

**ADDENDUM
NO. 2**

February 13, 2025

**CHESTERTON HIGH SCHOOL SOCCER VENUE
IMPROVEMENTS AND RELATED WORK
Chesterton, IN 46304**

TO: ALL BIDDERS OF RECORD

This Addendum forms a part of and modifies the Bidding Requirements, Contract Forms, Contract Conditions, the Specifications, and the Drawings dated January 21, 2025 by Gibraltar Design, Inc. Acknowledge receipt of the Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of Pages ADD 2-1 and attached Addendum No. 2 from Gibraltar Design, Inc. dated February 12, 2025 and consisting of 3 pages, replacement Specification Section 08 71 00 – Door Hardware, added Specification Section 08 91 00 – Aluminum Wall Louvers and 5 drawings.

A. SPECIFICATION SECTION 00 00 20 – TABLE OF CONTENTS

1. Add:

- a. Specification Section 08 91 00 – Aluminum Wall Louvers

B. SPECIFICATION SECTION 01 12 00 – MULTIPLE CONTRACT SUMMARY

Under 3.03 Bid Categories

B. BID CATEGORY NO. 02 - GENERAL TRADES

1. Add:

- a. Specification Section 08 91 00 – Aluminum Wall Louvers

ADDENDUM TWO

Addendum Two (AD.02) to the drawings and specifications prepared by Gibraltar Design for **Duneland Chesterton HS Soccer Venue Improvements and Related Work** for Duneland School Corporation, Chesterton, Indiana.

All Contractors bidding on this project shall read all of the items covered below and shall comply with all of the requirements as set forth, including any necessary refinements or additions generated by this Addendum and required by the intent of the original contract documents. All Contractors shall acknowledge on their bid form that they have received this Addendum and Addendum One and include the appropriate content of same within their bid proposal.

SPECIFICATIONS

1. Specification Section 00 01 10

Table of Contents

A. Add the following Specification Section to the Table of Contents:

1. Section 08 91 00, Aluminum Wall Louvers

2. Specification Section 04 20 00

Unit Masonry

A. Add new Paragraph 1.1.D. as follows: "D. Concrete masonry unit insulation."

B. Revise Paragraph 2.9.B. and C. changing the word 'Cut' to 'Precast'

C. Add new Paragraph 2.14. as follows:

"2.14 Insulation

A. Masonry Cell Insulation: Loose-Granular Fill Insulation, Perlite, complying with ASTM C 549, Type II (surface treated for water repellency and limited moisture absorption).

B. Location: Ticket Booth and Soccer Support Building, exterior perimeter concrete masonry units, all open cells, full height of wall."

D. Delete Paragraph 3.2.M. in its entirety.

E. Revise Paragraph 3.4.H.1. to the following: "1. Place subsequent lifts in 4-foot increments and rod for grout consolidation."

F. Delete Paragraph 3.14.B.3. in its entirety.

G. Add new Paragraph 3.14.C.1.d. as follows: "d. After cleaning face brick, apply clear waterproofing to exposed face brick as specified."

H. Add new Paragraph 3.14.E. as follows: "E. After pointing and cleaning Cast Stone is completed, in conjunction with the Brick Veneer above, apply clear waterproofing to exposed Cast Stone as specified."

3. Specification Section 06 10 00

Rough Carpentry

A. Add new Paragraph 2.3. as follows:

"2.3 Finished Wood Trim for Project

A. Fabricate finish carpentry in accordance with recommendations of AWI, custom grade, and to extent shown and detailed on the drawings.

B. Hardwood Lumber: Clear Select, Plain sliced Poplar, finish grade."

4. Specification Section 08 33 00 Rolling Doors

A. Add new Paragraph 2.2.I. as follows:

"I. Stainless Steel Countertop: Provide and install new stainless steel transaction countertop.

1. Stainless Steel Shapes: ASTM A240, Type 304.
2. Gauge: 16 ga., with 18 gauge Galvanized channel support.
3. Location, size and shape: Refer to Drawings.
4. Stainless Steel or Aluminum Support Bracket.
5. Stainless Steel Fasteners.
6. Provide for positive slope to exterior."

5. Specification Section 08 71 00 Door Hardware

A. Refer to Re-issued Specification Section 08 71 00, Door Hardware, included in this Addendum, includes door hardware sets.

6. Specification Section 08 91 00 Aluminum Wall Louvers

A. Add Specification Section 08 91 00, Architectural Wall Louvers, included in this Addendum, to the Project Manual.

7. Specification Section 32 31 19 Ornamental Fences and Gates

A. Revise Paragraph 2.3.A.1. thru 3. only as follows (4. thru 9. Are unchanged):

"A. Aluminum Ornamental Fence System: System includes fence posts, framework, and mounting accessories. Matching existing decorative fence at Football Field, understood to be Ameristar Echelon II Aluminum Fence.

1. Style: Flush Top Rail. Three Rail.
2. Height: 6-Feet.
3. Aluminum: ASTM B221, Tubular Pickets, rails and posts.
 - a. Extrusions for posts and rails (outer channel): 6005-T5.
 - b. Extrusions for pickets and rail (inner slide channels): 6063-T5."

B. Revise Paragraph 2.3.A.10. as follows:

- "10. Accessories: Aluminum Castings.
- a. Flat Pressed Post Cap."

DRAWINGS

1. Sheet G-101 (Sheet not issued)

A. Add sheet A-901 Reflected Ceiling Plans to sheet index.

2. Sheet C-2.0

A. Refer to revised full size drawing included in this addendum for the following revisions:

1. Revise and add notes to clarify fencing.
2. Revise "netting" note on north side of practice field to say "netting by owner."

3. Sheet C-2.1 (Seet not Issued)

- A. Remove note at west parking lot that says "existing parking curb to remain."

4. Sheet C-4.0

- A. Refer to revised full size drawing included in this addendum for the following revisions:
1. Revise grading at existing detention pond.

5. Sheet A-101

- A. Refer to revised full size drawing included in this addendum for the following revisions:
1. Revise approximate location of the attic access.
 2. Add General Note I.

6. Sheet A-301

- A. Refer to revised full size drawing included in this addendum for the following revisions:
1. Add control joints.
 2. Revise location of plan notes 1 and 2 to clearly denote the two different brick colors.

7. Sheet A-901

- A. Add new full-size sheet to bid documents adding Reflected Ceiling Plans.

Pages 1 through 3, inclusive, Specification Section 08 71 00 and 08 91 00, and five (5) Full-Size Drawings, constitute the total makeup of **Addendum Two**.



Joseph P. Briggs

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SECTION 08 71 00

DOOR HARDWARE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. Section includes:

- 1. Mechanical door hardware for:
 - a. Swinging doors.
- 2. The intent of the hardware specification is to specify the hardware for interior and exterior doors, and to establish a type, continuity, and standard of quality. However, it is the door hardware supplier's responsibility to thoroughly review existing conditions, schedules, specifications, drawings, and other Contract Documents to verify the suitability of the hardware specified.

- B. Exclusions: Unless specifically listed in hardware sets, hardware is not specified in this section for:

- 1. Windows
- 2. Cabinets (casework), including locks in cabinets
- 3. Signage
- 4. Toilet accessories
- 5. Overhead doors

- C. Related Sections:

- 1. Division 07 Section "Joint Sealants" for sealant requirements applicable to threshold installation specified in this section.

1.03 REFERENCES

- A. UL - Underwriters Laboratories

- 1. UL 10B - Fire Test of Door Assemblies
- 2. UL 10C - Positive Pressure Test of Fire Door Assemblies
- 3. UL 1784 - Air Leakage Tests of Door Assemblies

4. UL 305 - Panic Hardware
- B. DHI - Door and Hardware Institute
 1. Sequence and Format for the Hardware Schedule
 2. Recommended Locations for Builders Hardware
 3. Key Systems and Nomenclature
- C. ANSI - American National Standards Institute
 1. ANSI/BHMA A156.1 - A156.29, and ANSI/BHMA A156.31 - Standards for Hardware and Specialties

1.04 SUBMITTALS

- A. General:
 1. Submit in accordance with Conditions of Contract and Division 01 requirements.
 2. Highlight, encircle, or otherwise specifically identify on submittals deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.
- B. Action Submittals:
 1. Product Data: Technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
 2. Samples for Verification: If requested by Architect, submit production sample or sample installations of each type of exposed hardware unit in finish indicated, and tagged with full description for coordination with schedule.
 - a. Samples will be returned to supplier. Units that are acceptable to Architect may, after final check of operations, be incorporated into Work, within limitations of key coordination requirements.
 3. Door Hardware Schedule:
 - a. Submit concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate fabrication of other work critical in Project construction schedule.
 - b. Submit under direct supervision of a Door Hardware Institute (DHI) certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule published by DHI.
 - c. Indicate complete designations of each item required for each opening, include:
 - 1) Door Index: door number, heading number, and Architect's hardware set number.
 - 2) Quantity, type, style, function, size, and finish of each hardware item.
 - 3) Name and manufacturer of each item.
 - 4) Fastenings and other pertinent information.

- 5) Location of each hardware set cross-referenced to indications on Drawings.
- 6) Explanation of all abbreviations, symbols, and codes contained in schedule.
- 7) Mounting locations for hardware.
- 8) Door and frame sizes and materials.
- 9) Degree of door swing and handing.
- 10) Operational Description of openings with electrified hardware covering egress, ingress (access), and fire/smoke alarm connections.

4. Key Schedule:

- a. After Keying Conference, provide keying schedule listing levels of keying as well as explanation of key system's function, key symbols used and door numbers controlled.
 - b. Use ANSI/BHMA A156.28 "Recommended Practices for Keying Systems" as guideline for nomenclature, definitions, and approach for selecting optimal keying system.
 - c. Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.
 - d. Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.
 - e. Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion.
 - 1) Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.
 - f. Prepare key schedule by or under supervision of supplier, detailing Owner's final keying instructions for locks.
5. Templates: After final approval of hardware schedule, provide templates for doors, frames and other work specified to be factory or shop prepared for door hardware installation.

C. Informational Submittals:

1. Qualification Data: For Supplier, Installer and Architectural Hardware Consultant.
2. Certificates of Compliance:
 - a. UL listings for fire-rated hardware and installation instructions if requested by Architect or Authority Having Jurisdiction.
 - b. Installer Training Meeting Certification: Letter of compliance, signed by Contractor, attesting to completion of installer training meeting specified in "QUALITY ASSURANCE" article, herein.
3. Warranty: Special warranty specified in this Section.

D. Closeout Submittals:

1. Operations and Maintenance Data: Provide in accordance with Division 01 and include:

- a. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
- b. Catalog pages for each product.
- c. Factory order acknowledgement numbers (for warranty and service)
- d. Name, address, and phone number of local representative for each manufacturer.
- e. Parts list for each product.
- f. Final approved hardware schedule, edited to reflect conditions as-installed.
- g. Final keying schedule
- h. Copies of floor plans with keying nomenclature
- i. As-installed wiring diagrams for each opening connected to power, both low voltage and 110 volts.
- j. Copy of warranties including appropriate reference numbers for manufacturers to identify project.

1.05 QUALITY ASSURANCE

A. Requirements of Regulatory Agencies:

1. Furnish finish hardware to comply with the requirements of laws, codes, ordinances, and regulations of the governmental authorities having jurisdiction where such requirements exceed the requirements of the Specifications.
2. Furnish finish hardware to comply with the requirements of the regulations for public building accommodations for physically handicapped persons of the governmental authority having jurisdiction and to comply with Americans with Disabilities Act.
3. Provide hardware for fire rated openings in compliance with NFPA 80 and state and local building code requirements. Provide only hardware that has been tested and listed by UL for types and sizes of doors required and complies with requirements of door and door frame labels.

B. Supplier:

1. Mechanical Hardware

- a. Shall be an established firm dealing in contract builders' hardware. Distributor must have adequate inventory, qualified personnel on staff and be located within 100 miles of the project. The distributor must be a factory-authorized dealer for all materials required. The supplier shall be or have in employment an Architectural Hardware Consultant (AHC).
- b. Door Hardware distributor/supplier listed on the Bid Form shall be a factory authorized distributor for the hardware specified. This requirement will not be allowed to be met by a non-factory authorized dealer subcontracting to a factory authorized dealer. Any submitted bid that attempts to circumvent this requirement will be considered non-response and will be removed from consideration.

C. Installer Qualifications:

1. Qualified tradesmen, skilled in application of commercial grade hardware with record of successful in-service performance for installing door hardware similar in quantity, type, and quality to that indicated for this Project.

- D. Architectural Hardware Consultant Qualifications: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:
 - 1. For door hardware, DHI-certified, Architectural Hardware Consultant (AHC).
 - 2. Can provide installation and technical data to Architect and other related subcontractors.
 - 3. Can inspect and verify components are in working order upon completion of installation.
 - 4. Capable of producing wiring diagrams.
 - 5. Capable of coordinating installation of electrified hardware with Architect and electrical engineers.

- E. Single Source Responsibility: Obtain each type of door hardware from single manufacturer.

- F. Accessibility Requirements: For door hardware on doors in an accessible route, comply with governing accessibility regulations cited in "REFERENCES" article, herein.

- G. Keying Conference
 - 1. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:
 - a. Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
 - b. Preliminary key system schematic diagram.
 - c. Requirements for key control system.
 - d. Requirements for access control.
 - e. Address for delivery of keys.
 - 2. Attendees of Keying Conference: Owner, Contractor, Architect, Installer, Owner's security consultant and Supplier's Architectural Hardware Consultant.

- H. Pre-installation Conference
 - 1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 2. Inspect and discuss preparatory work performed by other trades.
 - 3. Inspect and discuss electrical roughing-in for electrified door hardware.
 - 4. Review sequence of operation for each type of electrified door hardware.
 - 5. Review required testing, inspecting, and certifying procedures.

- I. Coordination Conferences:
 - 1. Installation Coordination Conference: Prior to hardware installation, schedule and hold meeting to review questions or concerns related to proper installation and adjustment of door hardware.
 - 2. Electrified Hardware Coordination Conference: Prior to ordering electrified hardware, schedule and hold meeting to coordinate door hardware with security, electrical, doors and frames, and other related suppliers.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site.
- B. Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.
 - 1. Deliver each article of hardware in manufacturer's original packaging.
- C. Project Conditions:
 - 1. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.
 - 2. Provide secure lock-up for door hardware delivered to Project. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.
- D. Protection and Damage:
 - 1. Promptly replace products damaged during shipping.
 - 2. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work.
 - 3. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.
- E. Deliver keys to Owner by registered mail or overnight package service.

1.07 COORDINATION

- A. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete.
- B. Installation Templates: Distribute for doors, frames, and other work specified to be factory or shop 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.

1.08 WARRANTY

- A. 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. Warranty Period: Beginning from date of Substantial Completion, for durations indicated.
 - a. Closers:
 - 1) Mechanical: 30 years.
 - b. Locksets:

- 1) Mechanical: 10 years
 - c. Continuous Hinges: Lifetime warranty.
 - d. Key Blanks: Lifetime
2. Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.

1.09 MAINTENANCE

- A. Maintenance Tools: Furnish complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. The Owner requires use of certain products for their unique characteristics and project suitability to insure continuity of existing and future performance and maintenance standards. After investigating available product offerings, the Awarding Authority has elected to prepare proprietary specifications. These products are specified with the notation: "No Substitute."
 1. Where "No Substitute" is noted, submittals and substitution requests for other products will not be considered.
- B. Approval of manufacturers and/or products other than those listed as "Scheduled Manufacturer" or "Acceptable Manufacturers" in the individual article for the product category shall be in accordance with QUALITY ASSURANCE article, herein.
- C. Approval of products from manufacturers indicated in "Acceptable Manufacturers" is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer's product.
- D. Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect's approval.

2.02 MATERIALS

- A. Fasteners
 1. Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation.
 2. Furnish screws for installation with each hardware item. Finish exposed (exposed under any condition) screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.
 3. Provide concealed fasteners for hardware units exposed when door is closed except when no standard units of type specified are available with concealed

- fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work unless thru-bolts are required to fasten hardware securely. Review door specification and advise Architect if thru-bolts are required.
4. Install hardware with fasteners provided by hardware manufacturer.
- B. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.
1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.

2.03 HINGES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: Ives 5BB series.
2. Acceptable Manufacturers and Products: Hager BB series (ECBB series not approved), McKinney TA/T4A series (MacPro series not approved).

B. Requirements:

1. Provide hinges conforming to ANSI/BHMA A156.1.
2. 1-3/4 inch (44 mm) thick doors, up to and including 36 inches (914 mm) wide:
 - a. Exterior & Interior: Standard weight, stainless steel, 4-1/2 inches (114 mm) high
3. 1-3/4 inch (44 mm) thick doors over 36 inches (914 mm) wide:
 - a. Exterior & Interior: Heavy weight, stainless steel, 5 inches (127 mm) high
4. Provide three hinges per door leaf for doors 90 inches (2286 mm) or less in height, and one additional hinge for each 30 inches (762 mm) of additional door height.
5. Where new hinges are specified for existing doors or existing frames, provide new hinges of identical size to hinge preparation present in existing door or existing frame.
6. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
 - a. Non-Ferrous Hinges: Stainless steel pins
 - b. Out-Swinging Exterior Doors: Non-removable pins
 - c. Out-Swinging Interior Lockable Doors: Non-removable pins
 - d. Interior Non-lockable Doors: Non-rising pins
7. Width of hinges: 4-1/2 inches (114 mm) at 1-3/4 inch (44 mm) thick doors, and 5 inches (127 mm) at 2 inches (51 mm) or thicker doors. Adjust hinge width as required for door, frame, and wall conditions to allow proper degree of opening.

2.04 CONTINUOUS HINGES

A. Aluminum Geared

1. Manufacturers:
 - a. Scheduled Manufacturer: Ives.

b. Acceptable Manufacturers: ABH, or Select.

2. Requirements:

- a. Provide aluminum geared continuous hinges conforming to ANSI/BHMA A156.26, Grade 1.
- b. Provide aluminum geared continuous hinges, where specified in the hardware sets, fabricated from 6063-T6 aluminum.
- c. Provide split nylon bearings at each hinge knuckle for quiet, smooth, self-lubricating operation.
- d. Provide hinges capable of supporting door weights up to 450 pounds, and successfully tested for 1,500,000 cycles.
- e. On fire-rated doors, provide aluminum geared continuous hinges that are classified for use on rated doors by testing agency acceptable to authority having jurisdiction.
- f. Install hinges with fasteners supplied by manufacturer.
- g. Provide hinges 1 inch (25 mm) shorter in length than nominal height of door, unless otherwise noted or door details require shorter length and with symmetrical hole pattern.

2.05 FLUSH BOLTS

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Ives
2. Acceptable Manufacturers:
 - a. Burns
 - b. Trimco

B. Requirements:

1. Provide automatic, constant latching, and manual flush bolts with forged bronze or stainless-steel face plates, extruded brass levers, and with wrought brass guides and strikes. Provide 12 inch (305 mm) steel or brass rods at doors up to 90 inches (2286 mm) in height. For doors over 90 inches (2286 mm) in height increase top rods by 6 inches (152 mm) for each additional 6 inches (152 mm) of door height. Provide dust-proof strikes at each bottom flush bolt.

2.06 COORDINATORS

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Ives
2. Acceptable Manufacturers:
 - a. Burns
 - b. Trimco

B. Requirements:

1. Where pairs of doors are equipped with automatic flush bolts, an astragal, or other hardware that requires synchronized closing of the doors, provide bar-type coordinating device, surface applied to underside of stop at frame head.
2. Provide filler bar of correct length for unit to span entire width of opening, and appropriate brackets for parallel arm door closers, surface vertical rod exit device strikes, or other stop mounted hardware. Factory-prepared coordinators for vertical rod devices as specified.

2.07 MORTISE LOCKS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: Schlage L9000 series.
2. Acceptable Manufacturers and Products: No Substitutions – Facility Standard.

B. Requirements:

1. Provide mortise locks conforming to ANSI/BHMA A156.13 Series 1000, Grade 1.
2. Provide locks manufactured from heavy gauge steel, containing components of steel with a zinc dichromate plating for corrosion resistance.
3. Provide lock case that is multi-function and field reversible for handing without opening case. Cylinders: Refer to "KEYING" article, herein.
4. Verify lock functions with owner prior to ordering.
5. Install thumb turns so they are in vertical position when doors are unlocked and in horizontal position when doors are locked.
6. Install thumb turns so they are in vertical position when doors are unlocked and in horizontal position when doors are locked.
7. Provide locks with standard 2-3/4 inches (70 mm) backset with full 3/4 inch (19 mm) throw stainless steel mechanical anti-friction latchbolt. Provide deadbolt with full 1 inch (25 mm) throw, constructed of stainless steel.
8. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
9. Lever Trim: Solid brass, bronze, or stainless steel, cast or forged in design specified, with wrought roses and external lever spring cages. Provide thru-bolted levers with 2-piece spindles.

- a. Lever Design: Schlage 06N

2.08 AUXILIARY LOCKS (LIS)

A. Deadlocks:

1. Manufacturers and Products:

- a. Scheduled Manufacturer and Product: Schlage L400 series.
- b. Acceptable Manufacturers and Products: No Substitutions – Facility Standard.

2. Requirements:

- a. Provide mortise deadlock series conforming to ANSI/BHMA A156 and function as specified.
- b. Cylinders: Refer to "KEYING" article, herein.

- c. Provide deadlocks with standard 2-3/4 inches (70 mm) backset. Provide deadbolt with full 1 inch (25 mm) throw, constructed of stainless steel.
- d. Provide manufacturer's standard strike.

2.09 CYLINDERS

A. Manufacturers:

1. Scheduled Manufacturer: Schlage
2. Acceptable Manufacturers: No Substitutions – Facility Standard

B. Requirements:

1. Provide cylinders/cores, from the same manufacturer of locksets, compliant with ANSI/BHMA A156.5; latest revision, Section 12, Grade 1; permanent cylinders; cylinder face finished to match lockset, manufacturer's series as indicated. Refer to "KEYING" article, herein.
2. Provide cylinders in the below-listed configuration(s), distributed throughout the Project as indicated.
 - a. Match owner's existing system.
 - b. Cylinder/Core Type: Large Format or Full Size Interchangeable Core (LFIC/FSIC).
3. Nickel silver bottom pins.
4. Replaceable Construction Cores.
 - a. Provide temporary construction cores replaceable by permanent cores, furnished in accordance with the following requirements.
 - 1) 2 construction control keys.
 - 2) 12 construction change (day) keys.

2.10 KEYING

- ### A. Provide a factory registered keying system, complying with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.

B. Requirements:

1. Provide keying system capable of multiplex masterkeying.
2. Permanent cylinders/cores keyed by the manufacturer according to the following key system.
 - a. Keying system as directed by the Owner.
 - b. Match Owner's existing system.
 - c. (Great)Grand Master Key System: Cylinders/cores operated by change (day) keys and subsequent masters (including grand/great grand) keys.
3. Forward bitting list and keys separately from cylinders, by means as directed by Owner. Failure to comply with forwarding requirements shall be cause for replacement of cylinders/cores involved at no additional cost to Owner.
4. Provide keys with the following features:

- a. Material: Nickel silver; minimum thickness of .107-inch (2.3mm).
- 5. Identification:
 - a. Mark permanent cylinders/cores and keys with applicable blind code per DHI publication "Keying Systems and Nomenclature" for identification. Blind code marks shall not include actual key cuts.
 - b. Identification stamping provisions must be approved by the Architect and Owner.
 - c. Stamp keys with Owner's unique key system facility code as established by the manufacturer; key symbol and embossed or stamped with "DO NOT DUPLICATE".
 - d. Failure to comply with stamping requirements shall be cause for replacement of keys involved at no additional cost to Owner.
 - e. Verify with owner if permanent cylinders/cores and/or keys are to be shipped directly to Owner or to Contractor.
- 6. Quantity: Furnish in the following quantities.
 - a. Change (Day) Keys: 3 per cylinder/core.
 - b. Permanent Control Keys: 3 (if required).
 - c. Master Keys: 6 per master.
 - d. Unused balance of key blanks shall be furnished to Owner with the cut keys.

2.11 DOOR CLOSERS

A. Manufacturers and Products:

- 1. Scheduled Manufacturer and Product: LCN 4040XP series.
- 2. Acceptable Manufacturers and Products: No Substitutions – Facility Standard.

B. Requirements:

- 1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. ISO 9000 certify closers. Stamp units with date of manufacture code.
- 2. Provide door closers with fully hydraulic, full rack and pinion action with high strength cast iron cylinder, and full complement bearings at shaft.
- 3. Cylinder Body: 1-1/2 inch (38 mm) diameter with 3/4 inch (19 mm) diameter double heat-treated pinion journal.
- 4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
- 5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.
- 6. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck.
- 7. Provide closers with solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers.
- 8. Pressure Relief Valve (PRV) Technology: Not permitted.
- 9. Finish for Closer Cylinders, Arms, Adapter Plates, and Metal Covers: Powder coating finish which has been certified to exceed 100 hours salt spray testing as

described in ANSI Standard A156.4 and ASTM B117, or has special rust inhibitor (SRI).

10. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.
11. Closers shall be capable of being upgraded by adding modular mechanical or electronic components in the field.

2.12 DOOR TRIM

A. Manufacturers:

1. Scheduled Manufacturer: Ives.
2. Acceptable Manufacturers: Burns, Trimco.

B. Requirements:

1. Provide push plates 4 inches (102 mm) wide by 16 inches (406 mm) high by 0.050 inch (1 mm) thick and beveled 4 edges. Where width of door stile prevents use of 4 inches (102 mm) wide plate, adjust width to fit.
2. Provide push bars of solid bar stock, diameter and length as scheduled. Provide push bars of sufficient length to span from center to center of each stile. Where required, mount back to back with pull.
3. Provide offset pulls of solid bar stock, diameter and length as scheduled. Where required, mount back to back with push bar.
4. Provide flush pulls as scheduled. Where required, provide back-to-back mounted model.
5. Provide pulls of solid bar stock, diameter and length as scheduled. Where required, mount back to back with push bar.
6. Provide pull plates 4 inches (102 mm) wide by 16 inches (406 mm) high by 0.050 inch (1 mm) thick, beveled 4 edges, and prepped for pull. Where width of door stile prevents use of 4 inches (102 mm) wide plate, adjust width to fit.
7. Provide wire pulls of solid bar stock, diameter and length as scheduled.
8. Provide decorative pulls as scheduled. Where required, mount back to back with pull.

2.13 PROTECTION PLATES

A. Manufacturers:

1. Scheduled Manufacturer: Ives.
2. Acceptable Manufacturers: Burns, Trimco.

B. Requirements:

1. Provide kick plates, mop plates, and armor plates minimum of 0.050 inch (1 mm) thick, beveled four edges as scheduled. Furnish with sheet metal or wood screws, finished to match plates.
2. Sizes of plates:
 - a. Kick Plates: 10 inches (254 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs

- b. Mop Plates: 4 inches (102 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs
- c. Armor Plates: 36 inches (914 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs

2.14 OVERHEAD STOPS AND OVERHEAD STOP/HOLDERS

A. Manufacturers:

- 1. Scheduled Manufacturers:
 - a. Glynn-Johnson
- 2. Acceptable Manufacturers:
 - a. Rixson
 - b. ABH

B. Requirements:

- 1. Provide overhead stop at any door where conditions do not allow for a wall stop or floor stop presents tripping hazard.

2.15 DOOR STOPS AND HOLDERS

A. Manufacturers:

- 1. Scheduled Manufacturer: Ives.
- 2. Acceptable Manufacturers: Burns, Trimco.

B. Provide door stops at each door leaf:

- 1. Provide wall stops wherever possible. Provide convex type where mortise type locks are used and concave type where cylindrical type locks are used.
- 2. Where a wall stop cannot be used, provide universal floor stops for low or high rise options.
- 3. Where wall or floor stop cannot be used, provide medium duty surface mounted overhead stop.

2.16 THRESHOLDS, SEALS, DOOR SWEEPS, AUTOMATIC DOOR BOTTOMS, AND GASKETING

A. Manufacturers:

- 1. Scheduled Manufacturer: Zero International.
- 2. Acceptable Manufacturers: National Guard, Reese.

B. Requirements:

- 1. Provide thresholds, weather-stripping (including door sweeps, seals, and astragals) and gasketing systems (including smoke, sound, and light) as specified and per architectural details. Match finish of other items.
- 2. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.

3. Size of thresholds:
 - a. Saddle Thresholds: 1/2 inch (13 mm) high by jamb width by door width
 - b. Bumper Seal Thresholds: 1/2 inch (13 mm) high by 5 inches (127 mm) wide by door width
4. Provide door sweeps, seals, astragals, and auto door bottoms only of type where resilient or flexible seal strip is easily replaceable and readily available.

2.17 FINISHES

- A. FINISH: BHMA 626/652 (US26D); EXCEPT:
 1. Hinges at Exterior Doors: BHMA 630 (US32D)
 2. Aluminum Geared Continuous Hinges: BHMA 628 (US28)
 3. Push Plates, Pulls, and Push Bars: BHMA 630 (US32D)
 4. Protection Plates: BHMA 630 (US32D)
 5. Overhead Stops and Holders: BHMA 630 (US32D)
 6. Door Closers: Powder Coat to Match
 7. Wall Stops: BHMA 630 (US32D)
 8. Latch Protectors: BHMA 630 (US32D)
 9. Weatherstripping: Clear Anodized Aluminum
 10. Thresholds: Mill Finish Aluminum

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Prior to installation of hardware, 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. Field verify existing doors and frames receiving new hardware and existing conditions receiving new openings. Verify that new hardware is compatible with existing door and frame preparation and existing conditions.
- C. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. 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.
 2. Custom Steel Doors and Frames: HMMA 831.
 3. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."

4. Installation Guide for Doors and Hardware: DHI TDH-007-20
 - B. Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.
 - C. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.
 - D. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.
 - E. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
 - F. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.
 - G. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.
 - H. Lock Cylinders: Install construction cores to secure building and areas during construction period.
 1. Replace construction cores with permanent cores as indicated in keying section.
 - I. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.
 - J. Door Closers: Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Mount closers so they are not visible in corridors, lobbies and other public spaces unless approved by Architect.
 - K. Closer/holders: Mount closer/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.
 - L. Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings or in equipment room, or alternate location as directed by Architect.
 - M. Thresholds: Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."
 - N. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.
 - O. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

P. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

Q. Door Bottoms and Sweeps: Apply to bottom of door, forming seal with threshold when door is closed.

3.03 FIELD QUALITY CONTROL

A. Architectural Hardware Consultant: Engage qualified independent Architectural Hardware Consultant to perform inspections and to prepare inspection reports.

1. Architectural Hardware Consultant will inspect door hardware and state in each report whether installed work complies with or deviates from requirements, including whether door hardware is properly installed and adjusted.

3.04 FIELD INSPECTIONS:

A. Fire Door Assembly Inspection and Testing: Provide functional testing and inspection of fire door assemblies in accordance with NFPA 80-2007/2010. Inspections shall be performed by individuals certified by Intertek as a Fire Door Assembly Inspector, using reporting forms provided by the Door and Hardware Institute (DHI). Alternatively, inspections may be performed by individuals acceptable to the Architect, who have knowledge and understanding of the operating components of the applicable door type, and who have experience in preparing written reports of testing and inspection results.

1. Schedule fire door assembly inspection within 90 days of Substantial Completion of the Project.
2. Submit a signed, written final report as specified in Paragraph 1.4: Submittals.
3. Contractor shall correct all deficiencies and schedule a reinspection of fire door assemblies which were noted as deficient on the inspection report.
4. Inspector shall reinspect fire door assemblies after repairs are made.
5. Additional reinspections which are required due to incomplete repairs will be performed by the inspector at the expense of the Contractor.

B. Provide inspection of required egress door assemblies by a qualified person in accordance with NFPA 101.

1. Schedule egress door assembly inspection within 90 days of Substantial Completion of the Project for the required openings.
2. Submit a signed, written final report as specified in Paragraph 1.03.E.2.
3. Correct all deficiencies and schedule a reinspection of egress door assemblies noted as deficient on the inspection report.
4. Inspector to reinspect required egress door assemblies after repairs are made.

3.05 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.
- B. Occupancy Adjustment: Approximately three to six months after date of Substantial Completion, Installer's Architectural Hardware Consultant must examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors and door hardware.

3.06 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 door hardware is without damage or deterioration at time of Substantial Completion.

3.07 DEMONSTRATION

- A. Provide training for Owner's maintenance personnel to adjust, operate, and maintain door hardware and door hardware finishes. Refer to Division 01 Section "Demonstration and Training."

3.08 DOOR HARDWARE SCHEDULE

- A. The intent of the hardware specification is to specify the hardware for interior and exterior doors, and to establish a type, continuity, and standard of quality. However, it is the door hardware supplier's responsibility to thoroughly review existing conditions, schedules, specifications, drawings, and other Contract Documents to verify the suitability of the hardware specified.
- B. Discrepancies, conflicting hardware, and missing items are to be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application
- C. Hardware items are referenced in the following hardware. Refer to the above-specifications for special features, options, cylinders/keying, and other requirements.
- D. Hardware Sets:

HARDWARE GROUP NO. 01

A-101 A-102 A-106 A-113 A-114

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	CLASSROOM DEAD LOCK	L463T	626	SCH
1	EA	PERMANENT CORE	MATCH EXISTING KEYING SYSTEM	626	SCH
1	EA	PUSH PLATE	8300 10" 4" X 16"	630	IVE
1	EA	PULL PLATE	8302 10" 4" X 16"	630	IVE
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP REG ST-1630	689	LCN
1	EA	TOP JAMB MTG PLATE	4040XP-18TJ SRT	689	LCN
1	EA	WEATHER STRIPPING	BY DOOR/FRAME MANUFACTURER		B/O
1	EA	DOOR SWEEP	8198AA	AA	ZER
1	EA	THRESHOLD	566A-V3-223	A	ZER

HARDWARE GROUP NO. 02

A-103

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	STOREROOM LOCK	L9080T 06N	626	SCH
1	EA	PERMANENT CORE	MATCH EXISTING KEYING SYSTEM	626	SCH
1	EA	SURFACE CLOSER	4040XP SHCUSH	689	LCN
1	EA	BLADE STOP SPACER	4040XP-61 SRT	689	LCN
1	EA	WEATHER STRIPPING	BY DOOR/FRAME MANUFACTURER		B/O
1	EA	THRESHOLD	BY DOOR/FRAME MANUFACTURER		B/O
1	EA	DOOR SWEEP	BY DOOR/FRAME MANUFACTURER		B/O

HARDWARE GROUP NO. 03

A-104 A-109 A-110

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	OFFICE W/SIM RETRACT W/ OUTSIDE INDICATOR W/ INSIDE INDICATOR	L9056T 06N L583-363 OS-OCC IS- LOC XL13-439	626	SCH
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP REG ST-1630	689	LCN
1	EA	TOP JAMB MTG PLATE	4040XP-18TJ SRT	689	LCN
1	EA	WEATHER STRIPPING	BY DOOR/FRAME MANUFACTURER		B/O
1	EA	DOOR SWEEP	8198AA	AA	ZER
1	EA	THRESHOLD	566A-V3-223	A	ZER

HARDWARE GROUP NO. 04

A-105

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	STOREROOM LOCK	L9080T 06N	626	SCH
1	EA	PERMANENT CORE	MATCH EXISTING KEYING SYSTEM	626	SCH
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP REG ST-1630	689	LCN
1	EA	TOP JAMB MTG PLATE	4040XP-18TJ SRT	689	LCN
1	EA	WEATHER STRIPPING	BY DOOR/FRAME MANUFACTURER		B/O
1	EA	DOOR SWEEP	8198AA	AA	ZER
1	EA	THRESHOLD	566A-V3-223	A	ZER

HARDWARE GROUP NO. 05

A-107 A-112

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	STOREROOM LOCK	L9080T 06N	626	SCH
1	EA	PERMANENT CORE	MATCH EXISTING KEYING SYSTEM	626	SCH
1	EA	SURFACE CLOSER	4040XP RW/PA	689	LCN
1	EA	WALL STOP/HOLDER	WS40	626	IVE

HARDWARE GROUP NO. 06
A-116

PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112XY	628	IVE
1	EA	STOREROOM LOCK	L9080T 06N	626	SCH
1	EA	PERMANENT CORE	MATCH EXISTING KEYING SYSTEM	626	SCH
1	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA	BLADE STOP SPACER	4040XP-61 SRT	689	LCN
1	EA	WEATHER STRIPPING	BY DOOR/FRAME MANUFACTURER		B/O
1	EA	THRESHOLD	BY DOOR/FRAME MANUFACTURER		B/O
1	EA	DOOR SWEEP	BY DOOR/FRAME MANUFACTURER		B/O

HARDWARE GROUP NO. 07
A-115

PROVIDE EACH PR DOOR(S) WITH THE FOLLOWING:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	112XY	628	IVE
1	EA	CONST LATCHING BOLT	FB51T/FB61T AS REQ'D	630	IVE
1	EA	STOREROOM LOCK	L9080T 06N	626	SCH
1	EA	PERMANENT CORE	MATCH EXISTING KEYING SYSTEM	626	SCH
1	EA	COORDINATOR	COR X FL (MB/MBF AS REQ'D)	628	IVE
2	EA	SURFACE CLOSER	4040XP SHCUSH	689	LCN
1	EA	BLADE STOP SPACER	4040XP-61 SRT	689	LCN

END OF SECTION

SECTION 08 91 00

ALUMINUM WALL LOUVERS

1 General

1.1 Section Includes

- A. Louvers and frames.
- B. Bird screening.
- C. Blank out sheeting.

1.2 Related Sections

- A. Section 07 90 00 - Joint Sealants.
- B. Section 23 31 00 - Ductwork: Ductwork attachment to louver.

1.3 References

- A. AA - Designation System for Aluminum Finishes.
- B. ASTM B209 - Aluminum and Aluminum-Alloy Sheet and Plate.
- C. ASTM B221 - Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes.

1.4 System Performance

- A. Installed louver to permit passage of indicated air volume at 0 water penetration at 1250 feet per minute free area velocity, without blade vibration or noise, with maximum static pressure loss of 0.15 inch WG measured at 1250 feet per minute.
- B. Installed louver to permit passage of indicated air volume at 0 water penetration at 1000 feet per minute free area velocity, without blade vibration or noise, with maximum static pressure loss of 0.15 inch WG measured at 1000 feet per minute.

1.5 Submittals

- A. Provide product data on preassembled louvers describing design characteristics, maximum recommended air velocity, free area, materials, and finishes.
- B. Indicate elevations, dimensions, and tolerances; head, jamb, and sill details; blade configuration; screening; and frames.

1.6 Coordination

- A. Coordinate work of this Section with installation of masonry flashings and metal siding.
- B. Coordinate work of this Section with mechanical ductwork.

1.7 Warranty

- A. Furnish a five (5) year warranty from the manufacturer and from the installation contractor against leakage, rattling, and whistling.

2 Products

2.1 Aluminum Wall Louvers - Acceptable Manufacturers

- A. Airolite Company, Marietta, Ohio (AI).
- B. Construction Specialties (CS Group), Cranford, New Jersey (CS).
- C. Industrial Louvers, Inc., Delano, Minnesota (I).
- D. Louvers & Dampers, Inc., Florence, Kentucky (LD).
- E. Greenheck, Schofield, Wisconsin (G).
- F. Ruskin Manufacturing Company, Grandview, Missouri (R).

2.2 Materials

- A. Aluminum: ASTM B221, 6063 alloy, T5 temper, extruded shape; ASTM B209, 3003 alloy, H14 temper, sheet.
- B. Fasteners and Anchors: Stainless steel type.
- C. Finish: Kynar 500 or Hylar 5000 fluoropolymer resin coating, color as selected by the Architect.

2.3 Accessories

- A. Bird Screen: Interwoven wire mesh of aluminum, 0.063 inch diameter wire, 1/2 inch open weave, square design.
- B. Clip Angles: 1-1/2 inch by 1-1/2 inch aluminum angle, by 2 inches long, minimum two per side.
- C. Perimeter Angle: 3/4 inch by 3/4 inch by 1/8 inch aluminum angle at exterior perimeter.

2.4 Fabrication

- A. Wall Louvers: Special Shape for Dormer.
 - 1. Louver Size: As indicated, if not indicated, provide louver sized as required to satisfy the free area required by the mechanical equipment and to align with architectural design intent.

2. Louver Blade: Sloped at 35 degrees, minimum; drainable; minimum material thickness of 0.081 inch.
3. Louver Frame: Channel shape, drainable jambs, welded corner joints, material thickness of 0.081 inch.
4. Mullions: Concealed (if possible), aluminum, profiled to suit louver frame.
5. Sill: Material thickness of 0.063 inch; extend 1/2 inch beyond wall line; closed ends.
6. Screens: Install screen mesh in channel shaped frame with reinforced corner construction; screw to interior face of louver frame and to exterior face of penthouse frame.

2.5 Wall Louvers - 6 Inches Thick, High Performance

- A. Type K6776 (Al).
- B. Model A6177 (CS).
- C. Model 653-XP (I).
- D. Model IEL-67 (LD).
- E. Model ESD-603 (G).
- F. Type ELF 6350DMP (R).

3 Execution

3.1 Inspection

- A. Verify that prepared openings and flashings are ready to receive work and opening dimensions are as indicated on shop drawings.
- B. Beginning of installation means acceptance of existing conditions.

3.2 Installation

- A. Install louver and penthouse assembly in accordance with manufacturer's instructions.
- B. Install louvers level and plumb.
- C. Secure louvers in opening framing with concealed fasteners.
 1. Make wall louvers removable where indicated.
- D. Align louver assembly to ensure moisture is shed from flashings and diversion of moisture to exterior.
- E. Install bird screening to louver. Make exterior screens removable.

3.3 Cleaning

- A. Clean surfaces and components.

END OF SECTION