

TOWN OF GLASTONBURY
 GL-2018-22
 STATE GRANT PROJECT #53-191 CONTRACT 2
 EMERGENCY USE MODIFICATIONS TO TOWN FACILITIES & MAINTENANCE BUILDING
 ADDENDUM NO. 1
 August 15, 2018

Revised Bid Due Date: 08-29-18 @ 11:00 A.M.

The attention of bidders submitting proposals for the above-referenced project is called to the following Addendum to the specifications. The items set forth herein, whether of omission, addition, substitution or other change, are all to be included in and form a part of the proposed Contract Documents for the work. Bidders shall acknowledge this Addendum on the Bid Proposal Page (BP-1).

General Information:

- The prebid sign-in sheet is attached for reference. (2)
- The deadline for RFIs is Tuesday, August 24, 2018, at 2 pm.

Requests for Information (RFIs):

Q & A - No.	Question / Answer	Bid Package
Question 1:	Door Schedule A4 indicates door type 3 at openings 102 and 204. We cannot locate this door elevation. Please advise.	
Answer:	Flush HM door, same as Type 2, but fire rated.	BP 104
Question 2:	Door Schedule A4 indicates frame Type C at openings 102 and 204. We cannot locate this frame elevation. Please advise.	
Answer:	2-inch HM frame, same as Type B, but fire rated.	BP 104
Question 3:	Please verify that openings 101, 102, 204 are the only openings to receive door closers.	
Answer:	Yes, and add 201, 202, and 203.	BP 104
Question 4:	Please verify that opening 100 is the only opening to receive a threshold.	
Answer:	No, only exterior Door 101.	BP 104
Question 5:	We have adjusted hardware set HW-1, the only set provided, to accommodate paired opening 203 with the following hardware: 6 hinges, 1 storeroom lockset, 2 kick-plates, 1 set manual flush bolts and silencers. Please verify.	
Answer:	Refer to revised Section 087100 provided as part of this addendum for correct hardware.	BP 104
Question 6:	Per the hardware spec 087100-7 2.8 A. 2., and 3., and 4. We have spoken to Calvert Safe and Lock with regard to the key system mentioned. They have no record of an established key system for	

	Glastonbury in their records. Please advise. Please also advise the intent of the reference made regarding the Ansonia system.	
Answer:	Keying system is Whitford Lock in East Hartford, CT. Refer to revised Section 087100 provided as part of this addendum for correct hardware.	BP 104
Question 7:	Please advise which trade package is responsible for the following items: A. Foundation for the generator B. Generator Screen and footings C. Modifications to the railings in the area of the lift.	
Answer:	A. Foundation for the generator. B. Generator Screen and footings. C. Modifications to the railings in the area of the lift.	BP 102 BP 102 BP 104
Question 8:	Does any Miscellaneous work need to be done in the attic area?	
Answer:	Yes, per fire protection and mechanical plans.	As Applicable
Question 9:	Please provide a manufacturer for the metal gate wall on the second floor.	
Answer:	Specification has been provided as part of this addendum.	BP 104
Question 10:	Please confirm that all existing plywood on the walls is to remain as is.	
Answer:	Yes, all existing plywood on the walls will remain as-is.	BP 104
Question 11:	Please provide a framing detail for the ceiling of the entry by the stairwell. Are we correct to assume that it is the same 2 x 4 construction as the new walls?	
Answer:	Yes, 2x4 walls and ceiling joists with fire rated envelope per Drawings.	BP 104
Question 12:	Please confirm that all ceilings are to remain existing and no finish is required.	
Answer:	No, see Architect Drawings for added GWB for fire rated/enclosed stair. Patch, paint to match all mezzanine ceilings affected by lighting work.	BP 104

New Specifications:

- The following sections have been added and are attached as part of this addendum:
 - SECTION 081613, FIBERGLASS DOORS (3)
 - SECTION 102213, WIRE MESH PARTITIONS (5)

Changes to the Specifications:

- TABLE OF CONTENTS:

- Page 1, Division 1 – General Requirements, add the following:

“Section 012100 Allowances	5
Section 012200 Unit Prices	2”

- Page 2:

- Division 08 – Openings:

- Section 087100, Pages, revise “14” to read “13”
- Add the following:

“Section 081613 Fiberglass Doors	3”
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- Add the following:

“DIVISION 10 – SPECIALTIES

Section 102213 Wire Mesh Partitions	5”
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- Town of Glastonbury Front End Documents, SPECIAL CONDITIONS, Page 1, Article 03.00 INSURANCE, revise to read as follows:

“The Bidder shall, at its own expense and cost, obtain and keep in force during the entire duration of the Project or Work the following minimum insurance coverage covering the Bidder and all of its agents, employees and sub-contractors and other providers of services and shall name the **State of Connecticut, the Town of Glastonbury and its employees and agents as Additional Insured** on a primary and non-contributory basis to the Bidders Commercial General Liability and Automobile Liability policies. All policies shall contain a waiver of subrogation. **These requirements shall be clearly stated in the remarks section on the Bidder’s Certificate of Insurance.** Insurance shall be written with insurance carriers approved in the State of Connecticut and with a minimum Best’s Rating of A-VIII. In addition, all carriers are subject to approval by the Town. Minimum Limits and requirements are stated below:

- 1) Worker's Compensation Insurance:
 - Statutory Coverage
 - Employer’s Liability
 - \$500,000 each accident/\$500,000 disease-policy limit/\$500,000 disease each employee
 - A Waiver of Subrogation shall be provided in favor of the State of Connecticut and the Town of Glastonbury and its employees and agents.

- 2) Commercial General Liability:
 - Including Premises & Operations, Products and Completed Operations, Personal and Advertising Injury, Contractual Liability and Independent Contractors.
 - Limits of Liability for Bodily Injury and Property Damage
Each Occurrence \$1,000,000
Aggregate \$2,000,000 (The Aggregate Limit shall apply separately to each job.)
 - A Waiver of Subrogation shall be provided in favor of the State of Connecticut and the Town of Glastonbury and its employees and agents.

- 3) Automobile Insurance:
 - Including all owned, hired, borrowed and non-owned vehicles
 - Evidence a Combined Single Limit of Liability for Bodily Injury and Property Damage:
Per Accident \$1,000,000
 - A Waiver of Subrogation shall be provided in favor of the State of Connecticut and the Town of Glastonbury and its employees and agents.
- 4) Umbrella/Excess Liability:
 - Following Form - \$1,000,000 each occurrence and \$1,000,000 aggregate

The Bidder shall direct its Insurer to provide a Certificate of Insurance to the Town before any work is performed. The Contractor shall be responsible to notify the Town thirty (30) days in advance with written notice by certified mail of cancellation, non-renewal, suspension, voiding or reduction of coverage. The Certificate shall evidence all required coverage including the Additional Insureds on the General Liability and Auto Liability policies. The Bidder shall provide the Town copies of any such insurance policies upon request.

Builders Risk Coverage to be provided by the Town.”

- DRAWING LIST has been deleted in its entirety. A new DRAWING LIST has been added and is attached as part of this addendum. (1)
- SECTION 011000, SUMMARY, Page 2:
 - Article 1.4.A., revise to read as follows:
 - “1. Addition of systems and equipment related to the enhancement of the new Maintenance Building for Emergency Services, packaged as follows:
 - a. BP-101 – Solar includes the provision and installation of roof-mounted solar array photovoltaic panels and all associated components for a complete system including but not limited to required electrical system modifications.
 - b. BP-102 – Generator includes the provision and installation of a new Onan/Cummins natural gas-fired emergency generator complete with battery charger, block heater, controls and monitoring, outdoor sound enclosure, automatic transfer switch in NEMA 1 enclosure and all conduit and wiring required for interconnection with the existing electric service for the building. Work also includes the provision and installation of concrete pad.
 - c. BP-103 – Lift System includes the provision and installation of a new scissor lift, fixed fork pallet lift with basket, and all associated components for a complete system installation.
 - d. BP-104 – Remainder of Building Modifications includes the provision and installation of all other work described in the documents, excluding the items in BP-101, BP-102 and BP-103. Work includes but is not limited to construction of mezzanine level offices with new interior finishes, doors and hardware, enclosure of new stair with new exterior door, fire protection, mechanical and electrical systems, and other miscellaneous building elements. Work also includes the provision and installation of a fence enclosure for the new generator, associated concrete work and the following surveillance camera systems:

- 1) Two (2) AXIS #P3225-LV Mk II Network Cameras for interior locations, no substitutions. Adjust views and provide needed accessories for mounting. Provide pink Cat6 patch cables and label to network from patch panel.
- 2) Four (4) AXIS #P3225-LVE Mk II Network Cameras for exterior locations, no substitutions. Adjust views and provide needed accessories for mounting. Provide pink Cat6 patch cables and label to network from patch panel.
- 3) Six (6) #EVENIP-01 camera licenses and complete commissioning to the ExacqVision Enterprise Town Server. Vendor must provide letters of Exacq Enterprise Dealer Certification with Technician Exacq Enterprise Certification, no exceptions.

2. Off-site disposal of all removed materials.”

- o Article 1.4.B.1., revise to read as follows:

“Project will be constructed under multiple contracts as identified by Bid Packages on the Invitation to Bid.”

- SECTION 012200, UNIT PRICES, Page 2, Article 3.1.A., revise to read as follows:

“A list of Unit Prices is included in each of the Bid Proposal Package Forms.”

- SECTION 087100, DOOR HARDWARE has been deleted in its entirety. A new SECTION 087100 has been added and is attached as part of this addendum. (13)

Changes to the Drawings:

- DRAWING A4, SECOND FLOOR PLAN, SCHEDULES, & DOOR TYPES:

- o Head A and Jamb B Tags, revise “A3” to read “A4”.
- o Door Schedule:
 - Move all dots in “automatic closer” column to “delayed action closer” column and add dots to Doors 201, 202 and 203.
 - Move dot in “accessible threshold” from Door 100 to Door 101.

The addendum consists of twenty-nine (29) pages of 8½” x 11” text.
End of Addendum ‘1’

SECTION 081613 - FIBERGLASS DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes fiberglass entrance doors.
- B. Related Requirements:
 - 1. Section 087100 "Door Hardware" for door hardware.

1.3 COORDINATION

- A. Coordinate anchorage installation for frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, core descriptions, and finishes.
- B. Shop Drawings: Include the following:
 - 1. Elevations of each door type.
 - 2. Details of doors, including vertical- and horizontal-edge details and thicknesses.
 - 3. Locations of reinforcement and preparations for hardware.
 - 4. Details of each different wall opening condition.
 - 5. Details of anchorages, joints, field splices, and connections.
 - 6. Details of accessories.
- C. Samples: For units with factory-applied color finishes.
- D. Schedule: Provide a schedule prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with final Door Hardware Schedule.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver doors, materials and components palletized, packaged, or crated to provide protection during transit and Project-site storage. Do not use non-vented plastic.
 - 1. Provide additional protection to prevent damage to factory-finished units.

- B. Store vertically under cover at Project site with head up. Place on minimum 4-inch-high wood blocking. Provide minimum ¼-inch space between each stacked door to permit air circulation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design:
 - 1. Jeld-Wen Fiberglass Doors; **Design Pro**
- B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Masonite
 - 2. Plastpro, Inc.
 - 3. Therma-Tru Doors
 - 4. Substitutions: Under provisions of Section 012500 “Substitution Procedures”.
- C. Source Limitations: Obtain fiberglass work from single source from single manufacturer.

2.2 EXTERIOR DOORS

- A. Construct exterior doors to comply with the standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.
- B. Thickness: 1¾ inches.
- C. Door Style: Solid.
- D. Door Shape: Squared top.
- E. Exposed Finish: Prime.

2.3 MATERIALS

- A. Engineered wood (laminated veneer lumber), composite capped.

2.4 FABRICATION

- A. Fabricate to be rigid and free of defects, warp, or buckle. Accurately form to required sizes and profiles, with minimum radius for thickness. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.
- B. Skins are adhered to engineered wood frames with core materials and bonding agents that permanently lock skin to frame.
- C. Hardware Preparation: Factory prepare to receive templated hardware; include cutouts, reinforcement, drilling, and tapping according to the Door Hardware Schedule and templates.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Drill and tap doors to receive non-templated and surface-mounted door hardware.

3.3 INSTALLATION

- A. General: Install work plumb, rigid, properly aligned, and securely fastened in place. Comply with Drawings and manufacturer's written instructions.
- B. Doors: Fit doors accurately in frames, within clearances specified below. Shim as necessary.
 - 1. Between Door and Frame Jambs and Head: 1/8-inch plus or minus 1/32-inch.
 - 2. Between Edges of Pairs of Doors: 1/8-inch to 1/4-inch plus or minus 1/32-inch.
 - 3. At Bottom of Door: 3/4-inch plus or minus 1/32-inch.
 - 4. Between Door Face and Stop: 1/16-inch to 1/8-inch plus or minus 1/32-inch.

3.4 PROTECTION

- A. Protect installed doors from damage.

3.5 ADJUSTING AND CLEANING

- A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including work that is warped, bowed, or otherwise unacceptable.
- B. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.

END OF SECTION 081613

SECTION 102213 - WIRE MESH PARTITIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Heavy-duty wire mesh partitions.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings:
 - 1. Include plans, elevations, sections, details, and attachments to other work.
 - 2. Indicate clearances required for operation of doors.
- C. Samples for Initial Selection: For units with factory-applied color finishes.
- D. Samples for Verification: 12-by-12-inch panel constructed of specified frame members and wire mesh. Show method of finishing members at intersections.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Welding certificates.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For wire mesh partition hardware to include in maintenance manuals.

1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Door Locks: Furnish five percent (5%) of quantity installed for each type indicated, but no fewer than two (2) locks.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: Fabricator of products.

B. Welding Qualifications: Qualify procedures and personnel according to the following:

1. AWS D1.1, "Structural Welding Code - Steel."

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver wire mesh items with cardboard protectors on perimeters of panels and doors and with posts wrapped to provide protection during transit and Project-site storage. Use vented plastic.

B. Inventory wire mesh partition door hardware on receipt, and provide secure lockup for wire mesh partition door hardware delivered to Project site.

1. Tag each item or package separately with identification, and include basic installation instructions with each item or package.

C. Deliver keys to Owner by registered mail or overnight package service.

1.9 FIELD CONDITIONS

A. Field Measurements: Verify actual dimensions of construction contiguous with wire mesh units by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis of Design:

1. SpaceGuard Products; **2180 Welded Wire Partitions**

B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. GlassEssential; a division of Vrinda, Inc.
2. Kenco Wire & Iron Products, Inc.
3. Newark Wire Works, Inc.
4. R. J. Donaldson, Inc.

2.2 PERFORMANCE REQUIREMENTS

A. Structural Performance: Wire mesh units shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated.

1. Concentrated load of 50 lbf applied horizontally on an area of 1 sq. ft. at any location on a panel.
2. Total load of 200 lbf applied uniformly over each panel.
3. Concentrated load and total load need not be assumed to act concurrently.

B. Seismic Performance: Wire mesh units shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.

2.3 MATERIALS

- A. Steel Wire: ASTM A 510.
- B. Steel Plates, Channels, Angles, and Bars: ASTM A 36.
- C. Steel Sheet: Cold-rolled steel sheet, ASTM A 1008, Commercial Steel (CS), Type B.
- D. Steel Tubing: ASTM A 500, cold-formed structural-steel tubing or ASTM A 513, Type 5, mandrel-drawn mechanical tubing.
- E. Panel-to-Panel Fasteners: Manufacturer's standard steel bolts, nuts, and washers.
- F. Post-Installed Anchors: Capable of sustaining, without failure, a load equal to six times (6x) the load imposed when installed in unit masonry and four times (4x) the load imposed when installed in concrete, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.
 - 1. Material for Interior Locations: Carbon-steel components are zinc plated to comply with ASTM B 633 or ASTM F 1941, Class Fe/Zn 5, unless otherwise indicated.

2.4 HEAVY-DUTY WIRE MESH PARTITIONS

- A. Mesh: 0.192-inch-diameter steel wire, resistance welded into 1½-by-2½-inch rectangular mesh.
- B. Vertical and Horizontal Panel Framing: 1-by-1-inch 16-gauge steel tubing; with 1¼-by-3/8-inch slotted holes not more than 12 inches o.c., horizontally and 24 inches o.c., vertically.
- C. Horizontal Panel Stiffeners: 2-by-2-inch 14-gauge steel tube with base plate.
- D. Line Posts: 2-by-2 14-gauge steel tubes; with 3/16-inch steel base plates.
- E. Floor Shoes: Metal, not less than 2½ inches high; sized to suit vertical framing, drilled for attachment to floor, and with set screws for leveling adjustment.
- F. Swinging Doors: Fabricated from same materials as panels; pre-hung.
 - 1. Hinges: Full-surface type, 3½-by-3½-inch steel, three (3) per door; bolted, riveted, or welded to door and jamb framing.
 - 2. Jambs: One (1) 1¼-by-1¼ inches angle with lock receiver attached and slotted holes for securing door frame.
 - 3. Padlock Lug: Mortised into door framing and enclosed with steel cover.
 - 4. Inactive Leaf Hardware: Cane bolt at bottom and chain bolt at top.
- G. Accessories:
 - 1. Adjustable Filler Panels: 6-gauge welded wire mesh of above specification with 1¼-by-1/8-inch flat stock (same hole pattern as vertical frames) welded along sides.
 - 2. Wall Clips: Manufacturer's standard, cold-rolled steel sheet; allowing up to 1 inch of adjustment.
- H. Finish: Powder-coated finish unless otherwise indicated.

2.5 FABRICATION

- A. General: Fabricate wire mesh items from components of sizes not less than those indicated. Use larger-sized components as recommended by wire mesh item manufacturer. Furnish bolts, hardware, and accessories required for complete installation with manufacturer's standard finishes.
 - 1. Fabricate wire mesh items to be readily disassembled.
 - 2. Welding: Weld corner joints of framing and grind smooth, leaving no evidence of joint.
- B. Heavy-Duty Wire Mesh Partitions: Fabricate wire mesh partitions with cutouts for pipes, ducts, beams, and other items indicated. Finish edges of cutouts to provide a neat, protective edge.
 - 1. Mesh: Weld mesh to framing.
 - 2. Framing: Fabricate framing with mortise and tenon corner construction.
 - a. Provide horizontal stiffeners as indicated or, if not indicated, as required by panel height and as recommended by wire mesh partition manufacturer. Weld horizontal stiffeners to vertical framing.
 - b. Fabricate partition and door framing with slotted holes for connecting adjacent panels.
 - 3. Fabricate wire mesh partitions with 3 to 4 inches of clear space between finished floor and bottom horizontal framing.
 - 4. Doors: Align bottom of door with bottom of adjacent panels.
 - a. For doors that do not extend full height of partition, provide transom over door, fabricated from same mesh and framing as partition panels.
 - 5. Hardware Preparation: Mortise, reinforce, drill, and tap doors and framing as required to install hardware.

2.6 STEEL AND IRON FINISHES

- A. Powder-Coat Finish: Immediately after cleaning and pretreating, apply manufacturer's standard baked-on powder-coat finish, suitable for use indicated, with a minimum dry film thickness of 2 mils.
 - 1. Color and Gloss: As selected by Architect and Owner from manufacturer's full range.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine floors for suitable conditions where wire mesh items will be installed.
- C. Examine walls to which wire mesh items will be attached for properly located blocking, grounds, and other solid backing for attachment of support fasteners.

- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 WIRE MESH PARTITIONS ERECTION

- A. Anchor wire mesh partitions to floor with 3/8-inch-diameter postinstalled expansion anchors at 12 inches o.c. through floor shoes located at each post and corner. Adjust wire mesh partition posts in floor shoes to achieve level and plumb installation.
- B. Anchor wire mesh partitions to walls at 12 inches o.c. through back corner panel framing and as follows:
 - 1. For wood stud partitions, use lag bolts set into wood backing between studs. Coordinate with carpentry work to locate backing members.
- C. Provide line posts at locations indicated or, if not indicated, as follows:
 - 1. For partitions that are 7 to 9 feet high, spaced at 15 to 20 feet o.c.
 - 2. For partitions that are 10 to 12 feet high, located between every other panel.
 - 3. For partitions that are more than 12 feet high, located between each panel.
- D. Where standard-width wire mesh partition panels do not fill entire length of run, provide adjustable filler panels to fill openings.
- E. Install doors complete with door hardware.
- F. Bolt accessories to wire mesh partition framing.

3.3 ADJUSTING AND CLEANING

- A. Adjust doors to operate smoothly and easily, without binding or warping. Adjust hardware to function smoothly. Confirm that latches and locks engage accurately and securely without forcing or binding.
- B. Remove and replace defective work, including doors and framing that are warped, bowed, or otherwise unacceptable.
- C. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

END OF SECTION 102213

EMERGENCY SERVICE MODIFICATIONS

**FACILITIES & MAINTENANCE BUILDING
2145 MAIN STREET
GLASTONBURY, CT 06033**

S/P+A PROJECT NO. 17.007

Drawing Number

Drawing Name

COVER

Architectural Drawings

A1 GENERAL INFORMATION
A2 CODE PLANS & INFORMATION
A3 FIRST FLOOR PLAN & SCREEN WALL DETAILS
A4 SECOND FLOOR PLAN, SCHEDULES & DOOR TYPES

Fire Protection Drawings

F1 FIRE PROTECTION COVER SHEET & SCHEDULES
F2 FIRE PROTECTION MAIN LEVEL FLOOR PLAN
F3 FIRE PROTECTION MEZZANINE & ATTIC PLANS
F4-F5 FIRE PROTECTION DETAILS

Plumbing Drawings

P1 PLUMBING PLANS, SCHEDULES, NOTES & DETAILS

Mechanical Drawings

M-1 GENERAL MECHANICAL NOTES, LEGEND & ABBREVIATIONS
M-2 MECHANICAL NOTES, FLOOR PLAN, DETAILS & SCHEDULES

Electrical Drawings

E1 POWER & SYSTEMS FLOOR PLANS – ELECTRICAL
E2 PHOTOVOLTAIC ROOF PLAN, DETAILS & NOTES

END OF DRAWING LIST

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes:

- 1. Mechanical door hardware for the following:

- a. Swinging doors.

B. Related Sections:

- 1. Section 081113 "Hollow Metal Doors and Frames" for door silencers provided as part of hollow-metal frames.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction and installation details, material descriptions, dimensions of individual components and profiles, and finishes.

- B. Samples: For each exposed product in each finish specified, in manufacturer's standard size.

- 1. Tag Samples with full product description to coordinate Samples with door hardware schedule.

C. Other Action Submittals:

- 1. Door Hardware Schedule: Prepared by or under the supervision of Installer, detailing fabrication and assembly of door hardware, as well as installation procedures and diagrams. Coordinate final door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

- a. Submittal Sequence: Submit door hardware schedule concurrent with submissions of Product Data. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate the fabrication of other work that is critical in Project construction schedule.

- b. Format: Use same scheduling sequence and format and use same door numbers as in the Contract Documents.

- c. Content: Include the following information:

- 1) Identification number, location, hand, fire rating, size, and material of each door and frame.

- 2) Locations of each door hardware set, cross-referenced to Drawings on floor plans and to door and frame schedule.
 - 3) Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.
 - 4) Fastenings and other pertinent information.
 - 5) Explanation of abbreviations, symbols, and codes contained in schedule.
 - 6) Mounting locations for door hardware.
 - 7) List of related door devices specified in other Sections for each door and frame.
2. Keying Schedule: Prepared by or under the supervision of Installer, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations that are coordinated with the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Product Test Reports: For compliance with accessibility requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for door hardware on doors located in accessible routes.
- C. Warranty: Special warranty specified in this Section.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each type of door hardware to include in maintenance manuals. Include final hardware and keying schedule.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Supplier of products and an employer of workers trained and approved by product manufacturers who is available during the course of the Work to consult with Contractor, Architect, and Owner about door hardware and keying.
 1. Warehousing Facilities: In Project's vicinity.
 2. Scheduling Responsibility: Preparation of door hardware and keying schedules.
- B. Source Limitations: Obtain each type of door hardware from a single manufacturer.
- C. Fire-Rated Door Assemblies: Where fire-rated doors are indicated, provide door hardware complying with NFPA 80 that is listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.
- D. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that complies with requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.
 1. Air Leakage Rate: Maximum air leakage of 0.3 cfm/sq. ft. at the tested pressure differential of 0.3-inch wg of water.

- E. Means of Egress Doors: Latches do not require more than 15 lbf to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.
- F. Accessibility Requirements: For door hardware on doors in an accessible route, comply with the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.
 - 1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf.
 - 2. Comply with the following maximum opening-force requirements:
 - a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf applied perpendicular to door.
 - b. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
 - 3. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than ½-inch-high.
 - 4. Adjust door closer sweep periods so that, from an open position of 70 degrees, the door will take at least three (3) seconds to move to a point 3 inches from the latch, measured to the leading edge of the door.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.
- B. Tag each item or package separately with identification coordinated with the final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.
- C. Deliver keys to Owner by registered mail or overnight package service.

1.8 COORDINATION

- A. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- B. Security: Coordinate installation of door hardware, keying, and access control with Owner and their security consultant.
- C. Existing Openings: Where hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide proper door operation.

1.9 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:
 - a. Structural failures including excessive deflection, cracking, or breakage.
 - b. Faulty operation of doors and door hardware.
 - c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.
2. Warranty Period: Three (3) years from date of Substantial Completion, unless otherwise indicated.
 - a. Manual Closers: Ten (10) years from date of Substantial Completion.

1.10 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.
- B. Maintenance Service: Beginning at Substantial Completion, provide six (6) months' full maintenance by skilled employees of door hardware Installer. Include quarterly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper door and door hardware operation. Provide parts and supplies that are the same as those used in the manufacture and installation of original products.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

- A. Provide door hardware for each door as scheduled in Part 3 "Door Hardware Schedule" Article to comply with requirements in this Section.
 1. Door Hardware Sets: Provide quantity, item, size, finish or color indicated, and products equivalent in function and comparable in quality to named products, where allowed.
- B. Designations: Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of door hardware are indicated in Part 3 "Door Hardware Schedule" Article. Products are identified by using door hardware designations, as follows:
 1. Named Manufacturers' Products: Manufacturer and product designation are listed for each door hardware type required for the purpose of establishing minimum requirements. Manufacturers' names are abbreviated in Part 3 "Door Hardware Schedule" Article.

2.2 HINGES

- A. Hinges: BHMA A156.1. Provide template-produced hinges for hinges installed on hollow-metal doors and hollow-metal frames.
 1. Basis of Design:
 - a. Stanley Commercial Hardware; Div. of The Stanley Works; **CB179**

2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Hager Companies
 - b. McKinney Products Company; an ASSA ABLOY Group company
 - c. Substitutions: Under provisions of Section 012500 "Substitution Procedures".

2.3 MECHANICAL LOCKS AND LATCHES

- A. Lock Functions: As indicated in Part 3 "Door Hardware Schedule".
- B. Lock Throw: Comply with testing requirements for length of bolts required for labeled fire doors, and as follows:
 1. Bored Locks: Minimum ½-inch latchbolt throw.
- C. Lock Backset: 2¾ inches, unless otherwise indicated.
- D. Lock Trim:
 1. Levers: Cast.
 2. Escutcheons (Roses): Wrought.
 3. Dummy Trim: Match lever lock trim and escutcheons.
 4. Operating Device: Lever with escutcheons (roses).
- E. Strikes: Provide manufacturer's standard strike for each lock bolt or latchbolt complying with requirements indicated for applicable lock or latch and with strike box and curved lip extended to protect frame; finished to match lock or latch.
 1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
 2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
- F. Bored Locks: BHMA A156.2; Grade 1; Series 4000.
 1. Basis of Design:
 - a. Schlage Commercial Lock Division; an Ingersoll-Rand company; **ND Series – Rhodes, Vandgard** functions
 2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Corbin Russwin Architectural Hardware; n ASSA ABLOY Group Company
 - b. Medeco Security Locks, Inc.; an ASSA ABLOY Group company
 - c. SARGENT Manufacturing Company; an ASSA ABLOY Group company
 - d. Substitutions: Under provisions of Section 012500 "Substitution Procedures".

2.4 MANUAL FLUSH BOLTS

- A. Manual Flush Bolts: BHMA A156.16; minimum ¾-inch throw.
 - 1. Basis-of-Design Product:
 - a. Door Controls International, Inc.; **780F**, designed for mortising into door edge
 - 2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Glynn-Johnson; an Ingersoll-Rand company
 - b. IVES Hardware; an Ingersoll-Rand company
 - c. Substitutions: Under provisions of Section 012500 "Substitution Procedures".

2.5 LOCK CYLINDERS

- A. Lock Cylinders: Tumbler type, constructed from brass or bronze, stainless-steel, or nickel silver.
 - 1. Manufacturer: Same manufacturer as for locking devices.
- B. Standard Lock Cylinders: BHMA A156.5; Grade 1; permanent cores that are removable; face finished to match lockset.
- C. Construction Cores: Provide construction cores that are replaceable by permanent cores. Provide ten (10) construction master keys.

2.6 KEYING

- A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, Appendix A. Incorporate decisions made in keying conference.
 - 1. Great-Grand Master Key System: Change keys, a master key, a grand master key, and a great-grand master key operate cylinders, to match existing system.
- B. Keys: Brass.
 - 1. Stamping: Permanently inscribe each key with a visual key control number and include the following notation:
 - a. Notation: "DO NOT DUPLICATE."
 - 2. Quantity: In addition to one (1) extra key blank for each lock, provide the following:
 - a. Great-Grand Master Keys: Five (5).

2.7 ACCESSORIES FOR PAIRS OF DOORS

- A. Coordinators: BHMA A156.3; consisting of active-leaf, hold-open lever and inactive-leaf release trigger; fabricated from steel with nylon-coated strike plates; with built-in, adjustable safety release; and with internal override.

2.8 SURFACE CLOSERS

- A. Surface Closers: BHMA A156.4; rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves and forged-steel main arm. Comply with manufacturer's written recommendations for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.
1. Basis-of-Design Product:
 - a. LCN Closers; an Ingersoll-Rand company; **4040 Series**
 - b. No substitutions.
 - B. Door closers, marked closer, shall be **Smoothee** series, with delayed action cylinder, sized to the door leaf size.
 - C. Door closers, marked closer/stop shall be **Cush-N-Stop** series, with delayed action cylinder, sized to the door leaf size.
 - D. Door closers are to be mounted on the least conspicuous side of the door. The hardware supplier shall consult with the Architect to verify applications, and note mounting locations on the hardware schedule.

2.9 MECHANICAL STOPS AND HOLDERS

- A. Wall- and Floor-Mounted Stops: BHMA A156.16; polished cast brass, bronze, or aluminum base metal.
1. Basis-of-Design Product:
 - a. IVES Hardware; an Ingersoll-Rand company; **407 and 436 or 438**
 - 1) Provide wall bumpers wherever possible. Provide floor stops where the use of wall bumpers is not feasible, provided the location of the stop is not a stumbling hazard or would cause the door to rack at the hinges.
 2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Glynn-Johnson; an Ingersoll-Rand company.
 - b. Door Controls International, Inc.
 - c. Substitutions: In accordance with Section 012500 "Substitution Procedures".

2.10 OVERHEAD STOPS AND HOLDERS

- A. Overhead Stops and Holders: BHMA A156.8.
1. Basis-of-Design Product:
 - a. Glynn-Johnson; an Ingersoll-Rand company; **90S**

2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Architectural Builders Hardware Mfg., Inc.
 - b. Rockwood Manufacturing Company.
 - c. SARGENT Manufacturing Company; an ASSA ABLOY Group company.
 - d. Substitutions: In accordance with Section 012500 "Substitution Procedures".

2.11 SMOKE SEALS (SMOKE GASKETING)

- A. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke ratings indicated, based on testing according to UL 1784.

1. Basis-of-Design Products:
 - a. Pemko Manufacturing Co.; an ASSA ABLOY Group company
 - 1) Smoke Rated Doors:
 - a) Head and Jamb: **S88C**, compression bulb.
 - b) Sill: **411APKL**, automatic door bottom.
 - 2) Fire Rated Doors: Provided by the door manufacturer.
2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Reese Enterprises, Inc.
 - b. Zero International
 - c. Substitutions: In accordance with Section 012500 "Substitution Procedures".

2.12 WEATHERSTRIPPING (DOOR GASKETING)

- A. Door Gasketing: BHMA A156.22; air leakage not to exceed 0.50 cfm per foot of crack length for gasketing other than for smoke control, as tested according to ASTM E 283; with resilient or flexible seal strips that are easily replaceable and readily available from stocks maintained by manufacturer.

1. Basis-of-Design Product:
 - a. Zero International
 - 1) Head and Jamb: **#328D**, solid neoprene in an extruded aluminum housing.
 - 2) Sill: **#339D** with extruded aluminum housing, solid neoprene.
2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

- a. National Guard Products.
- b. Pemko Manufacturing Co.; an ASSA ABLOY Group company.
- c. Substitutions: In accordance with Section 012500 "Substitution Procedures".

2.13 THRESHOLDS

A. Thresholds: BHMA A156.21; fabricated to full width of opening indicated.

1. Basis-of-Design Product:

- a. Pemko Manufacturing Co.; an ASSA ABLOY Group company; **2005DT**

2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

- a. National Guard Products.
- b. Zero International.
- c. Substitutions: In accordance with Section 012500 "Substitution Procedures".

2.14 METAL PROTECTIVE TRIM UNITS

A. Metal Protective Trim Units: BHMA A156.6; fabricated from 0.050-inch-thick bronze; with manufacturer's standard machine or self-tapping screw fasteners.

1. Basis-of-Design Product: Burns Manufacturing Incorporated

- a. Kick Plates: 16 inches high.
- b. All plates are 2 inches less width of door on single doors, 1 inch less width of door on pairs.

2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

- a. IVES Hardware; an Ingersoll-Rand company.
- b. Rockwood Manufacturing Company.
- c. Substitutions: In accordance with Section 012500 "Substitution Procedures".

2.15 AUXILIARY DOOR HARDWARE

A. Auxiliary Hardware: BHMA A156.16.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

- a. Hager Companies.
- b. Rockwood Manufacturing Company.
- c. Stanley Commercial Hardware; Div. of The Stanley Works.
- d. Substitutions: In accordance with Section 012500 "Substitution Procedures".

2.16 FABRICATION

- A. Base Metals: Produce door hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18.
- B. Fasteners: Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware, unless otherwise indicated.
 - 1. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.
 - 2. Fire-Rated Applications:
 - a. Wood or Machine Screws: For the following:
 - 1) Hinges mortised to doors or frames.
 - 2) Strike plates to frames.
 - 3) Closers to doors and frames.
 - b. Steel Through Bolts: For the following unless door blocking is provided:
 - 1) Surface hinges to doors.
 - 2) Closers to doors and frames.
 - 3) Surface-mounted exit devices.
 - 3. Spacers or Sex Bolts: For through bolting of hollow-metal doors.
 - a. All closers to be installed using through bolting.
 - 4. Gasketing Fasteners: Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

2.17 FINISHES

- A. Provide finishes complying with BHMA A156.18. Finish for all hardware to be 613.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION**3.1 EXAMINATION**

- A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.

3.3 INSTALLATION

- A. Mounting Heights: Mount door hardware units at heights to comply with the following unless otherwise indicated or required to comply with governing regulations.
 - 1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
- B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing. Do not install surface-mounted items until finishes have been completed on substrates involved.
 - 1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
 - 2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- C. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than the number recommended by manufacturer for application indicated or one (1) hinge for every 30 inches of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.
- D. Lock Cylinders: Install construction cores to secure building and areas during construction period.
 - 1. Replace construction cores with removable cores as indicated in keying schedule.
 - 2. Furnish permanent cores to Owner for installation.
- E. Thresholds: Set thresholds for doors indicated in full bed of sealant complying with requirements specified in Section 079200 "Joint Sealants."
- F. Stops: Provide wall or floor stops for doors unless other type stops are indicated in door hardware schedule. Do not mount floor stops where they will impede traffic.
- G. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

- H. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

3.4 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
 - 1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

3.5 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items as necessary to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

3.6 DOOR HARDWARE SCHEDULE

- A. Provide hardware as specified in the previous articles in sets according to the following schedule and as indicated in the Door Schedule on the Drawings.
- B. The hardware supplier shall meet with the Architect and/or Owner to determine lock functions and keying requirements.

HW-1

EACH TO HAVE:

- BUTTS
- 1 CLASSROOM LOCKSET
- 1 STOP
- 1 KICK PLATE
- SILENCERS

DOOR: 100

HW-2

EACH TO HAVE:

- BUTTS
- 1 CLASSROOM LOCKSET
- 1 CLOSER
- 1 OH STOP
- 1 KICK PLATE
- 1 THRESHOLD
- WEATHERSTRIPPING

DOOR: 101

HW-3

EACH TO HAVE:

- BUTTS
- 1 CLASSROOM LOCKSET
- 1 CLOSER/STOP
- 1 KICK PLATE
- SMOKE SEALS

DOOR: 102

HW-4

EACH TO HAVE:

- BUTTS
- 1 OFFICE LOCKSET
- 1 CLOSER/STOP
- 1 KICK PLATE
- SILENCERS

DOOR: 202

HW-5

EACH TO HAVE:

- BUTTS
- 1 CLASSROOM LOCKSET
- 2 CLOSER/STOPS
- 2 KICK PLATES
- FLUSHBOLTS
- 1 COORDINATOR
- SILENCERS

DOOR: 203

HW-7

EACH TO HAVE:

- BUTTS
- 1 OFFICE LOCKSET
- 1 CLOSER
- 1 STOP
- 1 KICK PLATE
- SILENCERS

DOOR: 201

HW-6

EACH TO HAVE:

- BUTTS
- 1 CLASSROOM LOCKSET
- 1 CLOSER
- 1 STOP
- 1 KICK PLATE

- SMOKE SEALS

DOOR: 204

END OF SECTION 087100