjust and reinforce the attachment 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 accord with industry standards.

E. Shim doors as required to maintain proper operating clearance between door and frame.

F. Unless otherwise specified, locate all hardware in accordance with the recommended locations for builders hardware for standard doors and frames as published by the Door and Hardware Institute.

G. Use only fasteners supplied by or approved by the manufacturer for each respective item of hardware.

H. Mortise and cut to close tolerance and conceal evidence of cutting in the finished work.

I. Conceal push and pull bar fasteners where possible. Do not install through bolts through push plates.

J. Install hardware on UL labeled openings in accordance with manufacturer's requirements to maintain the label.

K. Install hardware in accordance with supplemental "S" label instructions on all fire rated openings.

L. Install wall stops to contact lever handles or pulls. Do not mount wall stops on casework, or equipment.

M. Where necessary, adjust doors and hardware as required to eliminate binding between strike and latchbolt. Doors should not rattle.

N. Overhead stops used in conjunction with electrified hold open closers shall be templated and installed to coincide with engagement of closer hold open position.

O. Install door closers on corridor side of lobby doors, room side of corridor doors, and stair side of stairways.

P. Adjust spring power of door closers to the minimum force required to insure exterior and fire rated doors will consistently close and latch doors under existing conditions. Adjust all other door closers to insure opening force does not to exceed 5 lbs.

Q. Adjust "sweep", "latch", & "back check" valves on all door closers to properly control door throughout the opening and closing cycle. Adjust total closing speed as required to comply with all applicable state and local building codes.

R. Install "hardware compatible" (bar stock) type weatherstripping continuously for an uninterrupted seal. Adjust templating for parallel arm door closers, exit devices, etc., as required to accommodate weatherstripping.

S. Unless otherwise specified or detailed, install thresholds with the bevel in vertical alignment with the outside door face. Notch and closely fit thresholds to frame profile. Set thresholds in full bed of sealant.

T. Compress sweep during installation as recommended by sweep manufacturer to facilitate a water resistant seal.

U. Deliver to the owner 1 complete set of installation and adjustment instructions, and tools as furnished with the hardware.

V. All frames to be provided with UL rated mortar boxes at power transfer/monitor hinges, door position switches and electric strikes. Conduit shall be stubbed from the boxes to frame head.

3.3 FIELD QUALITY CONTROL

A. After installation has been completed, the hardware supplier and manufacturers representative for locksets, door closers, exit devices, and overhead stops shall check the project and verify compliance with installation instructions, adjustment of all hardware items, and proper application according to the approved hardware schedule. Hardware supplier shall submit a list of all hardware that has not been installed correctly.

B. After installation has been completed, the hardware supplier and manufacturers representative shall meet with the owner to explain the functions, uses, adjustment, and maintenance of each item of hardware. Hardware supplier shall provide the owner with a copy of all wiring diagrams. Wiring diagrams shall be opening specific and include both a riser diagram and point to point diagram showing all wiring terminations.

3.4 ADJUSTMENT AND CLEANING

A. At final completion, and when H.V.A.C. equipment is in operation, installer shall make final adjustments to and verify proper operation of all door closers and other items of hardware. . Lubricate moving parts with type lubrication recommended by the manufacturer.

B. All hardware shall be left clean and in good operation. Hardware found to be disfigured, defective, or inoperative shall be repaired or replaced.

3.5 HARDWARE SCHEDULE

A. The following schedule of hardware groups are intended to describe opening function. The hardware supplier is cautioned to refer to the preamble of this specification for a complete description of all materials and services to be furnished under this section.

S. G. REINERTSEN ELEMENTARY

HW SET #: 01

QTY		DESCRIPTION	CATALOG NUMBER	MFR
	EA		EXISTING HARDWARE TO BE REUSED.	EXI

HW SET #: 02

QTY		DESCRIPTION	CATALOG NUMBER	MFR
	EA	HINGE	AS REQUIRED	IVE
1	EA	ENTRY	9K37AB	BES
1	EA	WALL STOP	WS406	IVE

FUNCTION: (F04) ENTRY LOCK
LATCHBOLT RETRACTED BY LEVER FROM EITHER SIDE UNLESS OUTSIDE IS MADE INOPERATIVE BY KEY OUTSIDE OR BY TURNING INSIDE THUMBTURN. WHEN OUTSIDE IS LOCKED, LATCHBOLT IS RETRACTED BY KEY OUTSIDE OR BY LEVER INSIDE. OUTSIDE LEVER REMAINS LOCKED UNTIL THUMBTURN IS RETURNED TO VERTICAL OR UNLOCKED BY KEY. AUXILIARY LATCH DEADLOCKS LATCHBOLT WHEN DOOR IS CLOSED.

HW SET #: 03

QTY		DESCRIPTION	CATALOG NUMBER	MFR
	EA	HINGE	AS REQUIRED	IVE
1	EA	INTRUDER	9K37AB	BES
1	EA	OH STOP	90S	GLY

FUNCTION: (F04) ENTRY LOCK
LATCHBOLT RETRACTED BY LEVER FROM EITHER SIDE UNLESS OUTSIDE IS MADE INOPERATIVE BY KEY OUTSIDE OR BY TURNING INSIDE THUMBTURN. WHEN OUTSIDE IS LOCKED, LATCHBOLT IS RETRACTED BY KEY OUTSIDE OR BY LEVER INSIDE. OUTSIDE LEVER REMAINS LOCKED UNTIL THUMBTURN IS RETURNED TO VERTICAL OR UNLOCKED BY KEY. AUXILIARY LATCH DEADLOCKS LATCHBOLT WHEN DOOR IS CLOSED.

HW SET #: 04

QTY		DESCRIPTION	CATALOG NUMBER	MFR
	EA	HINGE	AS REQUIRED	IVE
1	EA	POWER TRANSFER	EPT2	VON
1	EA	ELECTRIFIED LOCK	9K3KW-DEU	BES
1	EA	CLOSER	4011 / 4111 EDA	LCN
1	EA	KICKPLATE	8400 10" X 1" LDW B4E	IVE
1	EA	WALL STOP	WS406	GLY
1	EA	POWER SUPPLY	PS902-4R	VON
1	EA	CARD READER	BY OWNER	
1	EA	DOOR CONTACT	679	SCE
1	EA	ELEVATION DRAWING		
1	EA	WIRE DIAGRAM	POINT TO POINT	

FUNCTION: (F07) ELECTRIFIED STOREROOM LOCK
LATCHBOLT RETRACTED BY KEY OUTSIDE OR BY LEVER INSIDE. OUTSIDE LEVER ALWAYS INOPERATIVE. AUXILIARY LATCH DEADLOCKS LATCHBOLT WHEN DOOR IS CLOSED. VALID CREDENTIAL WILL MOMENTARILY UNLOCK THE DOOR.

HW SET #: 05

QTY		DESCRIPTION	CATALOG NUMBER	MFR
	EA	HINGE	REUSE EXISTING	IVE
1	EA	CLASSROOM LOCK	9K37R	BES
1	EA	WALL STOP	REUSE EXISTING @ A102	IVE
1	EA	CLOSER	4011 / 4111 EDA	LCN
1	EA	KICKPLATE	8400 10" X 1" LDW B4E	IVE
1	EA	OH STOP	90S @ A108	GLY
1	EA	ELECTRIC STRIKE	4500C-LBM	HES
1	EA	POWER SUPPLY	PS902-4R	VD
1	EA	CARD READER	BY OWNER	
1	EA	ELEVATION DRAWING		
1	EA	WIRE DIAGRAM	POINT TO POINT	

FUNCTION: EXISTING LOCK IS AB OFFICE. TURN EXISTING LOCK OVER TO OWNER. WHEN DOOR IS CLOSED, VALID CREDENTIAL WILL MOMENTARILY UNLOCK THE DOOR.

HW SET #: 06

QTY		DESCRIPTION	CATALOG NUMBER	MFR
	EA	HINGE	AS REQUIRED	IVE
2	EA	POWER TRANSFER	EPT2	VON
1	EA	KEYED REMOVABLE MULLION	KR4954 X 154	VON
2	EA	PANIC HARDWARE	QELA-98-DT	VON
1	EA	6 PIN CYLINDER	AS REQUIRED	BES
1	EA	SURFACE CLOSER	4111 EDA @ LHR	LCN
1	EA	SURFACE CLOSER	4111 SCUSH @ RHR	LCN
2	EA	KICK PLATE	8400 10" X 1" LDW B4E	IVE
	EA	N/C F/A CONTACT	BY F/A CONTRACTOR	
1	EA	FIRE/LIFE WALL MAG	BY DIVISION 26 @ LHR	LCN
1	EA	FIRE/LIFE HOLDER	SEH TRACK @ RHR	LCN
2	EA	DOOR CONTACT	679	SCE
1	EA	CARD READER	BY OWNER	
1	EA	POWER SUPPLY	PS902 900-2RS	VON
1	EA	ELEVATION DRAWING		
1	EA	WIRE DIAGRAM	POINT TO POINT	

FUNCTION: LATCHBOLT RETRACTED BY EXIT DEVICE PUSH PAD. VALID CREDENTIAL WILL MOMENTARILY UNLOCK THE DOOR.

HW SET #: 07

QTY		DESCRIPTION	CATALOG NUMBER	MFR
	EA	HINGE	AS REQUIRED	IVE
2	EA	POWER TRANSFER	EPT2	VON
2	EA	FIRE EXIT HARDWARE	QELA-9950-WDC-L-F-LBL	VON
2	EA	6 PIN CYLINDER	AS REQUIRED	BES
2	EA	SURFACE CLOSER	4111 EDA	LCN
2	EA	KICK PLATE	8400 10" X 1" LDW B4E	IVE
2	EA	FIRE/LIFE WALL MAG	BY DIVISION 26	LCN
	EA	N/C F/A CONTACT	BY F/A CONTRACTOR	
1	SET	SEALS	188S	ZER
1	SET	MEETING STILE SEAL	8193 X 8193	ZER
2	EA	DOOR CONTACT	679	SCE
1	EA	CARD READER	BY OWNER	
1	EA	POWER SUPPLY	PS902 900-2RS	VON
1	EA	ELEVATION DRAWING		
1	EA	WIRE DIAGRAM	POINT TO POINT	

FUNCTION: LATCHBOLT RETRACTED BY EXIT DEVICE PUSH PAD OR BY KEY OUTSIDE. DOOR LOCKS WHEN KEY IS REMOVED AND DOOR IS CLOSED. VALID CREDENTIAL WILL MOMENTARILY UNLOCK THE DOOR.

HW SET #: 08

QTY		DESCRIPTION	CATALOG NUMBER	MFR
	EA	HINGE	AS REQUIRED	IVE
1	EA	POWER TRANSFER	EPT2	VON
1	EA	ELEC EXIT HARDWARE	QELA-98NL	VON
1	EA	6 PIN CYLINDER	AS REQUIRED	BES
1	EA	SURFACE CLOSER	4111 EDA	LCN
1	EA	KICK PLATE	8400 10" X 1" LDW B4E	IVE
1	EA	FIRE/LIFE WALL MAG	BY DIVISION 26	LCN
	EA	N/C F/A CONTACT	BY F/A CONTRACTOR	
1	SET	SEALS	188S	ZER
1	SET	MEETING STILE SEAL	8193 X 8193	ZER
1	EA	DOOR CONTACT	679	SCE
1	EA	CARD READER	BY OWNER	
1	EA	POWER SUPPLY	PS902 900-2RS	VON
1	EA	ELEVATION DRAWING		
1	EA	WIRE DIAGRAM	POINT TO POINT	

FUNCTION: LATCHBOLT RETRACTED BY EXIT DEVICE PUSH PAD OR BY KEY OUTSIDE. DOOR LOCKS WHEN KEY IS REMOVED AND DOOR IS CLOSED. VALID CREDENTIAL WILL MOMENTARILY UNLOCK THE DOOR.

ROBERT ASP ELEMENTARY & ELLEN HOPKINS ELEMENTARY

HW SET #: 09

QTY		DESCRIPTION	CATALOG NUMBER	MFR
	EA		EXISTING HARDWARE TO BE REUSED.	EXI

HW SET #: 10

QTY		DESCRIPTION	CATALOG NUMBER	MFR
	EA	HINGE	AS REQUIRED	IVE
1	EA	ENTRY	9K37AB	BES
1	EA	WALL STOP	WS406	IVE

FUNCTION: (F04) ENTRY LOCK
LATCHBOLT RETRACTED BY LEVER FROM EITHER SIDE UNLESS OUTSIDE IS MADE INOPERATIVE BY KEY OUTSIDE OR BY TURNING INSIDE THUMBTURN. WHEN OUTSIDE IS LOCKED, LATCHBOLT IS RETRACTED BY KEY OUTSIDE OR BY LEVER INSIDE. OUTSIDE LEVER REMAINS LOCKED UNTIL THUMBTURN IS RETURNED TO VERTICAL OR UNLOCKED BY KEY. AUXILIARY LATCH DEADLOCKS LATCHBOLT WHEN DOOR IS CLOSED.

HW SET #: 11

QTY		DESCRIPTION	CATALOG NUMBER	MFR
	EA	HINGE	AS REQUIRED	IVE
1	EA	POWER TRANSFER	EPT2	VON
1	EA	ELECTRIFIED LOCK	9K3KW-DEU	BES
1	EA	CLOSER	4011 / 4111 EDA	LCN
1	EA	KICKPLATE	8400 10" X 1" LDW B4E	IVE
1	EA	WALL STOP	WS406	IVE
1	EA	POWER SUPPLY	PS902-4R	
1	EA	CARD READER	BY OWNER	
1	EA	DOOR CONTACT	679	SCE
1	EA	ELEVATION DRAWING		
1	EA	WIRE DIAGRAM	POINT TO POINT	

FUNCTION: (F07) ELECTRIFIED STOREROOM LOCK
LATCHBOLT RETRACTED BY KEY OUTSIDE OR BY LEVER INSIDE. OUTSIDE LEVER ALWAYS INOPERATIVE. AUXILIARY LATCH DEADLOCKS LATCHBOLT WHEN DOOR IS CLOSED. VALID CREDENTIAL WILL MOMENTARILY UNLOCK THE DOOR.

HW SET #: 12

QTY		DESCRIPTION	CATALOG NUMBER	MFR
	EA	HINGE	REUSE EXISTING	
1	EA	CLASSROOM LOCK	9K37R	BES
1	EA	CLOSER	4011 / 4111 EDA	LCN
1	EA	KICKPLATE	8400 10" X 1" LDW B4E	IVE
1	EA	WALL STOP	REUSE EXISTING	
1	EA	ELECTRIC STRIKE	4500C-LBM	HES
1	EA	POWER SUPPLY	PS902-4R	VD
1	EA	CARD READER	BY OWNER	
1	EA	ELEVATION DRAWING		
1	EA	WIRE DIAGRAM	POINT TO POINT	

FUNCTION: EXISTING LOCK IS AB OFFICE. TURN EXISTING LOCK OVER TO OWNER. WHEN DOOR IS CLOSED, VALID CREDENTIAL WILL MOMENTARILY UNLOCK THE DOOR.

HW SET #: 13

QTY		DESCRIPTION	CATALOG NUMBER	MFR
	EA	HINGE	AS REQUIRED	IVE
2	EA	POWER TRANSFER	EPT2	VON
2	EA	EXIT HARDWARE	QELA-9850-WDC-L-DT-LBL	VON
2	EA	SURFACE CLOSER	4111 SCUSH	LCN
2	EA	KICK PLATE	8400 10" X 1" LDW B4E	IVE
2	EA	FIRE/LIFE HOLDER	SEH TRACK	LCN
	EA	N/C F/A CONTACT	BY F/A CONTRACTOR	
1	SET	SEALS	188S	ZER
1	SET	MEETING STILE SEAL	8193 X 8193	ZER
2	EA	DOOR CONTACT	679	SCE
1	EA	CARD READER	BY OWNER	
1	EA	POWER SUPPLY	PS902 900-2RS	VON
1	EA	ELEVATION DRAWING		
1	EA	WIRE DIAGRAM	POINT TO POINT	

FUNCTION: LATCHBOLT RETRACTED BY EXIT DEVICE PUSH PAD. VALID CREDENTIAL WILL MOMENTARILY UNLOCK THE DOOR.

HW SET #: 14

QTY		DESCRIPTION	CATALOG NUMBER	MFR
	EA	HINGE	AS REQUIRED	IVE
2	EA	POWER TRANSFER	EPT2	VON
1	EA	EXIT HARDWARE	QELA-9850-WDC-L-LBL	VON
1	EA	EXIT HARDWARE	QELA-9850-WDC-L-DT-LBL	VON
1	EA	6 PIN CYLINDER	AS REQUIRED	BES
1	EA	SURFACE CLOSER	4111 EDA-RHR	LCN
1	EA	SURFACE CLOSER	4111 SCUSH-LHR	LCN
2	EA	KICK PLATE	8400 10" X 1" LDW B4E	IVE
1	EA	FIRE/LIFE HOLDER	SEH TRACK @ LHR	LCN
1	EA	FIRE/LIFE WALL MAG	BY DIVISION 26 @ RHR	LCN
	EA	N/C F/A CONTACT	BY F/A CONTRACTOR	
1	SET	SEALS	188S	ZER
1	SET	MEETING STILE SEAL	8193 X 8193	ZER
2	EA	DOOR CONTACT	679	SCE
1	EA	CARD READER	BY OWNER	
1	EA	POWER SUPPLY	PS902 900-2RS	VON
1	EA	ELEVATION DRAWING		
1	EA	WIRE DIAGRAM	POINT TO POINT	

FUNCTION: LATCHBOLT RETRACTED BY EXIT DEVICE PUSH PAD. DOOR LOCKS WHEN KEY IS REMOVED AND DOOR IS CLOSED. VALID CREDENTIAL WILL MOMENTARILY UNLOCK THE DOOR.

HW SET #: 15

QTY		DESCRIPTION	CATALOG NUMBER	MFR
	EA	HINGE	AS REQUIRED	IVE
2	EA	POWER TRANSFER	EPT2	VON
1	EA	ELECFIRE EXIT HARDWARE	QELA-9850-WDC-L-F-LBL	VON
1	EA	ELEC FIRE EXIT HARDWARE	QELA-9850-WDC-L-DT-F-LBL	VON
1	EA	6 PIN CYLINDER	AS REQUIRED	BES
2	EA	SURFACE CLOSER	4111 EDA	LCN
2	EA	KICK PLATE	8400 10" X 1" LDW B4E	IVE
2	EA	FIRE/LIFE WALL MAG	BY DIVISION 26	LCN
	EA	N/C F/A CONTACT	BY F/A CONTRACTOR	
1	SET	SEALS	188S	ZER
1	SET	MEETING STILE SEAL	8193 X 8193	ZER
2	EA	DOOR CONTACT	679	SCE
1	EA	CARD READER	BY OWNER	
1	EA	POWER SUPPLY	PS902 900-2RS	VON
1	EA	ELEVATION DRAWING		
1	EA	WIRE DIAGRAM	POINT TO POINT	

FUNCTION: LATCHBOLT RETRACTED BY EXIT DEVICE PUSH PAD OR BY KEY OUTSIDE. DOOR LOCKS WHEN KEY IS REMOVED AND DOOR IS CLOSED. VALID CREDENTIAL WILL MOMENTARILY UNLOCK THE DOOR.

HW SET #: 16

QTY		DESCRIPTION	CATALOG NUMBER	MFR
	EA	HINGE	AS REQUIRED	IVE
2	EA	POWER TRANSFER	EPT2	VON
1	EA	ELEC FIRE EXIT HARDWARE	QELA-9850-WDC-L-F-LBL	VON
1	EA	ELEC FIRE EXIT HARDWARE	QELA-9850-WDC-L-DT-F-LBL	VON
1	EA	6 PIN CYLINDER	AS REQUIRED	BES
	EA	SURFACE CLOSER	REUSE EXISTING	
	EA	KICK PLATE	REUSE EXISTING	
	EA	OH STOP	REUSE EXISTING	
	EA	FIRE/LIFE HO TRACK	REUSE EXISTING	
	SET	SEALS	REUSE EXISTING	
	SET	MEETING STILE SEAL	REUSE EXISTING	
2	EA	DOOR CONTACT	679	SCE
1	EA	CARD READER	BY OWNER	
1	EA	POWER SUPPLY	PS902 900-2RS	VON
1	EA	ELEVATION DRAWING		
1	EA	WIRE DIAGRAM	POINT TO POINT	

NOTE: FIELD VERIFY EXISTING FRAME FOR PROPER FIT OF HARDWARE. SECTION 087100 WILL BE RESPONSIBLE FOR MODIFYING THE FRAME FOR SPECIFIED HARDWARE.

HW SET #: 17

QTY		DESCRIPTION	CATALOG NUMBER	MFR
2	EA	CONT. HINGE	700	IVE
2	EA	DOOR PULL, 1" ROUND	8103 10"	IVE
2	EA	PUSH BAR	9100	IVE
2	EA	OH STOP	100S	GLY
1	EA	SURF. AUTO OPERATOR	REUSE EXISTING @ RHR @ 002B	
2	EA	SURFACE CLOSER	4111 SCUSH – REMAINING	LCN
2	EA	ASTRAGAL	BY DR/FR SUPPLIER	
1	EA	WEATHERSTRIP	BY DR/FR SUPPLIER	
2	EA	DOOR SWEEP W/DRIP	8198	ZER
1	EA	THRESHOLD	8655	ZER
2	EA	ACTUATOR, WALL MOUNT	REUSE EXISTING @ RHR @ 002B	

NOTE: ALL HARDWARE PROVIDED BY SECTION 084113.

HW SET #: 18

QTY		DESCRIPTION	CATALOG NUMBER	MFR
2	EA	CONTINUOUS HINGE	700 X (EPT)	IVE
2	EA	POWER TRANSFER	EPT2	VON
1	EA	KEYED REMOVABLE MULLION	KR4954 X 154	VON
2	EA	ELEC PANIC HARDWARE	QELA-98-990DT	VON
1	EA	6 PIN CYLINDER	AS REQUIRED	BES
2	EA	OH STOP	100S	GLY
2	EA	SURFACE CLOSER	4111 SCUSH	LCN
1	EA	RAIN DRIP	142	ZER
2	EA	ASTRAGAL	BY DR/FR SUPPLIER	
1	EA	WEATHERSTRIP	BY DR/FR SUPPLIER	
1	EA	MULLION SEAL	8780	ZER
2	EA	DOOR SWEEP W/DRIP	8198	ZER
1	EA	THRESHOLD	8655	ZER
1	EA	POWER SUPPLY	PS902 900-2RS	VON
2	EA	DOOR CONTACT	679	SCE
1	EA	ELEVATION DRAWING		
1	EA	WIRE DIAGRAM	POINT TO POINT	

NOTE: ALL HARDWARE PROVIDED BY SECTION 084113. EXISTING VON DUPRIN 990DT TRIMS FROM 001A, 001B AND 001C MAY BE REUSED.

HW SET #: 19

QTY		DESCRIPTION	CATALOG NUMBER	MFR
2	EA	CONTINUOUS HINGE	700 X (EPT)	IVE
2	EA	POWER TRANSFER	EPT2	VON
1	EA	KEYED REMOVABLE MULLION	KR4954 X 154	VON
1	EA	PANIC HARDWARE	QELA-98-990DT	VON
1	EA	ELEC PANIC HARDWARE	QELA-98-990NL	VON
2	EA	6 PIN CYLINDER	AS REQUIRED	BES
2	EA	OH STOP	100S	GLY
1	EA	SURFACE CLOSER	4111 SCUSH @ LHR	LCN
1	EA	SURF. AUTO OPERATOR	4642 @ RHR	LCN
2	EA	ACTUATOR, WALL MOUNT	8310-853	LCN
1	EA	RAIN DRIP	142	ZER
2	EA	ASTRAGAL	BY DR/FR SUPPLIER	
1	EA	WEATHERSTRIP	BY DR/FR SUPPLIER	
1	EA	MULLION SEAL	8780	ZER
2	EA	DOOR SWEEP W/DRIP	8198	ZER
1	EA	THRESHOLD	8655	ZER
1	EA	CARD READER	BY OWNER	
1	EA	POWER SUPPLY	PS902 900-2RS	VON
2	EA	DOOR CONTACT	679	SCE
1	EA	JUNCTION BOX	JB7 R2	VON
1	EA	ELEVATION DRAWING		
1	EA	WIRE DIAGRAM	POINT TO POINT	

NOTE: ALL HARDWARE PROVIDED BY SECTION 084113. EXISTING VON DUPRIN 990DT TRIMS FROM 001A, 001B AND 001C MAY BE REUSED.

HW SET #: 20

QTY		DESCRIPTION	CATALOG NUMBER	MFR
	EA	CONTINUOUS HINGE	REUSE EXISTING (MODIFY FOR NEW EPT)	
2	EA	POWER TRANSFER	EPT2	VON
1	EA	KEYED REMOVABLE MULLION	KR4954 X 154	VON
1	EA	PANIC HARDWARE	QELA-98-990DT	VON
1	EA	ELEC PANIC HARDWARE	QELA-98-990NL	VON
2	EA	6 PIN CYLINDER	AS REQUIRED	BES
	EA	OH STOP	REUSE EXISTING	
	EA	SURFACE CLOSER	REUSE EXISTING	
2	EA	FIRE/LIFE HOLDER	SEH TRACK	LCN
	EA	N/C F/A CONTACT	BY F/A CONTRACTOR	
1	EA	POWER SUPPLY	PS902 900-2RS	VON
2	EA	DOOR CONTACT	679	SCE
1	EA	ELEVATION DRAWING		
1	EA	WIRE DIAGRAM	POINT TO POINT	

NOTE: ALL HARDWARE PROVIDED BY SECTION 084113. FIELD VERIFY EXISTING DOORS AND FRAMES FOR PROPER FIT OF HARDWARE. EXISTING VON DUPRIN 990DT TRIMS MAY BE REUSED. SECTION 084113 WILL BE RESPONSIBLE FOR MODIFYING THE DOORS, FRAMES, AND CONTINOUS HINGES FOR SPECIFIED HARDWARE.

HW SET #: 21

QTY		DESCRIPTION	CATALOG NUMBER	MFR
	EA	CONTINUOUS HINGE	REUSE EXISTING (MODIFY FOR NEW EPT)	
1	EA	POWER TRANSFER	EPT2	VON
1	EA	ELEC EXIT HARDWARE	QELA-98NL	VON
1	EA	6 PIN CYLINDER	AS REQUIRED	BES
	EA	DOOR OPERATOR	REUSE EXISTING	
1	EA	FIRE/LIFE WALL MAG	BY DIVISION 26	
	EA	N/C F/A CONTACT	BY F/A CONTRACTOR	
1	SET	SEALS	REUSE EXISTING	
1	EA	DOOR CONTACT	679	SCE
1	EA	CARD READER	BY OWNER	
1	EA	POWER SUPPLY	PS902 900-2RS	VON
1	EA	JUNCTION BOX	JB7 R2	VON
1	EA	ELEVATION DRAWING		
1	EA	WIRE DIAGRAM	POINT TO POINT	

NOTE: ALL HARDWARE PROVIDED BY SECTION 084113. FIELD VERIFY EXISTING DOORS AND FRAMES FOR PROPER FIT OF HARDWARE. SECTION 084113 WILL BE RESPONSIBLE FOR MODIFYING THE DOORS, FRAMES, AND CONTINOUS HINGES FOR SPECIFIED HARDWARE.

HW SET #: 22

QTY		DESCRIPTION	CATALOG NUMBER	MFR
	EA	CONTINUOUS HINGE	REUSE EXISTING (MODIFY FOR NEW EPT)	
1	EA	POWER TRANSFER	EPT2	VON
1	EA	ELEC EXIT HARDWARE	QELA-98DT	VON
	EA	DOOR CLOSER	REUSE EXISTING	
1	EA	FIRE/LIFE WALL MAG	BY DIVISION 26	
	EA	N/C F/A CONTACT	BY F/A CONTRACTOR	
1	SET	SEALS	REUSE EXISTING	
1	EA	DOOR CONTACT	679	SCE
1	EA	CARD READER	BY OWNER	
1	EA	POWER SUPPLY	POWER & RELAY TO BE PROVIDED BY POWER SUPPLY SPECIFIED FOR DOOR 001C	VON
1	EA	ELEVATION DRAWING		
1	EA	WIRE DIAGRAM	POINT TO POINT	

NOTE: ALL HARDWARE PROVIDED BY SECTION 084113. FIELD VERIFY EXISTING DOORS AND FRAMES FOR PROPER FIT OF HARDWARE. EXISTING VON DUPRIN 990DT TRIMS MAY BE REUSED. SECTION 084113 WILL BE RESPONSIBLE FOR MODIFYING THE DOORS, FRAMES, AND CONTINOUS HINGES FOR SPECIFIED HARDWARE.

END OF SECTION

1520 MOORHEAD AREA PUBLIC SCHOOLS

ASP / HOPKINS			SG REINERTSEN	
DOOR #	HW SET#		DOOR #	HW SET#
001A	20		A102	05
001B	22		A102A	04
001C	21		A103	01
002A	17		A103A	04
002B	17		A103B	01
002C	18		A104	01
002D	19		A105	01
003A	11		A106	01
003B	09		A107	02
004	11		A108	05
005	10		A109	02
006	10		A110	01
007	10		A110A	01
008	10		A110B	01
011	16		A111	03
012A	13		A139A	08
012B	14		A139B	06
012C	15		A139C	08
100	11		A139D	06
100A	12		A142	07