ADDENDUM
NO. 03

February 19, 2026

Edwardsburg Public Schools – Middle School and High School Mechanical Upgrades

Middle School
69230 Section Street
Edwardsburg, MI 49112

High School
69358 Section Street
Edwardsburg, MI 49112

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 16, 2026, by TowerPinkster. 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 3-6 through ADD 3-3, and TowerPinkster Addendum No. 03 Middle School Mechanical Upgrades, consisting on 60 pages, and TowerPinkster Addendum No. 03 High School Mechanical Upgrades, consisting of 48 pages.

A. SPECIFICATION SECTION 00 00 20 – TABLE OF CONTENTS

Add

1. 05 12 00 Structural Metals Framing
2. 05 50 00 Metal Fabrications
3. 28 46 00 Fire Detection

B. SPECIFICATION SECTION 00 43 50 - SUBCONTRACTORS AND PRODUCTS LIST

Add the following specification sections to **Bid Category No. 01 General Trades**

1. 05 12 00 Structural Metals Framing
2. 05 50 00 Metal Fabrications

Add the following specification sections to **Bid Category No. 04 Electrical**

1. 28 46 00 Fire Detection and Alarm

C. SPECIFICATION SECTION 01 12 00 – MULTIPLE CONTRACT SUMMARY

A. BID CATEGORY NO. 01 GENERAL TRADES

Add the following Specification Section(s)

1. 05 12 00 Structural Metals Framing
2. 05 50 00 Metal Fabrications

Add the following clarification(s)

1. Clarification No. 08: **All Bid Categories** must submit individual bids as well as a combined bid if they are combining more than one bid category with their bid. Refer to section 00 10 00 Instructions to Bidders, 1.20 Combined Bids.

2. Clarification No. 09: **All Bid Categories** shall provide separate permits and inspections for the Middle School and High School due to phasing and multiple building addresses. Skillman will pull the General Building Permits.

3. Clarification No. 10: **Bid Category No. 01 General Trades** shall provide black ceiling grid in the corridors to match the existing grid in the corridors.

4. Clarification No. 11: **Bid Category No. 03 Mechanical** shall be responsible for all existing louver removal. **Bid Category No. 03 Mechanical** shall coordinate sizes with **Bid Category No. 01 General Trades** to cut and modify the mechanical openings as required. This also includes any other openings shown on the Architectural and Mechanical drawings (horizontal uni-vents, vertical uni-vents, etc.) **Bid Category No. 03 Mechanical** shall physically layout/mark out all openings for the General Trades contractor.

5. Clarification No. 12: **Bid Category No. 01 General Trades** shall provide all CMU, Brick, and Drywall patching, including anything shown on Plumbing, Mechanical, and Electrical drawings.

6. Clarification No. 13: **Bid Category No. 01 General Trades** shall provide plastic and a Ramboard equivalent to cover the Middle School and High School Gym floor. **All Bid Categories** shall provide additional floor protection as needed for additional equipment or heavy weight protection.

7. Clarification No. 14: **Bid Category No. 01 General Trades** shall provide all window film shown on the architectural plans (note No. 07).

8. Clarification No. 15: **Bid Category No. 01 General Trades** shall remove and safely store the existing exterior doors and storefront frame (approx. 20' wide x 10' tall) that is adjacent to the Middle School Boiler Room C111. In addition, remove and reinstall the existing mullion for the one interior double door opening going into the Gym across from the Boiler Room C111 for Mechanical equipment access. **No. 01 General Trades** shall also install a temporary plywood wall and plywood double door for the removed exterior opening during the Summer construction months. Reinstall the frames, doors, and mullions upon completion and Construction Manager's direction.

9. Clarification No. 16: **Bid Category No. 01 General Trades** shall provide one dumpster for cardboard disposal for all contractors to use during construction (May-August, 2026 and 2027). **All Bid Categories** shall break down boxes for disposal.

10. Clarification No. 17: **Bid Category No. 01 General Trades** shall include a $10,000 Allowance into their base bid, separate from their identified contingency allowance, for additional concrete housekeeping or equipment pads that are not shown on the drawings.

11. Clarification No. 18: **Bid Category No. 01 General Trades** shall include an allowance of 100 labor hours, separate from their contingency allowance, that the Construction Manager can use for misc. cleaning or other basic labor activities.

B. BID CATEGORY NO. 02 PLUMBING

Add the following clarification(s)

1. Clarification No. 04: **All Bid Categories** must submit individual bids as well as a combined bid if they are combining more than one bid category with their bid. Refer to section 00 10 00 Instructions to Bidders, 1.20 Combined Bids.

2. Clarification No. 05: **All Bid Categories** shall provide separate permits and inspections for the Middle School and High School due to phasing and multiple building addresses. Skillman will pull the General Building Permits.

3. Clarification No. 06: **Bid Category No. 01 General Trades** shall provide plastic and a Ramboard equivalent to cover the Middle School and High School Gym floor. **All Bid Categories** shall provide additional floor protection as needed for additional equipment or heavy weight protection.

4. Clarification No. 07: **Bid Category No. 02 Plumbing** shall include cutting, caping, and abandoning all Tunnel piping as indicated on the drawings.

5. Clarification No. 08: All domestic water corridor pipe chases/metal enclosures will be provided by **Bid Category No. 02 Plumbing** and must be pre-finished with shop drawings and samples approved prior to installation.

C. BID CATEGORY NO. 03 MECHANICAL

Add the following clarification(s)

1. Clarification No. 08: **All Bid Categories** must submit individual bids as well as a combined bid if they are combining more than one bid category with their bid. Refer to section 00 10 00 Instructions to Bidders, 1.20 Combined Bids.

2. Clarification No. 09: **All Bid Categories** shall provide separate permits and inspections for the Middle School and High School due to phasing and multiple building addresses. Skillman will pull the General Building Permits.

3. Clarification No. 10: **Bid Category No. 03 Mechanical** shall be responsible for all existing louver removal. **Bid Category No. 03 Mechanical** shall coordinate sizes with **Bid Category No. 01 General Trades** to cut and modify the mechanical openings as required. This also includes any other openings shown on the Architectural and Mechanical drawings (horizontal uni-vents, vertical uni-vents, etc.) **Bid Category No. 03 Mechanical** shall

physically layout/mark out all openings for the General Trades contractor.

4. Clarification No. 11: **Bid Category No. 01 General Trades** shall provide plastic and a Ramboard equivalent to cover the Middle School and High School Gym floor. **All Bid Categories** shall provide additional floor protection as needed for additional equipment or heavy weight protection.

5. Clarification No. 12: The ceiling mounted fans shall be provided by **Bid Category No. 03 Mechanical** and **Bid Category No. 04 Electrical** shall provide power and final connections to them.

6. Clarification No. 13: **Bid Category No. 03 Mechanical** shall be responsible for removing and putting back ceiling tiles for all temperature control work.

7. Clarification No. 14: **Bid Category No. 03 Mechanical** shall provide all pipe chases/metal enclosures in the classrooms and must be pre-finished with shop drawings and samples approved prior to installation.

8. Clarification No. 15: **Bid Category No. 03 Mechanical** shall provide and install the double layer drywall and insulation detail at the roof curbs as shown on Detail No. 01 on A102.

9. Clarification No. 16: **Bid Category No. 03 Mechanical** shall leave all existing controls intact and operational until the new systems are tested and functioning.

D. BID CATEGORY NO. 04 ELECTRICAL

Add the following Specification Section

1. 28 4600 Fire Detection and Alarm

Add the following clarification(s)

1. Clarification No. 08 **All Bid Categories** must submit individual bids as well as a combined bid if they are combining more than one bid category with their bid. Refer to section 00 10 00 Instructions to Bidders, 1.20 Combined Bids.

2. Clarification No. 09 **All Bid Categories** shall provide separate permits and inspections for the Middle School and High School due to phasing and multiple building addresses. Skillman will pull the General Building Permits.

3. Clarification No. 10: **Bid Category No. 01 General Trades** shall provide plastic and a Ramboard equivalent to cover the Middle School and High School Gym floor. **All Bid Categories** shall provide additional floor protection as needed for additional equipment or heavy weight protection.

4. Clarification No. 11: The ceiling mounted fans shall be provided by **Bid Category No. 03 Mechanical** and **Bid Category No. 04 Electrical** shall provide power and final connections to them.

D. SPECIFICATION SECTION 01 23 00 - ALTERNATES

1. Replace section with attached, removed Middle School Alternate No. 01.
2. Replace section with attached, removed High School Alternate No. 03

E. Refer to the attached Request For Information summary, Pre-Bid RFI No. 01 through 25 are included

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ADDENDUM NO. 3

DATE OF ISSUANCE: **February 17, 2026**

PROJECT: **Edwardsburg Middle School – Mechanical Upgrades**
69410 Section St.
Edwardsburg, MI 49112

OWNER: **Edwardsburg Public Schools**

ARCHITECT'S PROJECT NO.: 21-201.041

ORIGINAL BID ISSUE DATE: January 16, 2026

SCOPE OF WORK
This Addendum includes changes to, or clarifications of, the original Bidding Documents and any previously issued addenda, and shall be included in the Bid. All of these Addendum items form a part of the Contract Documents. The Bidder shall acknowledge receipt of this Addendum in the appropriate space provided on the Bid Form. Failure to do so may result in disqualification of the Bid.

DOCUMENTS INCLUDED IN THIS ADDENDUM
This Addendum includes **2** pages of text and the following documents:

- Bidding Documents: **None**
- Contract Conditions: **None**
- Specification Sections: **00 0110, 01 2300, 05 1200, 05 5000, 08 7100, 28 4600**
- Drawings: **G 001, SG 001, S 201C, AD 101, A 101, A 321, ED 101C, ED 201A, ED 201B, ED 201C, ED 201D, E 101C, E 201A, E 201B, E 201C, E 201D, E 420, P 101, P 501**

CHANGES TO PREVIOUSLY ISSUED ADDENDA

None.

CHANGES TO BIDDING REQUIREMENTS

None.

CHANGES TO CONTRACT CONDITIONS

None.

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CHANGES TO SPECIFICATIONS

ADD-3 Item No. S-1 - Table of Contents Spec Section

Provided updated table of contents with new spec sections.

Removed spec section 07 2500 weather barriers

ADD-3 Item No. S-2 - Added specification sections for Structural and Electrical

Refer to Specification Section: 05 1200 Structural Metals Framing

Refer to Specification Section: 05 5000 Metal Fabrications

Refer to Specification Section 28 4600 Fire Detection and Alarm

ADD-3 Item No. S-3 - Modified Door Hardware Specification

Refer to Specification Section 087100 Door hardware

ADD-3 Item No. S-4 - Removed Alternate 01 from Spec Section

Refer to Specification Section 01 2300 Alternates for modifications

CHANGES TO DRAWINGS

ADD-3 Item No. D-1 - Add door Demo and replace for room C112

Refer to AD 101, A 101, A 321, ED 101C, E 101C for door and wall demolition and new work.

Refer to S 201C for steel lintel.

ADD-3 Item No. D-2 - Lighting Alternate Clarifications

Added a note describing the base bid work for lighting. Renamed the lighting drawings to clarify they are part of the alternate. Refer to drawings ED 201A, ED 201B, ED 201C, ED 201D for the base bid lighting work note. Refer to drawings E 201A, E 201B, E 201C, E 201D, E 420 for alternate Lighting work. Refer to G 001 for updated drawing index.

ADD-3 Item No. D-3 - Plumbing Water Filtration System

Added domestic water filtration system equipment to the mechanical room and keynote on P 101. Added schedule and detail on P 501.

END OF ADDENDUM.

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28 4600 - FIRE DETECTION AND ALARM

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SECTION 01 2300 - ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for alternates.

1.2 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if the Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternates into the Work. No other adjustments are made to the Contract Sum.

1.3 PROCEDURES

A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Execute accepted alternates under the same conditions as other work of the Contract.

C. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Middle School

1. Alternate No. 01
   ~~a. Base Bid: Remove and salvage and safely store ceiling tiles and grid to be reinstalled as indicated on drawings.~~
   ~~b. Alternate: Provide new 2x2 ceiling tile and grid as indicated on drawings.~~

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2. Alternate No. 02
   a. Base Bid: Remove and salvage and safely store light fixtures to be reinstalled as indicated on drawings.
   b. Alternate: Provide new light fixtures and controls as indicated on drawings.

B. High School

1. Alternate No. 01 – Not Used
   ~~a. Base Bid: Remove and salvage and safely store ceiling tiles and grid to be reinstalled as indicated on drawings.~~
   ~~b. Alternate: Provide new 2x2 ceiling tile and grid as indicated on drawings.~~

2. Alternate No. 02
   a. Base Bid: Remove and salvage and safely store light fixtures to be reinstalled as indicated on drawings.
   b. Alternate: Provide new light fixtures and controls as indicated on drawings.

END OF SECTION 01 2300

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SECTION 05 1200 - STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Structural steel.

B. Related Requirements:

1. Section 05 5000 "Metal Fabrications" for steel lintels and shelf angles not attached to structural-steel frame miscellaneous steel fabrications and other steel items not defined as structural steel.
2. Section 09 9113 "Exterior Painting" and Section 09 9123 "Interior Painting" for surface-preparation and priming requirements.

1.2 DEFINITIONS

A. Structural Steel: Elements of the structural frame indicated on Drawings and as described in AISC 303, "Code of Standard Practice for Steel Buildings and Bridges."

B.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: Show fabrication of structural-steel components.

1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
2. Include embedment Drawings.
3. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain.
4. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pretensioned and slip-critical, high-strength bolted connections.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For fabricator.

B. Welding certificates.

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C. Mill test reports for structural steel, including chemical and physical properties.

1.5 QUALITY ASSURANCE

A. Fabricator Qualifications: A qualified fabricator that participates in the AISC Quality Certification Program and is designated an AISC-Certified Plant, Category STD.

B. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

C. Comply with applicable provisions of the following specifications and documents:

1. AISC 303.
2. AISC 360.
3. RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration.

1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

B. Store fasteners in a protected place in sealed containers with manufacturer's labels intact.

1. Clean and relubricate bolts and nuts that become dry or rusty before use.

PART 2 - PRODUCTS

2.1 STRUCTURAL-STEEL MATERIALS

A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

B. W-Shapes: ASTM A 992/A 992M.

C. Channels, Angles[**, M**] [**, S**]-Shapes: ASTM A 36/A 36M.

D. Plate and Bar: ASTM A 36/A 36M.

E. Cold-Formed Hollow Structural Sections: ASTM A 500/A 500M, Grade C, structural tubing.

F. Welding Electrodes: Comply with AWS requirements.

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2.2 BOLTS, CONNECTORS, AND ANCHORS

A. High-Strength Bolts, Nuts, and Washers: ASTM A 325, Type 1, heavy-hex steel structural bolts; ASTM A 563, Grade C, heavy-hex carbon-steel nuts; and ASTM F 436, Type 1, hardened carbon-steel washers; all with plain finish.

B. Shear Connectors: ASTM A 108, Grades 1015 through 1020, headed-stud type, cold-finished carbon steel; AWS D1.1/D1.1M, Type B.

C. Threaded Rods: ASTM A 36/A 36M.

1. Nuts: ASTM A 563 [**heavy-**]hex carbon steel.
2. Washers: ASTM A 36/A 36M carbon steel.
3. Finish: Hot-dip zinc coating, ASTM A 153/A 153M, Class C.

2.3 PRIMER

A. Primer: Comply with Section 09 9113 "Exterior Painting" and Section 09 9123 "Interior Painting."

B. Galvanizing Repair Paint: MPI#18, MPI#19, or SSPC-Paint 20.

2.4 FABRICATION

A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate according to AISC 303, "Code of Standard Practice for Steel Buildings and Bridges," and to AISC 360.

1. Identify high-strength structural steel according to ASTM A 6/A 6M and maintain markings until structural steel has been erected.
2. Mark and match-mark materials for field assembly.
3. Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.
4. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.
5. Finishing: Accurately finish ends of columns and other members transmitting bearing loads.

B. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1/D1.1M and manufacturer's written instructions.

2.5 SHOP PRIMING

A. Shop prime steel surfaces except the following:

1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches.
2. Surfaces to be field welded.
3. Surfaces of high-strength bolted, slip-critical connections.
4. Surfaces to receive sprayed fire-resistive materials (applied fireproofing).

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5. Galvanized surfaces.

B. Surface Preparation: Clean surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces according to the following specifications and standards:

1. SSPC-SP 2, "Hand Tool Cleaning."

C. Priming: Immediately after surface preparation, apply primer according to manufacturer's written instructions and at rate recommended by SSPC to provide a minimum dry film thickness of 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.

2.6 GALVANIZING

A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel according to ASTM A 123/A 123M.

1. Fill vent and drain holes that are exposed in the finished Work unless they function as weep holes, by plugging with zinc solder and filing off smooth.
2. Galvanize structural steel that will be exposed to the exterior at project completion.

2.7 SOURCE QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform shop tests and inspections.

1. Provide testing agency with access to places where structural-steel work is being fabricated or produced to perform tests and inspections.

B. Bolted Connections: Inspect and test shop-bolted connections according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

C. Welded Connections: Visually inspect shop-welded connections according to AWS D1.1/D1.1M and the following inspection procedures, at testing agency's option:

1. Liquid Penetrant Inspection: ASTM E 165.
2. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration are not accepted.
3. Ultrasonic Inspection: ASTM E 164.
4. Radiographic Inspection: ASTM E 94.

D. Prepare test and inspection reports.

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PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify, with certified steel erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 ERECTION

A. Set structural steel accurately in locations and to elevations indicated and according to AISC 303 and AISC 360.

B. Maintain erection tolerances of structural steel within AISC 303, "Code of Standard Practice for Steel Buildings and Bridges."

C. Do not use thermal cutting during erection.

D. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.

3.3 FIELD CONNECTIONS

A. High-Strength Bolts: Install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for type of bolt and type of joint specified.

1. Joint Type: Snug tightened unless indicated as slip critical.

B. Weld Connections: Comply with AWS D1.1/D1.1M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.

1. Comply with AISC 303 and AISC 360 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds.

3.4 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:

1. Verify structural-steel materials and inspect steel frame joint details.
2. Verify weld materials and inspect welds.
3. Verify connection materials and inspect high-strength bolted connections.
4. Perform special inspections in accordance with requirements of the 2021 "Michigan Building Code and ACI 360"

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B. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

C. Bolted Connections: Inspect and test bolted connections according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

D. Welded Connections: Visually inspect field welds according to AWS D1.1/D1.1M.

1. In addition to visual inspection, test and inspect field welds according to AWS D1.1/D1.1M and the following inspection procedures, at testing agency's option:

a. Liquid Penetrant Inspection: ASTM E 165.
b. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration are not accepted.
c. Ultrasonic Inspection: ASTM E 164.
d. Radiographic Inspection: ASTM E 94.

E. In addition to visual inspection, test and inspect field-welded shear connectors according to requirements in AWS D1.1/D1.1M for stud welding and as follows:

1. Perform bend tests if visual inspections reveal either a less-than-continuous 360-degree flash or welding repairs to any shear connector.
2. Conduct tests according to requirements in AWS D1.1/D1.1M on additional shear connectors if weld fracture occurs on shear connectors already tested.

END OF SECTION 05 1200

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SECTION 05 5000 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Miscellaneous framing and supports.
2. Steel framing and supports for countertops.
3. Steel framing and supports for mechanical and electrical equipment.
4. Loose bearing and leveling plates.

B. Products furnished, but not installed, under this Section include the following:

1. Loose steel lintels.
2. Steel weld plates and angles for casting into concrete for applications where they are not specified in other Sections.
3. Anchor bolts, steel pipe sleeves, slotted-channel inserts, and wedge-type inserts indicated to be cast into concrete or built into unit masonry.

C. Related Requirements:

1. Section 04 2000 "Unit Masonry" for installing loose lintels, anchor bolts, and other items built into unit masonry.
2. Section 05 1200 "Structural Steel Framing" for steel framing, supports, elevator machine beams, hoist beams, divider beams, door frames, and other steel items attached to the structural-steel framing.
3. Section 07 7200 "Roof Accessories" for manufactured metal roof walkways and metal roof stairs.

1.2 COORDINATION

A. Coordinate installation of metal fabrications that are anchored to or that receive other work. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

1.3 ACTION SUBMITTALS

A. Product Data:

1. Fasteners.
2. Shop primers.

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1.4 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel in accordance with the following welding codes:

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

1.5 FIELD CONDITIONS

A. Field Measurements: Verify actual locations of walls, floor slabs, decks, and other construction contiguous with metal fabrications by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.2 METALS

A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

B. Steel Plates, Shapes, and Bars: ASTM A36/A36M.

C. Stainless Steel Sheet, Strip, and Plate: ASTM A240/A240M or ASTM A666, Type 304.

D. Stainless Steel Bars and Shapes: ASTM A276/A276M, Type 304.

E. Steel Tubing: ASTM A500/A500M, cold-formed steel tubing.

F. Steel Pipe: ASTM A53/A53M, Standard Weight (Schedule 40) unless otherwise indicated.

G. Slotted Channel Framing: Cold-formed metal box channels (struts) complying with MFMA-4.

1. Size of Channels: 1-5/8 by 1-5/8 inches.
2. Galvanized Steel: ASTM A653/A653M, structural steel, Grade 33, with G90 coating; 0.079-inch nominal thickness.

H. Aluminum Plate and Sheet: ASTM B209, Alloy 6061-T6.

I. Aluminum Extrusions: ASTM B221, Alloy 6063-T6.

J. Aluminum-Alloy Rolled Tread Plate: ASTM B632/B632M, Alloy 6061-T6.

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K. Aluminum Castings: ASTM B26/B26M, Alloy 443.0-F.

L. Bronze Extrusions: ASTM B455, Alloy UNS No. C38500 (extruded architectural bronze).

M. Bronze Castings: ASTM B584, Alloy UNS No. C83600 (leaded red brass) or UNS No. C84400 (leaded semired brass).

N. Nickel Silver Extrusions: ASTM B151/B151M, Alloy UNS No. C74500.

O. Nickel Silver Castings: ASTM B584, Alloy UNS No. C97600 (20 percent leaded nickel bronze).

2.3 MISCELLANEOUS MATERIALS

A. Shop Primers: Provide primers that comply with Section 09 9113 "Exterior Painting." and Section 09 9123 "Interior Painting."

B. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.

2.4 FABRICATION, GENERAL

A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

D. Form exposed work with accurate angles and surfaces and straight edges.

E. Weld corners and seams continuously to comply with the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) fasteners unless otherwise indicated. Locate joints where least conspicuous.

G. Fabricate seams and other connections that are exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

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H. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.

I. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.

J. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors, 1/8 by 1-1/2 inches, with a minimum 6-inch embedment and 2-inch hook, not less than 8 inches from ends and corners of units and 24 inches o.c., unless otherwise indicated.

2.5 MISCELLANEOUS FRAMING AND SUPPORTS

A. General: Provide steel framing and supports not specified in other Sections as needed to complete the Work.

B. Fabricate units from steel shapes, plates, and bars of welded construction unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction.

1. Fabricate units from slotted channel framing where indicated.
2. Furnish inserts for units installed after concrete is placed.

C. Galvanize miscellaneous framing and supports where indicated.

D. Prime miscellaneous framing and supports with zinc-rich primer where indicated.

2.6 MISCELLANEOUS STEEL TRIM

A. Unless otherwise indicated, fabricate units from steel shapes, plates, and bars of profiles shown with continuously welded joints and smooth exposed edges. Miter corners and use concealed field splices where possible.

B. Provide cutouts, fittings, and anchorages as needed to coordinate assembly and installation with other work.

1. Provide with integrally welded steel strap anchors for embedding in concrete or masonry construction.

C. Galvanize and prime exterior miscellaneous steel trim.

D. Prime exterior miscellaneous steel trim with zinc-rich primer.

2.7 LOOSE BEARING AND LEVELING PLATES

A. Provide loose bearing and leveling plates for steel items bearing on masonry or concrete construction. Drill plates to receive anchor bolts and for grouting.

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2.8 LOOSE STEEL LINTELS

A. Fabricate loose steel lintels from steel angles and shapes of size indicated for openings and recesses in masonry walls and partitions at locations indicated. Fabricate in single lengths for each opening unless otherwise indicated. Weld adjoining members together to form a single unit where indicated.

B. Size loose lintels to provide bearing length at each side of openings equal to one-twelfth of clear span, but not less than 8 inches unless otherwise indicated.

C. Galvanize loose steel lintels located in exterior walls.

2.9 STEEL WELD PLATES AND ANGLES

A. Provide steel weld plates and angles not specified in other Sections, for items supported from concrete construction as needed to complete the Work. Provide each unit with no fewer than two integrally welded steel strap anchors for embedding in concrete.

2.10 GENERAL FINISH REQUIREMENTS

A. Finish metal fabrications after assembly.

B. Finish exposed surfaces to remove tool and die marks and stretch lines, and to blend into surrounding surface.

2.11 STEEL AND IRON FINISHES

A. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A153/A153M for steel and iron hardware and with ASTM A123/A123M for other steel and iron products.

1. Do not quench or apply post galvanizing treatments that might interfere with paint adhesion.

B. Preparation for Shop Priming Galvanized Items: After galvanizing, thoroughly clean galvanized surfaces of grease, dirt, oil, flux, and other foreign matter, and treat with metallic phosphate process.

C. Shop prime iron and steel items not indicated to be galvanized unless they are to be embedded in concrete, sprayed-on fireproofing, or masonry, or unless otherwise indicated.

1. Shop prime with primers specified in Section 09 9113 "Exterior Painting" and Section 09 9123 "Interior Painting" unless indicated otherwise.

D. Preparation for Shop Priming: Prepare surfaces to comply with SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."

E. Shop Priming: Apply shop primer to comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.

1. Stripe paint corners, crevices, bolts, welds, and sharp edges.

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PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

C. Field Welding: Comply with the following requirements:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors.

E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

3.2 INSTALLATION OF MISCELLANEOUS FRAMING AND SUPPORTS

A. General: Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings.

B. Anchor supports for securely to, and rigidly brace from, building structure.

END OF SECTION 05 5000

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SECTION 08 7100 – DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Mechanical door hardware.
2. Field verification, preparation and modification of existing doors and frames to receive new door hardware.

B. Section excludes:

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

C. Related Sections:

1. Division 01 “General Requirements” sections for Allowances, Alternates, Owner Furnished Contractor Installed, Project Management and Coordination.
2. Division 06 Section “Rough Carpentry”
3. Division 06 Section "Finish Carpentry”
4. Division 07 Section “Joint Sealants” for sealant requirements applicable to threshold installation specified in this section.
5. Division 08 Sections:
   a. “Metal Doors and Frames”
   b. “Flush Wood Doors”
   c. “Stile and Rail Wood Doors”

6. Division 09 sections for touchup, finishing or refinishing of existing openings modified by this section.

1.2 REFERENCES

A. UL, LLC

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

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3. Keying Systems and Nomenclature
4. Installation Guide for Doors and Hardware

C. NFPA – National Fire Protection Association

1. NFPA 70 – National Electric Code
2. NFPA 80 – 2016 Edition – Standard for Fire Doors and Other Opening Protectives
3. NFPA 101 – Life Safety Code
4. NFPA 105 – Smoke and Draft Control Door Assemblies
5. NFPA 252 – Fire Tests of Door Assemblies

D. ANSI - American National Standards Institute

1. ANSI A117.1 – 2017 Edition – Accessible and Usable Buildings and Facilities
2. ANSI/BHMA A156.1 - A156.29, and ANSI/BHMA A156.31 - Standards for Hardware and Specialties
3. ANSI/BHMA A156.28 - Recommended Practices for Keying Systems
4. ANSI/WDMA I.S. 1A - Interior Architectural Wood Flush Doors
5. ANSI/SDI A250.8 - Standard Steel Doors and Frames

1.3 SUBMITTALS

A. General:

1. Submit in accordance with Conditions of Contract and Division 01 Submittal Procedures.
2. Prior to forwarding submittal:
   a. Comply with procedures for verifying existing door and frame compatibility for new hardware, as specified in PART 3, “EXAMINATION” article, herein.
   b. Review drawings and Sections from related trades to verify compatibility with specified hardware.
   c. 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: Submit 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 of requested door 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.

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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.

4. Key Schedule:
a. After Keying Conference, provide keying schedule that includes levels of keying, explanations 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. 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.

C. Informational Submittals:

1. Provide Qualification Data for Supplier, Installer and Architectural Hardware Consultant.
2. Provide Product Data:
a. Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.
b. Include warranties for specified door hardware.

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. Final approved hardware schedule edited to reflect conditions as installed.
d. Final keying schedule
e. Copy of warranties including appropriate reference numbers for manufacturers to identify project.

E. Inspection and Testing:

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1. Submit written reports to the Owner and Authority Having Jurisdiction (AHJ) of the results of functional testing and inspection for:
   a. fire door assemblies, in compliance with NFPA 80.
   b. required egress door assemblies, in compliance with NFPA 101.

1.4 QUALITY ASSURANCE

A. Qualifications and Responsibilities:

1. Supplier: Recognized architectural hardware supplier with a minimum of 5 years documented experience supplying both mechanical and electromechanical door hardware similar in quantity, type, and quality to that indicated for this Project. Supplier to be recognized as a factory direct distributor by the manufacturer of the primary materials with a warehousing facility in the Project's vicinity. Supplier to have on staff, a certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.
2. Installer: Qualified tradesperson skilled in the application of commercial grade hardware with experience installing door hardware similar in quantity, type, and quality as indicated for this Project.
3. Architectural Hardware Consultant: 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:
   a. For door hardware: DHI certified AHC or DHC.
   b. Can provide installation and technical data to Architect and other related subcontractors.
   c. Can inspect and verify components are in working order upon completion of installation.

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

B. Certifications:

1. Fire-Rated Door Openings:
   a. Provide door hardware for fire-rated openings that complies with NFPA 80 and requirements of authorities having jurisdiction.
   b. Provide only items of door hardware that are listed products tested by UL LLC, Intertek Testing Services, or other testing and inspecting organizations acceptable to authorities having jurisdiction for use on types and sizes of doors indicated, based on testing at positive pressure and according to NFPA 252 or UL 10C and in compliance with requirements of fire-rated door and door frame labels.

2. Smoke and Draft Control Door Assemblies:
   a. Provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105
   b. Comply with the maximum air leakage of 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at tested pressure differential of 0.3-inch wg (75 Pa) of water.

3. Accessibility Requirements:
   a. Comply with governing accessibility regulations cited in "REFERENCES" article 08 7100, 1.02.D3 herein for door hardware on doors in an accessible route. This project must comply with all Federal Americans with Disability Act regulations and all Local Accessibility Regulations.

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C. Pre-Installation Meetings

1. Keying Conference
   a. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:
      1) Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
      2) Preliminary key system schematic diagram.
      3) Requirements for key control system.
      4) Address for delivery of keys.

2. Pre-installation Conference
   a. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
   b. Inspect and discuss preparatory work performed by other trades.
   c. Review required testing, inspecting, and certifying procedures.
   d. Review questions or concerns related to proper installation and adjustment of door hardware.

D. Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site. Promptly replace products damaged during shipping.

E. 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. Deliver each article of hardware in manufacturer’s original packaging.

F. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.

G. 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.

H. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.

I. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

1.5 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.

C. Security: Coordinate installation of door hardware and keying with Owner's security consultant.

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D. Existing Openings: Where existing doors, frames and/or hardware are to remain, field verify existing functions, conditions and preparations and coordinate to suit opening conditions and to provide proper door operation.

1.6 WARRANTY

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

1. Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.
2. Warranty Period: Beginning from date of Substantial Completion, for durations indicated in manufacturer's published listings.

a. Mechanical Warranty
1) Locks
a) <u>Schlage L Series: 10 years</u>
2) Exit Devices
a) Von Duprin: 10 years
3) Closers
a) LCN 4000 Series: 30 years

1.7 MAINTENANCE

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

B. Turn over unused materials to Owner for maintenance purposes.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. The Owner requires use of certain products for their unique characteristics and project suitability to ensure 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 alternate manufacturers and/or products other than those listed as "Scheduled Manufacturer" or "Acceptable Manufacturers" in the individual article for the product category are only to be considered by official substitution request in accordance in section 01 2500.

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.

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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.

2.2 MATERIALS

A. Fabrication

1. Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. provide screws according to manufacturer's recognized installation standards for application intended.
2. Finish exposed 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 wherever possible for hardware units exposed when door is closed. Coordinate with "Metal Doors and Frames", "Flush Wood Doors", "Stile and Rail Wood Doors" to ensure proper reinforcements. Advise the Architect where visible fasteners, such as thru bolts, are required.

B. Modification and Preparation of Existing Doors: Where existing door hardware is indicated to be removed and reinstalled.

1. Provide necessary fillers, Dutchmen, reinforcements, and fasteners, compatible with existing materials, as required for mounting new opening hardware and to cover existing door and frame preparations.
2. Use materials which match materials of adjacent modified areas.
3. When modifying existing fire-rated openings, provide materials permitted by NFPA 80 as required to maintain fire-rating.

C. 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.

2.3 HINGES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:

a. Ives 5BB series

2. Acceptable Manufacturers and Products:
a. McKinney TB series
b. Best FBB series

B. Requirements:

1. Provide hinges conforming to ANSI/BHMA A156.1.
2. Provide five knuckle, ball bearing hinges.
3. 1-3/4 inch thick doors, up to and including 36 inches wide:
a. Exterior: Standard weight, bronze or stainless steel, 4-1/2 inches high

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b. Interior: Standard weight, steel, 4-1/2 inches high

4. 1-3/4 inch thick doors over 36 inches wide:
   a. Exterior: Heavy weight, bronze/stainless steel, 5 inches high
   b. Interior: Heavy weight, steel, 5 inches high

5. 2 inches or thicker doors:
   a. Exterior: Heavy weight, bronze or stainless steel, 5 inches high
   b. Interior: Heavy weight, steel, 5 inches high

6. Adjust hinge width for door, frame, and wall conditions to allow proper degree of opening.
7. Provide three hinges per door leaf for doors 90 inches or less in height, and one additional hinge for each 30 inches of additional door height.
8. 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.
9. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
   a. Steel Hinges: Steel pins
   b. Non-Ferrous Hinges: Stainless steel pins
   c. Out-Swinging Exterior Doors: Non-removable pins
   d. Out-Swinging Interior Lockable Doors: Non-removable pins
   e. Interior Non-lockable Doors: Non-rising pins

2.4 MORTISE LOCKS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:

a. Schlage L9000 series

2. Acceptable Manufacturers and Products:

a. Sargent 8200 series

b. Best 45H series

B. Requirements:

1. Provide mortise locks conforming to ANSI/BHMA A156.13 Series 1000, Grade 1, and UL Listed for 3-hour fire doors.
2. Indicators: Where specified, provide indicator window measuring a minimum 2-3/5-inch x 3/5 inch with 180-degree visibility. Provide messages color-coded using ANSI Z535 Safety Red with full text and/or symbols, as scheduled, for easy visibility. When applicable allows for lock status indication on both sides of the door.
3. Provide locks manufactured from heavy gauge steel, containing components of steel with a zinc dichromate plating for corrosion resistance.
4. Provide lock case that is multi-function and field reversible for handing without opening case. Cylinders: Refer to "KEYING" article, herein.
5. Provide locks with standard 2-3/4 inches backset with full 3/4 inch throw stainless steel mechanical anti-friction latchbolt. Provide deadbolt with full 1-inch throw, constructed of stainless steel.

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6. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.

7. 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: As indicated in sets.

2.5 EXIT DEVICES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
a. Von Duprin 98/35A series

2. Acceptable Manufacturers and Products:
a. Precision APEX 2000 series
b. Sargent 19-43-GL-80 series

B. Requirements:

1. Provide exit devices tested to ANSI/BHMA A156.3 Grade 1 and UL listed for Panic Exit or Fire Exit Hardware.
2. Cylinders: Refer to “KEYING” article, herein.
3. Provide smooth touchpad type exit devices, fabricated of brass, bronze, stainless steel, or aluminum, plated to standard architectural finishes to match balance of door hardware.
4. Touchpad must extend a minimum of one half of door width. No plastic inserts are allowed in touchpads.
5. Provide exit devices with deadlatching feature for security and for future addition of alarm kits and/or other electrified requirements.
6. Provide exit devices with weather resistant components that can withstand harsh conditions of various climates and corrosive cleaners used in outdoor pool environments.
7. Provide flush end caps for exit devices.
8. Provide exit devices with manufacturer’s approved strikes.
9. Provide exit devices cut to door width and height. Install exit devices at height recommended by exit device manufacturer, allowable by governing building codes, and approved by Architect.
10. Mount mechanism case flush on face of doors or provide spacers to fill gaps behind devices. Where glass trim or molding projects off face of door, provide glass bead kits.
11. Provide cylinder or hex-key dogging as specified at non fire-rated openings.
12. Removable Mullions: 2 inches x 3 inches steel tube. Where scheduled as keyed removable mullion, provide type that can be removed by use of a keyed cylinder, which is self-locking when re-installed.
13. Provide factory drilled weep holes for exit devices used in full exterior application, highly corrosive areas, and where noted in hardware sets.
14. Provide electrified options as scheduled.
15. Top latch mounting: double- or single-tab mount for steel doors, face mount for aluminum doors eliminating requirement of tabs, and double tab mount for wood doors.
16. Provide exit devices with optional trim designs to match other lever and pull designs used on the project.

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2.6 CYLINDERS

A. Manufacturers:

1. Scheduled Manufacturer and Product:
a. Ilco Kaba Peaks Plus

2. Acceptable Manufacturers and Products:

a. No Substitute

B. Requirements:

1. Provide interchangeable cylinders/cores to match Owner's existing key system, compliant with ANSI/BHMA A156.5; latest revision; cylinder face finished to match lockset, manufacturer's series as indicated. Refer to "KEYING" article, herein.

2.7 KEYING

A. Scheduled System:

1. Existing factory registered system:
a. Provide cylinders/cores keyed into Owner's existing factory registered keying system. Comply with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.

B. Requirements:

1. Construction Keying:
a. Replaceable Construction Cores.
1) Provide temporary construction cores replaceable by permanent cores, furnished in accordance with the following requirements.
a) 3 construction control keys
b) 12 construction change (day) keys.
2) Owner or Owner's Representative will replace temporary construction cores with permanent cores.

2. Permanent Keying:
a. Provide permanent cylinders/cores keyed by the manufacturer according to the following key system.
1) Master Keying system as directed by the Owner.
b. Forward bitting list and keys separately from cylinders, by means as directed by Owner. Failure to comply with forwarding requirements will be cause for replacement of cylinders/cores involved at no additional cost to Owner.
c. Provide keys with the following features:
1) Material: Nickel silver; minimum thickness of .107-inch (2.3mm)
2) Patent Protection: Keys and blanks protected by one or more utility patent(s).
d. Identification:
1) Mark permanent cylinders/cores and keys with applicable blind code for identification. Do not provide blind code marks with actual key cuts.

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2) Identification stamping provisions must be approved by the Architect and Owner.
3) Stamp cylinders/cores and keys with Owner's unique key system facility code as established by the manufacturer; key symbol and embossed or stamped with "DO NOT DUPLICATE" along with the "PATENTED" or patent number to enforce the patent protection.
4) Failure to comply with stamping requirements will be cause for replacement of keys involved at no additional cost to Owner.
5) Forward permanent cylinders/cores to Owner, separately from keys, by means as directed by Owner.

e. Quantity: Furnish in the following quantities.
1) Change (Day) Keys: 3 per cylinder/core that is keyed differently.
2) Permanent Control Keys: 3.
3) Master Keys: 6.
4) Key Blanks: quantity as determined in the keying meeting.

2.8 DOOR CLOSERS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. LCN 4010/4110 series

2. Acceptable Manufacturers and Products:
   a. Sargent 281 series

B. Requirements:

1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. Certify surface mounted mechanical closers to meet fifteen million (15,000,000) full load cycles. 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 diameter with 11/16-inch 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. When closers are parallel arm mounted, provide closers which mount within 6-inch top rail without use of mounting plate so that closer is not visible through vision panel from pull side.
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/BHMA 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. Through-bolt all wood door closers.

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2.9 PROTECTION PLATES

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

2. Acceptable Manufacturers:
   a. Burns
   b. Rockwood

B. Requirements:

1. Provide protection plates with a minimum of 0.050 inch thick, beveled four edges as scheduled. Furnish with sheet metal or wood screws, finished to match plates.
2. Sizes plates 2 inches (51 mm) less width of door on single doors, pairs of doors with a mullion, and doors with edge guards. Size plates 1 inch (25 mm) less width of door on pairs without a mullion or edge guards.
3. At fire rated doors, provide protection plates over 16 inches high with UL label.

2.10 DOOR STOPS AND HOLDERS

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Ives

2. Acceptable Manufacturers:
   a. Burns
   b. Rockwood

B. Provide door stops at each door leaf:

1. Provide wall stops wherever possible. Provide concave type where lockset has a push button of thumbturn.
2. Where a wall stop cannot be used, provide overhead stops.

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

A. Manufacturers:

1. Scheduled Manufacturer:
   a. Zero International

2. Acceptable Manufacturers:
   a. National Guard
   b. Reese

B. Requirements:

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1. Provide thresholds, weather-stripping, and gasketing systems 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. Provide door sweeps, seals, astragals, and auto door bottoms only of type where resilient or flexible seal strip is easily replaceable and readily available.
4. Size thresholds 1/2 inch high by 5 inches wide by door width unless otherwise specified in the hardware sets or detailed in the drawings.

2.12 FINISHES

A. Finish: Generally, Satin Chromium, BHMA 626/652 (US26D). Provide finish for each item as indicated in sets.

PART 3 - EXECUTION

3.1 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. Verify doors, frames, and walls have been properly reinforced for hardware installation.

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. Submit a list of deficiencies in writing and proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Where on-site modification of doors and frames is required:

1. Carefully remove existing door hardware and components being reused. Clean, protect, tag, and store in accordance with storage and handling requirements specified herein.
2. Field modify and prepare existing doors and frames for new hardware being installed.
3. When modifications are exposed to view, use concealed fasteners, when possible.
4. Prepare hardware locations and reinstall in accordance with installation requirements for new door hardware and with:
   a. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.
   b. Wood Doors: DHI WDHS.5 "Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors."

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c. Doors in rated assemblies: NFPA 80 for restrictions on on-site door hardware preparation.

3.3 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. Interior Architectural Wood Flush Doors: ANSI/WDMA I.S. 1A
4. Installation Guide for Doors and Hardware: DHI TDH-007-20

B. Install door hardware in accordance with NFPA 80, NFPA 101 and provide post-install inspection, testing as specified in section 1.03.E unless otherwise required to comply with governing regulations.

C. Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.

D. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.

E. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.

F. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

G. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.

H. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated.

I. Lock Cylinders:

1. Install construction cores to secure building and areas during construction period.
2. Replace construction cores with permanent cores as indicated in keying section.
3. Furnish permanent cores to Owner for installation.

J. in key control system cabinet, as determined by final keying schedule.

K. 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.

L. Thresholds: Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."

M. 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.

N. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

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

P. Door Bottoms and Sweeps: 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.

B. Occupancy Adjustment: Approximately three to six months after date of Substantial Completion, examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors and door hardware.

3.5 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items per manufacturer's instructions 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.

3.6 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 schedule. Refer to the above specifications for special features, options, cylinders/keying, and other requirements.

D. Hardware Sets:

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Hardware Group No.001

For use on Door #(s):
C111A

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	FIRE EXIT HARDWARE	98-L-NL-F-06	626	VON
1	EA	IC RIM CYLINDER	KEYED TO OWNER STANDARD - COORDINATE W/OWNER	626	KAB
1	EA	SURFACE CLOSER	4111 EDA	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CVX	630	IVE
1	EA	GASKETING	488S	BK	ZER

NOTES:
1) MATCH EXISTING LEVER STYLE OF SCHOOL. LEVER STYLE 06A SPECIFIED AS BASIS OF DESIGN.

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Hardware Group No.002

For use on Door #(s):
C111BX

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	PANIC HARDWARE	LD-9875-NL	626	VON
1	EA	IC MORTISE CYLINDER	KEYED TO OWNER STANDARD - COORDINATE W/OWNER	626	KAB
			BALANCE OF HARDWARE TO REMAIN		

NOTES:
1) FIELD VERIFY EXISTING CONDITIONS. VERIFY/COORDINATE PREPS ON EXISTING DOORS AND FRAMES TO ENSURE THE COMPATIBILITY OF NEW HARDWARE PRIOR TO ORDER OF NEW MATERIALS. PROVIDE FIELD MODIFICATIONS AND/OR NECESSARY FILLERS (PAINT TO MATCH WHERE EXISTING IS PREVIOUSLY PAINTED), REINFORCEMENTS AND FASTENERS, COMPATIBLE WITH EXISTING MATERIALS REQUIRED FOR MOUNTING NEW SPECIFIED HARDWARE AND TO COVER EXISTING DOOR AND FRAME PREPARATIONS.
2) VERIFY MORTISE CYLINDER CAM/BLOCKING RING (AS REQ'D) PRIOR TO ORDER OF MATERIALS.

Hardware Group No.003

For use on Door #(s):
C112

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	L9080L 06A	626	SCH
1	EA	IC MORTISE CYLINDER	KEYED TO OWNER STANDARD - COORDINATE W/OWNER	626	KAB
1	EA	SURFACE CLOSER	4111 SCUSH	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	GASKETING	488S	BK	ZER

NOTES:
1) MATCH EXISTING LEVER STYLE OF SCHOOL. LEVER STYLE 06A SPECIFIED AS BASIS OF DESIGN.

END OF SECTION 08 7100

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SECTION 284600 - FIRE DETECTION AND ALARM

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Removal, relocation, and addition of existing fire alarm system components, wiring, and conduit indicated.

1.2 RELATED REQUIREMENTS

A. Section 078400 - Firestopping: Materials and methods for work to be performed by this installer.

1.3 REFERENCE STANDARDS

A. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines; current edition.

B. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

C. IEEE C62.41.2 - IEEE Recommended Practice on Characterization of Surges in Low-Voltage (1000 V and less) AC Power Circuits; 2002 (Corrigendum 2012).

D. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

E. NFPA 72 - National Fire Alarm and Signaling Code; Most Recent Edition Cited by Referring Code or Reference Standard.

F. NFPA 101 - Life Safety Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.4 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Proposal Documents: Submit the following with cost/time proposal:

1. Manufacturer's detailed data sheet for each control unit, initiating device, and notification appliance.

C. Evidence of installer qualifications.

D. Evidence of maintenance contractor qualifications, if different from installer.

E. Inspection and Test Reports:

1. Submit inspection and test plan prior to closeout demonstration.
2. Submit documentation of satisfactory inspections and tests.
3. Submit NFPA 72 "Inspection and Test Form," filled out.

F. Operating and Maintenance Data: See Section 017800 for additional requirements; revise and resubmit until acceptable; have one set available during closeout demonstration:

1. Complete set of specified design documents, as approved by authority having jurisdiction.
2. Additional printed set of project record documents and closeout documents, bound or filed in same manuals.

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3. Contact information for firm that will be providing contract maintenance and trouble call-back service.
4. List of recommended spare parts, tools, and instruments for testing.
5. Replacement parts list with current prices, and source of supply.
6. Detailed troubleshooting guide and large scale input/output matrix.
7. Preventive maintenance, inspection, and testing schedule complying with NFPA 72; provide printed copy and computer format acceptable to Owner.
8. Detailed but easy to read explanation of procedures to be taken by non-technical administrative personnel in the event of system trouble, when routine testing is being conducted, for fire drills, and when entering into contracts for remodeling.

G. Project Record Documents: See Section 017800 for additional requirements; have one set available during closeout demonstration:
1. Complete set of floor plans showing actual installed locations of components, conduit, and zones.
2. "As installed" wiring and schematic diagrams, with final terminal identifications.
3. "As programmed" operating sequences, including control events by device, updated input/output chart, and voice messages by event.

H. Closeout Documents:
1. Certification by manufacturer that the system has been installed in compliance with manufacturer's installation requirements, is complete, and is in satisfactory operating condition.
2. NFPA 72 "Record of Completion", filled out completely and signed by installer and authorized representative of authority having jurisdiction.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Fire Alarm Control Units and Accessories:
1. Provide control units made by the same manufacturer as existing system.

B. Initiating Devices and Notification Appliances:
1. Provide initiating devices and notification appliances made by the same manufacturer as existing system.

C. Substitutions: See Section 016000 - Product Requirements.
1. For other acceptable manufacturers of control units specified, submit product data showing equivalent features and compliance with Contract Documents.
2. For substitution of products by manufacturers not listed, submit product data showing features and certification by Contractor that the design will comply with Contract Documents.

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2.2 FIRE ALARM SYSTEM

A. Fire Alarm System: Provide modifications and extensions to the existing automatic fire detection and alarm system:

1. Provide all components necessary, regardless of whether shown in Contract Documents or not.
2. Protected Premises: Entire building shown on drawings.
3. Comply with the following; where requirements conflict, order of precedence of requirements is as listed:
   a. ADA Standards.
   b. The requirements of the local authority having jurisdiction .
   c. Applicable local codes.
   d. Contract Documents (drawings and specifications).
   e. NFPA 101.
   f. NFPA 72; where the word "should" is used consider that provision mandatory; where conflicts between requirements require deviation from NFPA 72, identify deviations clearly on design documents.
4. Evacuation Alarm: Multiple smoke zones; allow for evacuation notification of any individual zone or combination of zones, in addition to general evacuation of entire premises.
5. General Evacuation Zones: Each smoke zone is considered a general evacuation zone unless otherwise indicated, with alarm notification in all zones on the same floor, on the floor above, and the floor below.
6. Fire Alarm Control Unit: Existing, location indicated on drawings.

B. Power Sources:

1. Primary: Dedicated branch circuits of the facility power distribution system.
2. Secondary: Storage batteries.
3. Capacity: Sufficient to operate entire system for period specified by NFPA 72.

2.3 EXISTING COMPONENTS

A. Existing Fire Alarm System: Remove existing components indicated and incorporate remaining components into new system, under warranty as if they were new; do not take existing portions of system out of service until new portions are fully operational, tested, and connected to existing system.

B. On-Premises Supervising Station: Include as part of this work all modifications necessary to existing supervising station to accommodate new fire alarm work.

C. Clearly label components that are "Not In Service."

D. Remove unused existing components and materials from site and dispose of properly.

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2.4 COMPONENTS

A. General:

1. Provide flush mounted units where installed in finish areas; in unfinished areas, surface mounted unit are acceptable.
2. Provide legible, permanent labels for each control device, using identification used in operation and maintenance data.

B. Fire Alarm Control Units: Analog, addressable type; listed, classified, and labeled as suitable for the purpose intended.

C. Initiating Devices:

1. Addressable Systems:
   a. Addressable Devices: Individually identifiable by addressable fire alarm control unit.
   b. Provide suitable addressable interface modules as indicated or as required for connection to conventional (non-addressable) devices and other components that provide a dry closure output.

D. Notification Appliances:

E. Circuit Conductors: Copper; provide 200 feet extra; color code and label.

F. Surge Protection: In accordance with IEEE C62.41.2 category B combination waveform and NFPA 70; except for optical fiber conductors.

G. Locks and Keys: Deliver keys to Owner.

1. Provide the same standard lock and key for each key operated switch and lockable panel and cabinet; provide 5 keys of each type

H. Instruction Charts: Printed instruction chart for operators, showing steps to be taken when a signal is received (normal, alarm, supervisory, and trouble); easily readable from normal operator's station.

1. Frame: Stainless steel or aluminum with polycarbonate or glass cover.
2. Provide one for each control unit where operations are to be performed.
3. Obtain approval of Owner prior to mounting; mount in location acceptable to Owner.
4. Provide extra copy with operation and maintenance data submittal.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install in accordance with applicable codes, NFPA 72, NFPA 70, and Contract Documents.

B. Conceal all wiring, conduit, boxes, and supports where installed in finished areas.

C. Obtain Owner's approval of locations of devices, before installation.

D. Install instruction cards and labels.

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3.2 INSPECTION AND TESTING FOR COMPLETION

A. Notify Owner 7 days prior to beginning completion inspections and tests.

B. Notify authorities having jurisdiction and comply with their requirements for scheduling inspections and tests and for observation by their personnel.

C. Provide the services of the installer's supervisor or person with equivalent qualifications to supervise inspection and testing, correction, and adjustments.

D. Prepare for testing by ensuring that all work is complete and correct; perform preliminary tests as required.

E. Provide all tools, software, and supplies required to accomplish inspection and testing.

F. Perform inspection and testing in accordance with NFPA 72 and requirements of local authorities; document each inspection and test.

G. Correct defective work, adjust for proper operation, and retest until entire system complies with Contract Documents.

3.3 CLOSEOUT

A. Closeout Demonstration: Demonstrate proper operation of all functions to Owner.

1. Be prepared to conduct any of the required tests.
2. Have at least one copy of operation and maintenance data, preliminary copy of project record drawings, input/output matrix, and operator instruction chart(s) available during demonstration.
3. Have authorized technical representative of control unit manufacturer present during demonstration.
4. Demonstration may be combined with inspection and testing required by authority having jurisdiction; notify authority having jurisdiction in time to schedule demonstration.
5. Repeat demonstration until successful.

END OF SECTION

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EDWARDSBURG MIDDLE SCHOOL - MECHANICAL UPGRADES

EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

CONSTRUCTION DOCUMENTS - BP7

DESIGN TEAM

ARCHITECT/ENGINEER

TowerPinkster
Architecture · Engineering · Interiors

242 E. KALAMAZOO AVE, SUITE 100
KALAMAZOO, MICHIGAN 49007
PHONE: 269.343.6133
FAX: 269.343.6633

CONSTRUCTION MANAGER

SKILLMAN

8120 MOORSBRIDGE RD, SUITE 101
PORTAGE, MI 49024
PHONE: 269.350.5757
FAX: 269.903.2869

SITE ADDRESS

EDWARDSBURG MIDDLE SCHOOL
69410 SECTION ST
EDWARDSBURG, MI 49112

REFERENCED CODES

BUILDING:	2021 MICHIGAN BUILDING CODE AND 2012 NFPA 101 LIFE SAFETY CODE
BUILDING:	2021 MICHIGAN REHABILITATION CODE
ENERGY:	2021 MICHIGAN ENERGY CODE
PLUMBING:	2021 MICHIGAN PLUMBING CODE
MECHANICAL:	2021 MICHIGAN MECHANICAL CODE
FUEL GAS:	(IFGC) 2021 INTERNATIONAL FUEL GAS CODE
ELECTRICAL:	2023 NATIONAL ELECTRICAL CODE WITH MICHIGAN AMENDMENTS
BARRIER-FREE:	2021 MICHIGAN BUILDING CODE AND 2017 ICC & C A117.1
USE GROUP:	E AND A-1
CONSTRUCTION TYPE:	TYPE IIB
AUTOMATIC SPRINKLERS:	PARTIALLY SPRINKLED

PROJECT AREA

TOTAL BUILDING AREA:	81,702 SQ. FT.
ALTERATION LEVEL:	LEVEL 1: 1 FOR 1 AHU REPLACEMENT LEVEL 2: 31,204 SQ. FT.

ALTERNATES

ALTERNATE 01:	NOT USED
ALTERNATE 02:	PROVIDE NEW LIGHTING AND CONTROLS IN LIEU OF REINSTALLING EXISTING LIGHT FIXTURES IN SELECT CLASSROOMS AND CORRIDORS

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M 101A FIRST FLOOR SHEET METAL PLAN - UNIT A
M 101B FIRST FLOOR SHEET METAL PLAN - UNIT B
M 101C FIRST FLOOR SHEET METAL PLAN - UNIT C
M 101D FIRST FLOOR SHEET METAL PLAN - UNIT D
M 102 ROOF MECHANICAL PLAN
M 201 OVERALL FIRST FLOOR HVAC PIPING PLAN
M 201A FIRST FLOOR HVAC PIPING PLAN - UNIT A
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M 301 ENLARGED MECHANICAL ROOM PLAN
M 401 HVAC PIPING SCHEMATICS
M 501 MECHANICAL SCHEDULES AND DETAILS
M 502 MECHANICAL SCHEDULES AND DETAILS
M 503 MECHANICAL SCHEDULES AND DETAILS
M 504 MECHANICAL SCHEDULES AND DETAILS
M 601 MECHANICAL CONTROLS
M 602 MECHANICAL CONTROLS
M 603 MECHANICAL CONTROLS

ELECTRICAL - GENERAL
EG 001 ELECTRICAL SYMBOLS AND GENERAL NOTES

ELECTRICAL DEMOLITION
ED 101A FIRST FLOOR ELECTRICAL DEMOLITION PLAN - UNIT A
ED 101B FIRST FLOOR ELECTRICAL DEMOLITION PLAN - UNIT B
ED 101C FIRST FLOOR ELECTRICAL DEMOLITION PLAN - UNIT C
ED 101D FIRST FLOOR ELECTRICAL DEMOLITION PLAN - UNIT D
ED 201A FIRST FLOOR LIGHTING DEMOLITION PLAN - UNIT A
ED 201B FIRST FLOOR LIGHTING DEMOLITION PLAN - UNIT B
ED 201C FIRST FLOOR LIGHTING DEMOLITION PLAN - UNIT C
ED 201D FIRST FLOOR LIGHTING DEMOLITION PLAN - UNIT D

A3
ELECTRICAL
E 101A FIRST FLOOR POWER PLAN - UNIT A
E 101B FIRST FLOOR POWER PLAN - UNIT B
E 101C FIRST FLOOR POWER PLAN - UNIT C
E 101D FIRST FLOOR POWER PLAN - UNIT D
E 201A FIRST FLOOR LIGHTING PLAN - UNIT A - ALTERNATE #2
E 201B FIRST FLOOR LIGHTING PLAN - UNIT B - ALTERNATE #2
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E 401 ELECTRICAL ONE-LINE DIAGRAM
E 402 ELECTRICAL CONNECTION SCHEDULES
E 411 POWER DETAILS
E 420 LIGHTING SCHEDULES AND DETAILS - ALTERNATE #2

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ADDENDUM 03	02-17-2026
ADDENDUM 02	02-06-2026

PROJECT TITLE
EDWARDSBURG MIDDLE SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

DATE
JANUARY 16, 2026

SHEET TITLE
COVER SHEET

SHEET NUMBER
G 001
21-201.041

STEEL LINTEL SCHEDULE

MARK	TYPE	PROFILE	BEARING LENGTH	NOTES
L11	TYPE 1	(2) L5x3-1/2x5/16 LLV + L4x3 1/2x1/4	6"	HDG
L12	TYPE 2	(2) L5x3 1/2x5/16 LLV	6"	PLAIN

A3

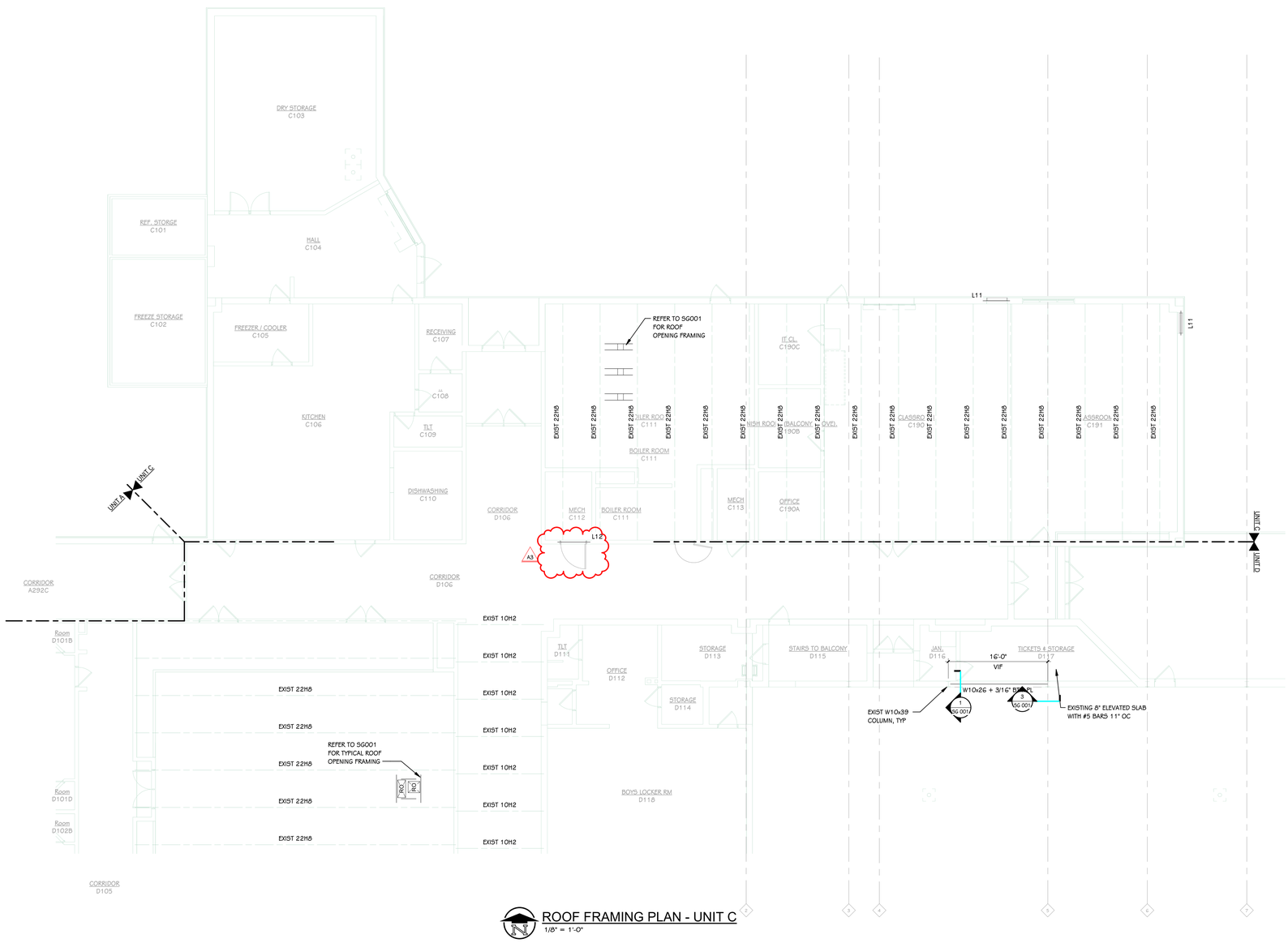
NOTES - STRUCTURAL - FRAMING

1 REFER TO PLAN FOR TS ELEVATIONS

2 REFER TO ARCHITECTURAL DRAWINGS FOR INTERIOR WALL DIMENSIONS

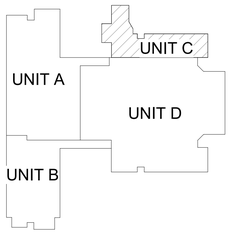
3 REFER SG001 FOR TYPICAL DETAILS

KEYED NOTES - STRUCTURAL - FRAMING



ROOF FRAMING PLAN - UNIT C
1/8" = 1'-0"

EDWARDSBURG MIDDLE SCHOOL



KEY PLAN
SCALE: NO SCALE

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OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
ROOF FRAMING PLAN - UNIT C

DATE
JANUARY 16, 2026

SHEET NUMBER
S 201C
21-201.041

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GENERAL CONDITIONS

1. COORDINATE WITH ALL DRAWINGS FOR PERTINENT INFORMATION RELATED TO THE STRUCTURAL WORK. ANY CHANGES TO THE STRUCTURAL SYSTEMS SHALL BE RE-DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER AT NO COST TO THE OWNER OR A/E AND SUBMITTED TO THE A/E FOR REVIEW. SUBMITTAL SHALL BE ACKNOWLEDGED IN WRITING BEFORE BEGINNING CONSTRUCTION

2. EQUIPMENT FRAMING LOADS, OPENINGS, AND STRUCTURE, IN ANY WAY RELATED TO HVAC, PLUMBING, PROCESS, ELECTRICAL, ELEVATOR, OR ESCALATOR REQUIREMENTS ARE SHOWN FOR BIDDING PURPOSES ONLY. CONTRACTOR SHALL OBTAIN APPROVAL OF THE PERTINENT TRADES BEFORE PROCEEDING WITH SUCH PORTION OF THE WORK. EXCESS COST RELATED TO VARIATION IN THESE REQUIREMENTS SHALL BE BORNE BY THE APPROPRIATE CONTRACTOR.

3. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ERECTION PROCEDURE AND SEQUENCES TO ENSURE THE SAFETY OF THE BUILDING AND ITS COMPONENTS DURING ERECTION. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF TEMPORARY BRACING, SHORING, GUYS, OR TIE-DOWNS THAT MAY BE NECESSARY.

4. THE STRUCTURE HAS BEEN DESIGNED FOR THE UNIFORM LOADS INDICATED IN ADDITION TO THE CONCENTRATED LOADS REQUIRED BY THE BUILDING CODE. THE STRUCTURAL DESIGN IS BASED SOLELY ON THE BUILDING IN ITS COMPLETED STATE. CONTRACTORS AND THEIR SUB-CONTRACTORS SHALL TAKE NECESSARY PRECAUTIONS TO WITHSTAND ALL HORIZONTAL AND VERTICAL LOADINGS THAT MAY BE ENCOUNTERED DURING CONSTRUCTION PRIOR TO COMPLETION OF THE BUILDING. SUCH CONSTRUCTION LOADINGS INCLUDE, BUT ARE NOT LIMITED TO, LOADS FROM CRANES, LIFTS, DOLLIES, AND HOISTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE EVALUATION OF THE IMPACT OF SUCH LOADS ON THE STRUCTURE AND PROVIDING TEMPORARY SHORING, BRACING, OR REINFORCEMENT AS REQUIRED.

5. SEE THE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS. ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE VERIFIED BY THE CONTRACTOR AND SHALL CONFORM TO THOSE SHOWN ON THE ARCHITECTURAL DRAWINGS. REPORT ALL DISCREPANCIES TO THE A/E FOR RESOLUTION BEFORE PROCEEDING.

6. THE CONTRACTOR SHALL SUPPORT, BRACE, AND SECURE EXISTING STRUCTURES AS REQUIRED. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE SAFETY OF EXISTING STRUCTURES DURING CONSTRUCTION. FIELD VERIFY ALL EXISTING DIMENSIONS WHICH AFFECT THE NEW CONSTRUCTION PRIOR TO FINAL DETAILING AND FABRICATION OF NEW STRUCTURAL ELEMENTS.

EXISTING CONDITIONS

1. ALL EXISTING STRUCTURAL ELEMENTS (SLABS, BEAMS, WALLS, COLUMNS, FOUNDATIONS, ETC.) SHALL REMAIN INTACT UNLESS SPECIFICALLY NOTED TO BE REMOVED BY THE MOST RECENT DEMOLITION DOCUMENTS OR OTHERWISE NOTED ON THE STRUCTURAL DRAWINGS.

2. INFORMATION PROVIDED ON THESE DRAWINGS RELATED TO EXISTING CONDITIONS IS BASED ON AVAILABLE DESIGN DOCUMENTS AND LIMITED FIELD OBSERVATION. THE CONTRACTOR SHALL IMMEDIATELY REPORT TO AND AWAIT DIRECTION FROM THE A/E IF ANY DISCREPANCY BETWEEN THE CONTRACT DOCUMENTS AND THE EXISTING CONDITIONS IS DISCOVERED.

3. CORE DRILLS REQUIRED BY MECHANICAL OR ELECTRICAL TRADES, BUT NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE DOCUMENTED IN SKETCH FORM SHOWING EXACT DIMENSIONS AND LOCATIONS. THE SKETCH SHALL BE SUBMITTED TO THE A/E FOR COMMENT PRIOR TO PROCEEDING WITH THE DRILLING OPERATION.

CONCRETE MINIMUM LAP SPLICE AND ANCHORAGE DIMENSION TABLE

USE THIS TABLE FOR A615 GRADE 60 REINFORCING WHEN CONCRETE CLEAR COVER AND CLEAR SPACING IS AT LEAST d_b AND CODE MINIMUM STIRRUPS ARE PROVIDED OR IF MINIMUM STIRRUPS ARE NOT PROVIDED, CLEAR SPACING IS AT LEAST $2d_b$.

(4000 PSI CONCRETE)			(3000 PSI CONCRETE)		
	DEVELOPMENT LENGTH			DEVELOPMENT LENGTH	
BAR SIZE	TOP BARS	OTHER BARS	BAR SIZE	TOP BARS	OTHER BARS
#3	15"	12"	#3	18"	14"
#4	20"	16"	#4	23"	18"
#5	25"	19"	#5	29"	22"
#6	30"	23"	#6	35"	27"
#7	44"	34"	#7	50"	39"
#8	50"	38"	#8	57"	44"
#9	56"	43"	#9	65"	50"
#10	63"	49"	#10	73"	56"
#11	70	54"	#11	81"	62"

NOTES:

- LAP LENGTHS SHALL BE 1.3 TIMES DEVELOPMENT LENGTH.
- FOR EPOXY COATED REINFORCING MULTIPLY THE TABLE VALUES ABOVE BY 1.5.
- (MC) DENOTES MECHANICAL COUPLER DEVELOPING 125% OF THE BAR YIELD STRENGTH. NO OTHER SPLICE WILL BE ACCEPTED.
- WHEN LAPPING TWO DIFFERENT SIZE BARS, USE THE LAP DIMENSION OF THE SMALLER BAR OR THE ANCHORAGE DIMENSION OF THE LARGER BARS. USE WHICHEVER DIMENSION IS LARGER.
- TOP BARS SHALL BE DEFINED AS BEAM AND SLAB HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE TOP REINFORCEMENT. HORIZONTAL REINFORCING IN WALLS SHALL BE CONSIDERED TOP BARS.

MASONRY MINIMUM LAP SPLICE SCHEDULE

BAR SIZE	LAP LENGTH FOR BARS CENTERED IN CMU THICKNESS	LAP LENGTH FOR BARS EACH FACE OF CMU WALL (2 1/2" CLEAR MASONRY COVER)
#3	12"	12"
#4	13"	18"
#5	20"	28"
#6	38"	52"
#7	52"	70"
#8	79"	105"

NOTES:
MECHANICAL COUPLERS DEVELOPING 125% OF THE BAR YIELD STRENGTH ARE PERMITTED AT ANY SPLICE LOCATION AT CONTRACTOR'S OPTION.

STRUCTURAL DESIGN CRITERIA

1. GOVERNING CODE — MICHIGAN BUILDING CODE (MBC), 2021 EDITION
2. BUILDING RISK CATEGORY — III
3. DESIGN SOIL BEARING PRESSURE — 2,000 PSF
4. MATERIAL STRENGTHS

STRUCTURAL STEEL:

ASTM A36 (F_y = 36 KSI) - ROLLED STEEL PLATES, CHANNELS, ANGLES, BARS, AND RODS AS NOTED ON THE DRAWINGS.

REINFORCING STEEL:

ASTM A615, GRADE 60

MASONRY:

1500 PSI FOR CLAY MASONRY
2000 PSI FOR CONCRETE MASONRY

5. DEAD LOADS

TOTAL ROOF DEAD LOAD — 15 PSF

6. LIVE LOADS

ROOF — 20 PSF

7. LIVE LOAD REDUCTIONS SHALL BE COMPUTED IN ACCORDANCE WITH THE MICHIGAN BUILDING CODE. ROOF LIVE LOADS ARE NON-REDUCIBLE.

8. DESIGN SNOW LOAD AND SNOW DRIFTING PARAMETERS ARE AS FOLLOWS:

GROUND SNOW LOAD (P_g)	50 PSF
FLAT ROOF SNOW LOAD (P_f)	38.5 PSF + DRIFT
SNOW EXPOSURE FACTOR (C_s)	1.0
SNOW THERMAL FACTOR (C_t)	1.0
SNOW LOAD IMPORTANCE FACTOR	1.1
MINIMUM ROOF LIVE LOAD USED IN DESIGN	22 PSF

9. WIND LOAD DESIGN PARAMETERS ARE AS FOLLOWS:

BASIC WIND SPEED (V), (3 SECOND GUST)	114 MPH
WIND EXPOSURE CATEGORY	C
INTERNAL PRESSURE COEFFICIENT	±0.18

10. SEE TABLE FOR COMPONENTS AND CLADDING LOAD CRITERIA. ALL ARCHITECTURAL AND STRUCTURAL COMPONENTS SHALL CONFORM WITH THE MICHIGAN BUILDING CODE AND ASCE 7 FOR COMPONENTS AND CLADDING DESIGN.

ROOF PRESSURES (PSF)

AREA	ZONE 1	ZONE 2	ZONE 3
10	16, -51	16, -67	16, -91
25	16, -46	16, -61	16, -80
50	16, -43	16, -57	16, -71
100	16, -40	16, -53	16, -63
500	16, -32	16, -43	16, -43

WALL PRESSURES (PSF)

AREA	INTERIOR ZONE	EDGE ZONE
10	32, -35	32, -43
25	30, -33	80, -33
50	29, -31	71, -31
100	27, -30	63, -30
500	24, -27	43, -27

NOTES:

- END ZONE WIDTH IN FEET = 10% OF LEAST HORIZONTAL DIMENSION OR .4h WHICHEVER IS SMALLER BUT NOT LESS THAN EITHER, 4% OF LEAST HORIZONTAL DIMENSION OR 3'-0"
  h=MEAN ROOF HEIGHT, IN FEET, EXCEPT THAT EAVE HEIGHT SHALL BE USED FOR ROOF ANGLES < 10

SEISMIC LOAD DESIGN PARAMETERS ARE AS FOLLOWS:

SOIL SITE CLASS	D
MAPPED SPECTRAL RESPONSE ACCELERATION	
(S_s)	0.094
(S_1)	0.055
DESIGN SPECTRAL RESPONSE ACCELERATION	
(S_{ds})	0.100
(S_{d1})	0.088
SEISMIC DESIGN CATEGORY	B
SEISMIC IMPORTANCE FACTOR (I_e)	1.25
SEISMIC LATERAL FORCE RESISTING SYSTEM	-ORDINARY PLAIN MASONRY SHEAR WALLS
RESPONSE MODIFICATION FACTOR (R)	1.5
DEFLECTION AMPLIFICATION FACTOR (C_d)	2.5
SEISMIC DESIGN METHOD	EQUIVALENT LATERAL FORCE PROCEDURE
SEISMIC RESPONSE COEFFICIENT (C_s)	0.098

CONCRETE REINFORCING CLEAR COVER REQUIREMENTS

CONCRETE CAST AGAINST AND PERMANENTLY IN CONTACT WITH GROUND	3"
CONCRETE EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	
#5 BAR AND SMALLER	1-1/2"
#6 BAR AND LARGER	2"
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	
SLABS, JOISTS, AND WALLS (NOT LARGER THAN #11 BAR)	3/4"
BEAMS, COLUMNS, PIERS	1-1/2"

NOTE:
CLEAR COVER DIMENSIONS LISTED ARE CODE-REQUIRED MINIMUMS. PROVIDE GREATER COVER WHERE SPECIFICALLY REQUIRED BY DETAILS.

MASONRY CONSTRUCTION

1. MASONRY WORK SHALL CONFORM TO THE ACI 530 AND 530.1.

2. CONCRETE MASONRY UNITS SHALL BE NORMAL WEIGHT UNITS

HOLLOW LOAD BEARING — ASTM C90, WITH MINIMUM NET AREA COMPRESSIVE OF 2000 PSI. ALL LOAD BEARING BLOCK UNITS SHALL BE MANUFACTURED SO THE CORES AND WEBS LINE UP WHEN LAID IN RUNNING BOND.

3. MORTAR FOR LOAD BEARING WALLS, EXTERIOR WALLS, SHEAR WALLS, AND VERTICALLY REINFORCED MASONRY WALLS SHALL BE ASTM C270, TYPE S, WITH A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI AT 28 DAYS.

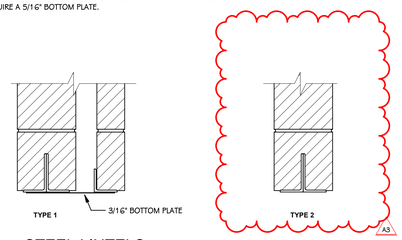
4. SPLICED WIRE REINFORCEMENT SHALL BE LAPPED AT LEAST 6" AND CONTAIN AT LEAST ONE CROSS WIRE OF EACH PIECE OF REINFORCEMENT WITHIN THE 6".

5. ALL UNITS SHALL BE LAID WITH FULL MORTAR COVERAGE ON HEAD, BED (FACE SHELLS), WEBS AND COLLAR JOINTS, UNO.

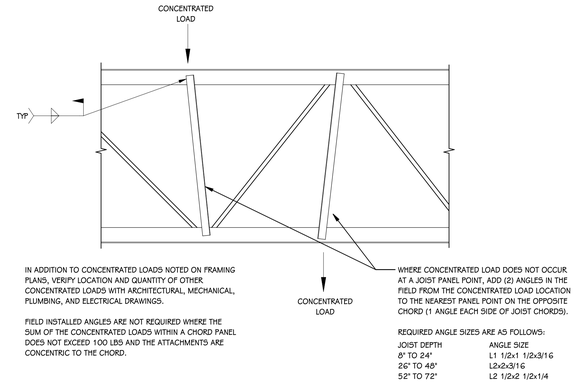
6. PROVIDE LINTELS OVER ALL OPENINGS WIDER THAN 8" IN MASONRY WALLS. REFER TO THE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR LOCATION, NUMBER, AND SIZES OF OPENINGS.

STEEL LINTEL SCHEDULE NOTES:

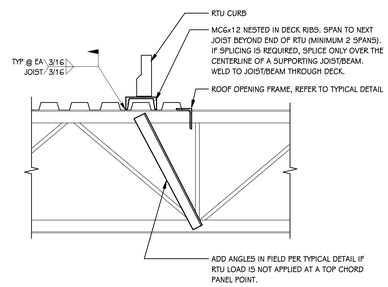
- ALL LINTELS WITHIN THE EXTERIOR WALL SYSTEM SHALL BE GALVANIZED
- ALL ANGLE LINTELS SHALL HAVE 8" OF SOLID MASONRY BELOW BEARING END, UNLESS NOTED OTHERWISE.
- ALL BEAM LINTELS SHALL HAVE 16" OF SOLID MASONRY BELOW BEARING END, UNLESS NOTED OTHERWISE.
- BOTTOM PLATES ON BEAMS SHALL BE 1/2" LESS IN WIDTH THAN THE WALL THICKNESS AND EXTEND FOR THE FULL LENGTH OF THE BEAM INCLUDING THE BEARING ENDS, UNO.
- BOTTOM PLATES SHALL BE WELDED TO THE BEAM WITH 1/4" FILLET WELDS, 3" LONG, BOTH SIDES AT 9" O.C., STAGGER PLACEMENT OF WELDS FROM SIDE TO SIDE.
- SEE ARCHITECTURAL DRAWINGS FOR DOOR AND WINDOW HEAD CONDITIONS WHICH REQUIRE A 5/16" BOTTOM PLATE.



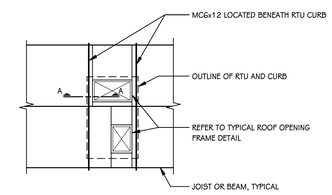
STEEL LINTELS
1 1/2" = 1'-0"



TYPICAL JOIST MODIFICATION AT CONCENTRATED LOADS
3/4" = 1'-0"



SECTION A-A

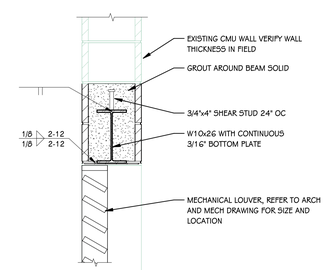


PLAN VIEW

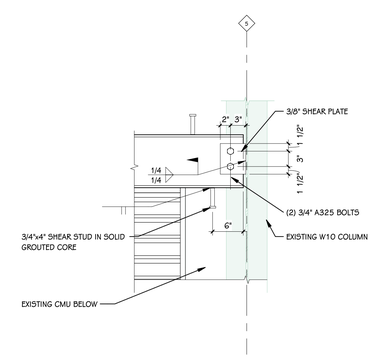
TYPICAL RTU SUPPORT
1" = 1'-0"

NOTES:

1. REFER TO ARCHITECTURAL FOR BLOCKING AND FLASHING REQUIREMENTS AT RTU CURB.
2. COORDINATE MC6x12 LOCATIONS WITH MECHANICAL CONTRACTOR.
3. COORDINATE SIZE AND LOCATION OF ROOF OPENING FRAMES WITH MECHANICAL CONTRACTOR. OPENING QUANTITY, SIZES, AND LOCATIONS SHOWN IN THIS DETAIL ARE NOT REPRESENTATIVE OF ACTUAL OPENINGS REQUIRED.
4. IN THE CASE THAT THE RTU IS ORIENTED WITH THE LONG DIMENSION PARALLEL TO JOISTS/BEAMS, PROVIDE MC6x12 BENEATH EACH END OF THE RTU AND @4'-0" MAX SPACING BETWEEN ENDS (COORDINATE PLACEMENT WITH OPENING LOCATIONS). MC6x12 SHALL SPAN TO NEXT JOIST BEYOND SIDES OF RTU.
5. WHERE RTU CURB LOCATION RELATIVE TO ROOF DECK RIBS IS SUCH THAT A SINGLE MC6x12 NESTED IN THE DECK RIBS DOES NOT FULLY SUPPORT THE RTU CURB OR DOES NOT PROVIDE AN ADQUATE SURFACE FOR CONNECTION OF THE RTU CURB, PROVIDE DOUBLE MC6x12 AT NO ADDITIONAL COST. COORDINATE WITH MECHANICAL CONTRACTOR.
6. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR CONNECTIONS OF ROOFTOP EQUIPMENT TO CURBS AND CURBS TO THE SUPPORTING STRUCTURE. DESIGN OF CONNECTIONS SHALL CONSIDER ALL APPLICABLE LOADS IN ACCORDANCE WITH THE BUILDING CODE, INCLUDING WIND AND SEISMIC LOADS.



1 / SG 001 BEAM ABOVE GYM LOUVER
1" = 1'-0"



3 / SG 001 BEAM SHEAR CONNECTION
1" = 1'-0"

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EDWARDSBURG MIDDLE SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
STRUCTURAL GENERAL NOTES

DATE
JANUARY 16, 2026

SHEET NUMBER
SG 001
21-201.041

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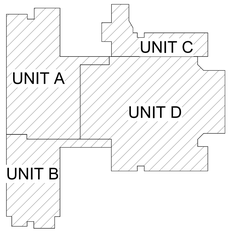
KEYED NOTES - ARCHITECTURAL - DEMOLITION

1. REMOVE AND SALVAGE BASE, TALL AND/OR WALL CABINETS AND COUNTERTOP IN ORDER TO INSTALL HVAC UNIT - RETURN TO OWNER
2. REMOVE SUSPENDED CEILING SYSTEM
3. NOT USED
4. REMOVE AND SALVAGE BASE, TALL AND/OR WALL CABINETS AND COUNTERTOP TO REINSTALL
5. REMOVE AND SALVAGE MARKERBOARD/TACKBOARD - RETURN TO OWNER
6. SAWCUT AND REMOVE EXTERIOR CMU AND BRICK WALL CONSTRUCTION AS REQUIRED TO INSTALL NEW LINTEL AND NEW MECHANICAL UNIT LOUVER. COORDINATE ALL HEIGHTS & SIZES WITH STRUCTURAL AND MECHANICAL. SALVAGE BRICK, CLEAN AND INSTALL AS NEEDED AT INFILLS AND LINTELS.
7. REMOVE LOUVER AND SAWCUT CMU WALL CONSTRUCTION TO PROVIDE A 5'-4" HEIGHT OPENING. PREP HEAD CONDITION FOR LINTEL.
8. REMOVE AND SALVAGE LOUVER FOR REINSTALLATION AT SAME LOCATION
9. REMOVE DOOR AND FRAME
10. REMOVE PLASTER CEILING COMPLETELY
11. REMOVE PORTION OF MASONRY WALL FOR NEW OPENING

OVERALL FIRST FLOOR DEMOLITION PLAN
1/16" = 1'-0"

THIS DRAWING SHEET IS INTENDED TO BE PLOTTED IN COLOR. IF THIS TEXT APPEARS IN BLACK AND WHITE, IT IS PLOTTED INCORRECTLY. DISCARD AND OBTAIN AN ACCURATE DRAWING

EDWARDSBURG MIDDLE SCHOOL



KEY PLAN
SCALE: NO SCALE

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OWNER
EDWARDSBURG PUBLIC SCHOOLS
Edwardsburg, Michigan

SHEET TITLE
OVERALL FIRST FLOOR DEMOLITION PLAN

DATE
JANUARY 16, 2026

SHEET NUMBER
AD 101
21-201.041

MATERIAL SELECTION SCHEDULE

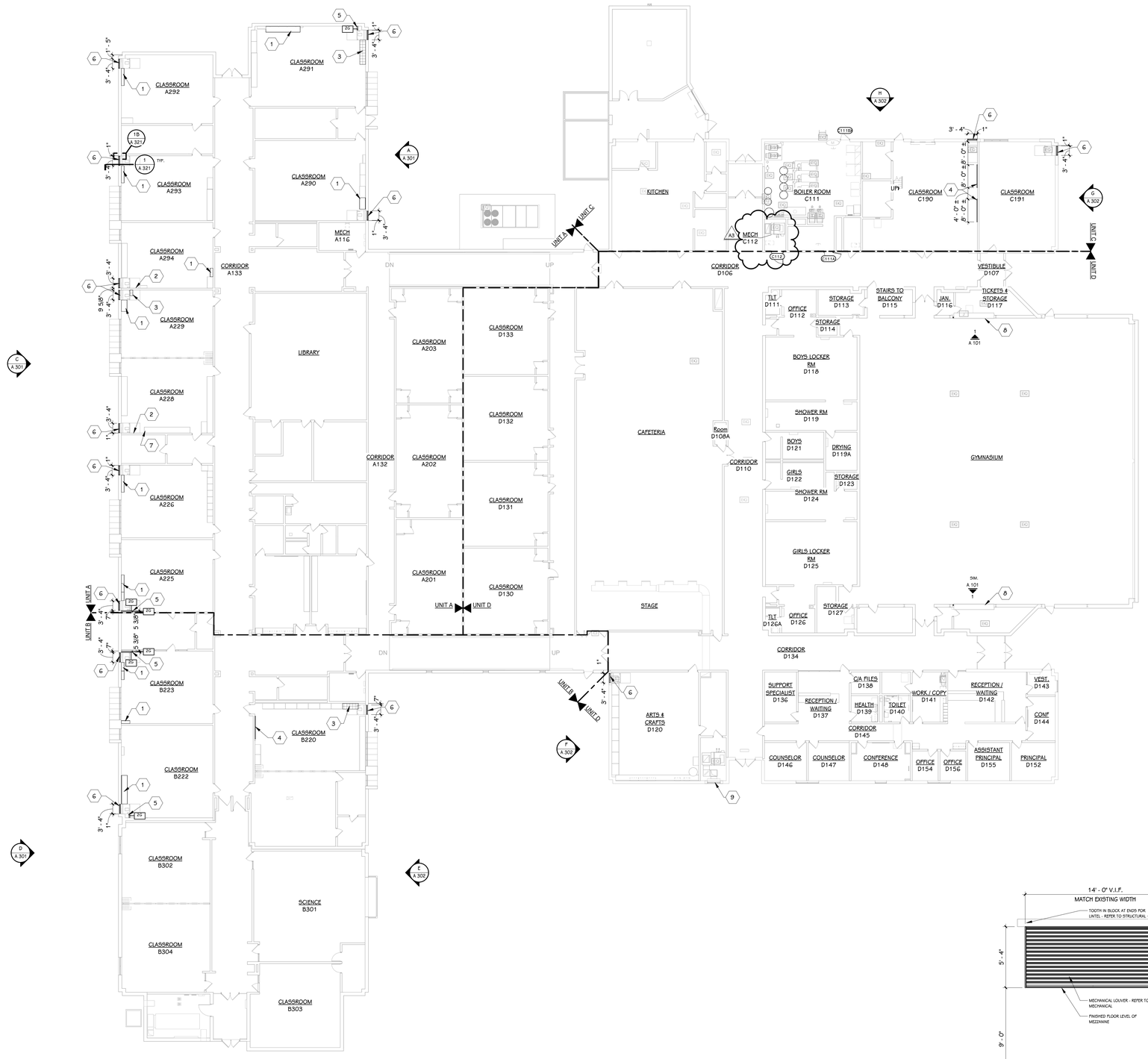
ABBREV	ITEM	MANUFACTURER	PATTERN	COLOR	PRODUCT NO.	SIZE	SINGLE SOURCE	BASIS OF DESIGN	ADDITIONAL MANUFACTURERS	REMARKS
ACP-1	ACOUSTIC CEILING PANEL	USG CEILINGS	RADAR	WHITE	--	2' X 2'	x		--	DISTRICT BUILDING STANDARD | WHITE SQUARE EDGE ACOUSTICAL DROP CEILING
P-1	PAINT	SHERWIN WILLIAMS	--	MATCH EXISTING	--	--		X	BENJAMIN MOORE, PITTSBURGH PAINTS	DISTRICT STANDARDS
RB-1	RUBBER BASE	TARKETT | JOHNSONITE	TRADTIIONAL DURACOVE	GREY	48	4" X 120' COILS		X	FLEXCO, MANNINGTON, ROPPEE	--
VCT-1	VINYL COMPOSITION TILE	ARMSTRONG	STANDARD EXCELON	TO BE SELECTED FROM FULL RANGE	--	12" X 12"		X	MANNINGTON, TARKETT	INTENT TO MATCH EXISTING

NOTES:

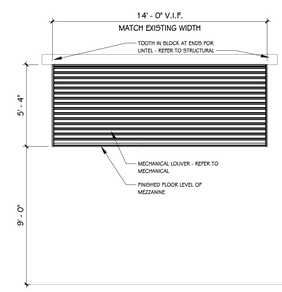
1 NO COMPARABLE PRODUCTS WILL BE REVIEWED FOR PRODUCTS DESIGNATED AS SINGLE SOURCE.

2 COMPARABLE PRODUCTS WILL BE REVIEWED FOR ITEMS LISTED AS BASIS OF DESIGN. COMPARABLE PRODUCTS ARE REQUIRED TO MEET ANY MINIMUM PERFORMANCE REQUIREMENTS LISTED IN REMARKS AND DESIGN ATTRIBUTES OF SPECIFIED PRODUCT.

3 REFER TO PRODUCT SPECIFICATION FOR TRIMS AND ACCESSORIES ASSOCIATED WITH SPECIFIED PRODUCTS ABOVE.



OVERALL FIRST FLOOR PLAN
1/16" = 1'-0"



GYM LOUVER
1/4" = 1'-0"

NOTES - ARCHITECTURAL

1 REFER TO CODE COMPLIANCE PLAN FOR WALL RATING LINES.

KEYED NOTES - ARCHITECTURAL - CONSTRUCTION

1 REINSTALL CASEWORK, TALL CABINET, SHELVING AND/OR COUNTER TIGHT TO MECH UNIT OR CASEWORK, PROVIDE NEW RESILIENT BASE AND PAINT WALL TO MATCH ADJACENT FINISHES AS NEEDED TO AT REMOVAL OF CASEWORK / FURNITURE

2 MATCH EXISTING ADJACENT PAINT AS NEEDED AT LOCATION OF CASEWORK / FURNITURE REMOVAL

3 MATCH EXISTING ADJACENT RESILIENT BASE, FLOORING AND PAINT AS NEEDED AT LOCATION OF CASEWORK / FURNITURE REMOVAL

4 INSTALL MARKERBOARD BY OWNER

5 PAINT NEW GYPSUM BOARD WALL CONSTRUCTION TO MATCH ADJACENT FINISH

6 PREFINISHED ALUMINUM LOUVER IN NEW OPENING WITH LINTEL - REFER TO MECHANICAL AND STRUCTURAL

7 REINSTALL SALVAGED SUPPORT FROM ADJACENT COUNTER

8 PREFINISHED ALUMINUM LOUVER, NEW OPENING TO BE USED TO INSTALL MECHANICAL EQUIPMENT - REFER TO MECHANICAL AND STRUCTURAL

9 REINSTALL SALVAGED LOUVER, INSURE OPENING HAS PROPER FLASHING MAINTAINED

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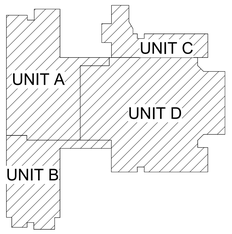
PROJECT TITLE
EDWARDSBURG MIDDLE SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

EDWARDSBURG MIDDLE SCHOOL

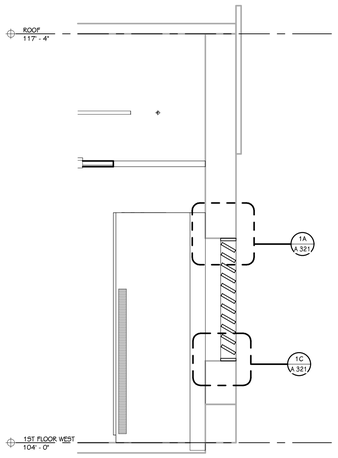


KEY PLAN
SCALE: NO SCALE

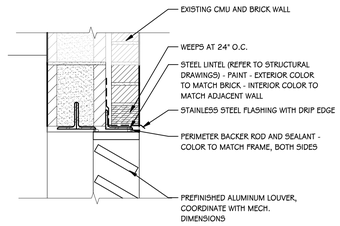
SHEET TITLE
OVERALL FIRST FLOOR PLAN AND MATERIAL SELECTION SCHEDULE

DATE
JANUARY 16, 2026

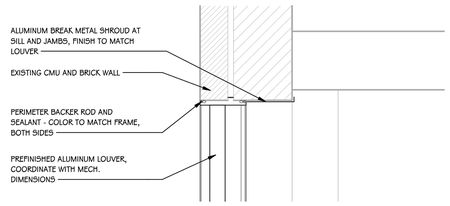
SHEET NUMBER
A 101
21-201.041



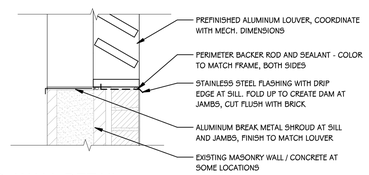
1 A 321 WALL SECTION
1/2" = 1'-0"



1A A 321 WALL DETAIL
1 1/2" = 1'-0"



1B A 321 JAMB DETAIL
1 1/2" = 1'-0"



1C A 321 WALL DETAIL
1 1/2" = 1'-0"

FIRST FLOOR DOOR SCHEDULE

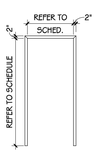
NUMBER		ROOM NAME	FIRE RATING		DOOR			SIZE		FRAME			DETAILS			GLASS	ACCESS CONTROLS					HDWR. SET	REMARKS
DOOR	ROOM		DOOR	FRAME	TYPE	MAT	FIN	WIDTH	HEIGHT	ELEV	MAT	FIN	HEAD	JAMB	SILL		A-PHONE	BARRIER-FREE	CARD READER	ELEC. LOCK HDWR.	MAG HOLD		
C111A	C111	BOILER ROOM	45 MIN.	60 MIN.	F	WD	PREFIN	3' - 0"	7' - 2"	1	HM	SEE REMARKS	H1	J1	-	-	No	No	No	No	No	001	1
C112	C112	MECH	45 MIN.	60 MIN.	F	WD	PREFIN	4' - 0"	7' - 2"	1	HM	SEE REMARKS	H1	J1	-	-	No	No	No	No	No	003	1

A3

FIRST FLOOR EXISTING DOOR SCHEDULE

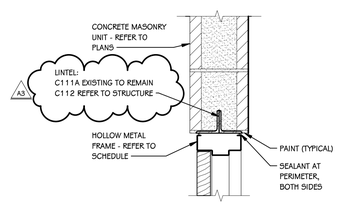
NUMBER		ROOM NAME	FIRE RATING		DOOR			SIZE		FRAME			DETAILS			GLASS	ACCESS CONTROLS					HDWR. SET	REMARKS
DOOR	ROOM		DOOR	FRAME	TYPE	MAT	FIN	WIDTH	HEIGHT	ELEV	MAT	FIN	HEAD	JAMB	SILL		A-PHONE	BARRIER-FREE	CARD READER	ELEC. LOCK HDWR.	MAG HOLD		
C111BX	C111	BOILER ROOM	-	-	F	HM	SEE REMARKS	3' - 0"	7' - 2"	-	HM	SEE REMARKS	-	-	-	-	No	No	No	No	No	002	2

REMARKS:
1.) MATCH ADJACENT CORRIDOR DOOR FRAME PAINT COLOR
2.) MATCH EXISTING DOOR AND FRAME

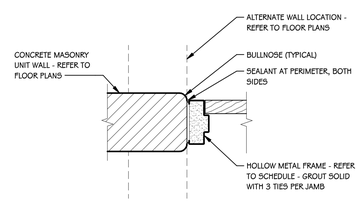


FRAME ELEVATIONS
SCALE: NONE

DOOR PANEL ELEVATIONS
SCALE: NONE



H1 A 321 HEAD DETAIL
1 1/2" = 1'-0"



J1 A 321 JAMB DETAIL
1 1/2" = 1'-0"

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PROJECT TITLE
EDWARDSBURG MIDDLE SCHOOL - MECHANICAL UPGRADES

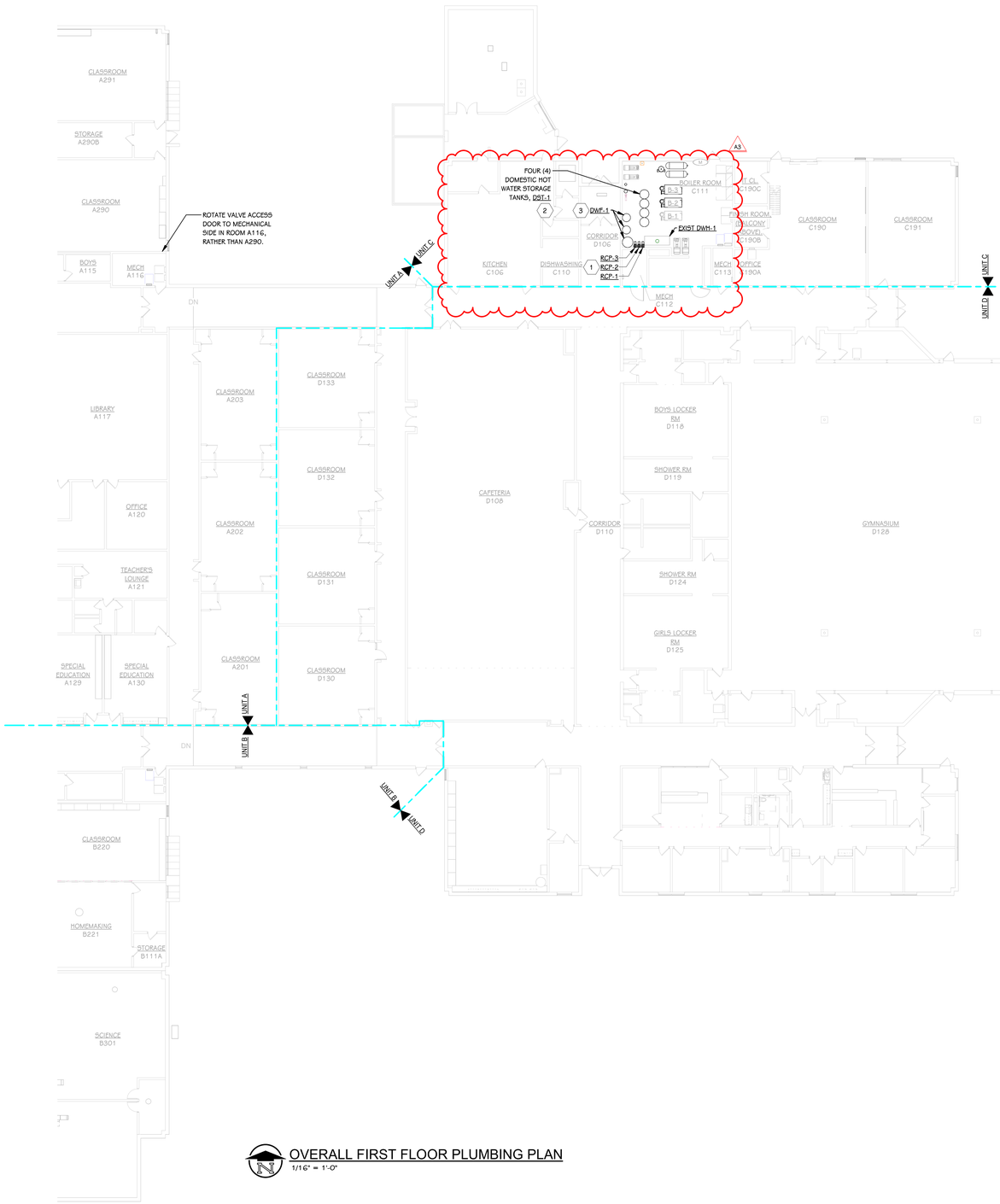
OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
WALL SECTIONS AND DETAILS

DATE
JANUARY 16, 2026

SHEET NUMBER
A 321
21-201.041



OVERALL FIRST FLOOR PLUMBING PLAN
1/16" = 1'-0"

GENERAL NOTES - PLUMBING - CONSTRUCTION

1 SITE AND BUILDING DOCUMENTS ARE BASED ON THE BEST AVAILABLE RECORDS AND ARE NOT GUARANTEED TO BE COMPLETE OR CORRECT. THEY ARE A GRAPHIC REPRESENTATION OF THE PROJECT AND MERELY TO ASSIST THE CONTRACTOR IN DETERMINING THE SCOPE OF WORK. COORDINATE WITH G.C. THE RESPONSIBILITY OF CUTTING AND PATCHING ALL WALL, FLOOR, AND CEILING PENETRATIONS TO MATCH.

2 ALL WORK SHALL COMPLY WITH STATE AND LOCAL CODE REQUIREMENTS AS APPROVED AND AMENDED BY GOVERNING CITY AND THE AUTHORITY HAVING JURISDICTION. CONTRACTOR SHALL PAY FOR ALL NECESSARY PERMITS, FEES, TAXES, AND APPROVALS FOR CONSTRUCTION.

3 COORDINATE PLUMBING SYSTEMS WITH THE WORK OF OTHER TRADES, EQUIPMENT FURNISHED BY OTHERS, AND OWNER REQUIREMENTS. CONTRACTOR IS RESPONSIBLE TO VERIFY EXISTING CONDITIONS RELATING TO WORK REQUIRED INCLUDING BUT NOT LIMITED TO VERIFYING QUANTITIES OF EQUIPMENT AND ALL RELEVANT DIMENSIONS. NOTIFY ARCHITECT OF ANY DISCREPANCIES BEFORE STARTING WORK.

4 COORDINATE EQUIPMENT AND THE ROUTING OF ALL PIPING WITH ALL OTHER TRADES. COORDINATE ALL ROUGH-IN LOCATIONS WITH ARCHITECTURAL PLANS AND EQUIPMENT. REPORT ANY DISCREPANCIES BETWEEN EQUIPMENT AND THE PLUMBING DRAWINGS TO THE ARCHITECT FOR RESOLUTION. PLATFORMS, CURBS, AND FLASHINGS FOR PLUMBING EQUIPMENT SHALL BE AS INDICATED ON THE STRUCTURAL AND ARCHITECTURAL PLANS UNLESS OTHERWISE NOTED. COORDINATE LOCATION AND SIZES OF OPENINGS AND SUPPORTS WITH OTHER TRADES PRIOR TO INSTALLATION.

5 NO PIPING SHALL BE INSTALLED ABOVE ELECTRICAL PANELS AND EQUIPMENT.

6 CONTRACTOR SHALL VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION TO ENSURE THERE IS ADEQUATE PRESSURE FOR THE DOMESTIC WATER AND FIRE SUPPRESSION SYSTEMS. IF PRESSURE AT BUILDING ENTRY PRIOR TO ALL LOCALLY REQUIRED DEVICES IS LESS THAN 60 PSIG STATIC, CONTACT OWNERS REPRESENTATIVE. IF PRESSURE EXCEEDS 80 PSIG, PROVIDE PRESSURE REDUCING VALVE.

7 SUSPEND HORIZONTAL SERVICE PIPING FROM UNDERSIDE OF ROOF OR FLOOR STRUCTURE UNLESS OTHERWISE INDICATED AND PROVIDE HANGERS AND SUPPORTS AS REQUIRED BY CODE. INSTALL PIPING AS HIGH AS POSSIBLE IN ROOMS WITH EXPOSED CEILINGS. EXTEND PIPING DOWN IN WALLS, PARTITIONS, AND CHASES TO SERVE FIXTURES AND EQUIPMENT. EXPOSED PIPING PENETRATING WALLS, CEILING OR FLOORS SHALL BE PROVIDED WITH ESCUTCHEON PLATES.

8 MAINTENANCE LABEL SHALL BE AFFIXED TO ALL PLUMBING EQUIPMENT AND A MAINTENANCE MANUAL SHALL BE PROVIDED TO OWNER.

9 ALL SHUT-OFF VALVES, CLEANOUTS, AND WATER HAMMER ARRESTORS THAT ARE LOCATED IN AN INACCESSIBLE LOCATION SHALL BE PROVIDED WITH AN ACCESS DOOR.

10 PROVIDE WATER HAMMER ARRESTORS TO ALL QUICK CLOSING FIXTURES AND COMPLY WITH ASSE 1010. PROVIDE LINE SIZE BALL VALVE BETWEEN THE PIPE TEE AND ARRESTOR.

A3 11 NOTE REMOVED.

12 PROVIDE FIRE/SMOKE STOPPING AT ALL WALL, FLOOR, AND CEILING PENETRATIONS WHERE REQUIRED TO MAINTAIN FIRE/SMOKE SEPARATION AND WALL INTEGRITY. USE U.L. LISTED MATERIAL. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS.

13 PROVIDE DI-ELECTRIC FITTINGS WHERE ANY DISSIMILAR METALS ARE CONNECTED.

14 CAULK EACH PLUMBING FIXTURE BETWEEN WALLS AND FLOORS WITH WHITE SILICONE RUBBER SEALANT.

15 FOR TIE-INS TO EXISTING SYSTEM, EXISTING MUST BE EQUAL TO OR LARGER THAN NEW.

16 INSULATE DOMESTIC HOT AND COLD PIPING WITH 1" CLOSED CELL FLEXIBLE FOAM RUBBER (SEAL BUTT JOINTS).

17 ALL NEW HOT AND COLD WATER LINES SHALL BE SANITIZED PER 2021 MI PLUMBING CODE, SECTION 610.1 OR LOCAL WATER DEPARTMENT REQUIREMENTS. FLUSH AND TEST SYSTEM FOR LEAKS. PLUMBING CONTRACTOR IS RESPONSIBLE FOR THE PROPER AND LEAK FREE OPERATION OF THE SYSTEM.

18 PIPING FITTINGS, SHUT-OFF VALVES, STRAINERS, ETC. SHALL BE THE SAME SIZE AS PIPE IN WHICH THEY ARE INSTALLED. INSTALL RELIEF VALVE FROM DISCHARGE PIPING. ISOLATION VALVES TO BE LEAD FREE, QUARTER TURN SOLID BRASS, 2 PIECE, FULL PORT, BALL VALVES. APOLLO, 77FLF SERIES OR EQUAL.

19 SLOPE ALL SANITARY WASTE PIPING 1/4" PER FOOT WHERE POSSIBLE AND A MINIMUM OF 1/8" PER FOOT.

KEYED NOTES - PLUMBING - DOMESTIC

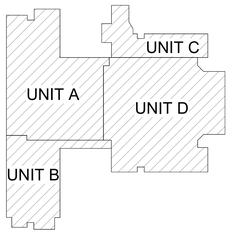
1 PROVIDE CIRCULATION PUMP, CHECK VALVE, AND SHUTOFF VALVE.

2 PROVIDE DOMESTIC HOT WATER STORAGE TANK.

A3 3 PROVIDE DOMESTIC WATER FILTRATION SYSTEM. TIE INTO COLD WATER MAIN SERVICE AFTER WATER METER AND BEFORE DISTRIBUTION WITH SAME SIZE AS EXISTING PIPE.

THIS DRAWING SHEET IS INTENDED TO BE PLOTTED IN COLOR. IF THIS TEXT APPEARS IN BLACK AND WHITE, IT IS PLOTTED INCORRECTLY. DISCARD AND OBTAIN AN ACCURATE DRAWING

EDWARDSBURG MIDDLE SCHOOL



KEY PLAN
SCALE: NO SCALE

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PROJECT TITLE
EDWARDSBURG MIDDLE SCHOOL - MECHANICAL RENOVATIONS

OWNER
EDWARDSBURG PUCLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
OVERALL FIRST FLOOR PLUMBING PLAN

DATE
JANUARY 16, 2026

SHEET NUMBER
P 101
21-201.041

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PLUMBING RECIRCULATION PUMP SCHEDULE

TAG	LOCATION	SERVICE	MODEL NO.	GPM	HEAD	WATTS	MOTOR	AMPS	VOLTAGE	NOTES
RCP-1	MECH	DOMESTIC HOT WATER STORAGE SYSTEM	ECOCIRC XL 20-140	90	15	470	ECM	2.0	208-230V / 1PH	1, 4, 5, 6
RCP-2	MECH	DOMESTIC HOT WATER SYSTEM	ECOCIRC 20-18	5	10	70	ECM	1.02	115V / 1PH	2, 4, 5, 6
RCP-3	MECH	DOMESTIC HOT WATER SYSTEM	ECOCIRC 20-18	3	8	70	ECM	1.02	115V / 1PH	3, 4, 5, 6

PLUMBING CIRCULATION PUMP SCHEDULE NOTES
1. BASED ON BELL & GOSSETT LEAD-FREE STAINLESS STEEL CIRCULATOR WITH 3" FLANGED CONNECTIONS. SET OPERATING MODE TO CONSTANT TEMPERATURE USING BUILT IN TEMPERATURE SENSOR.
2. BASED ON BELL & GOSSETT LEAD-FREE STAINLESS STEEL CIRCULATOR WITH 1" FLANGED CONNECTIONS. SET OPERATING MODE TO CONSTANT TEMPERATURE USING BUILT IN TEMPERATURE SENSOR.
3. BASED ON BELL & GOSSETT LEAD-FREE STAINLESS STEEL CIRCULATOR WITH 3/4" FLANGED CONNECTIONS. SET OPERATING MODE TO CONSTANT TEMPERATURE USING BUILT IN TEMPERATURE SENSOR.
4. VERIFY EXISTING PUMP GPM AND HEAD CLOSELY MATCH NEW PUMP CAPACITY, NOTIFY ENGINEER IF DISCREPANCY.
5. INSTALL PER MANUFACTURER INSTRUCTIONS.
6. COORDINATE POWER REQUIREMENTS WITH ELECTRICAL CONTRACTOR.

A3

DOMESTIC STORAGE TANK SCHEDULE

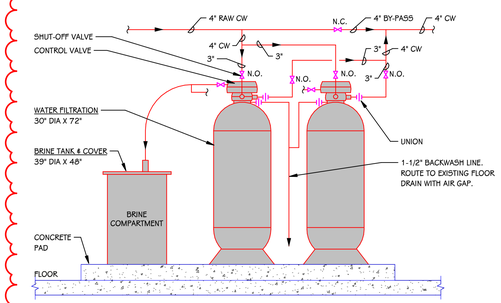
TAG	LOCATION	SERVICE	MODEL NO.	TANK VOLUME / CAPACITY (TOTAL GAL.)	DIMENSIONS		MAX. WORKING PRESSURE	SYSTEM CONNECTION	NOTES
					DIAMETER	HEIGHT			
DST-1	MECH	DOMESTIC HOT WATER	NV340JS210A	340 (1,360 TOTAL)	34"	9'-11"	150 PSI	2-1/2"	1

DOMESTIC WATER EXPANSION TANK SCHEDULE NOTES:
1. BASED ON BRADFORD WHITE STORAGE TANK (ASME). MAXIMUM OPERATING TEMPERATURE 180°F.

DOMESTIC WATER FILTRATION SCHEDULE

TAG	LOCATION	SERVICE	MODEL NO.	CONTINUOUS FLOW, GPM	PEAK FLOW, GPM	PIPE SIZE, IN	INLET PRESSURE, PSIG	VOLTAGE	FREQ. Hz	NOTES
DWF-1	MECH	DOMESTIC HOT WATER	SP-3072-3C-2	144 EA	186 EA	3	35-125	120/1PH	60	1, 2, 3, 4

DOMESTIC WATER FILTRATION SCHEDULE NOTES:
1. BASED ON EASYWATER DOMESTIC WATER FILTRATION SYSTEM. TWO (2) FIBERGLASS TANKS WITH 450,000 GRAIN CAPACITY PER TANK, HAVING TWO (2) 3" INLET/OUTLET CONNECTIONS, AND ONE (1) 39"x48" BRINE TANK.
2. PROVIDE VACUUM BREAKER PER TANK AND INSTALL AT HIGHEST PIPING POINT PER MANUFACTURER'S INSTRUCTION. PROVIDE AIR GAP OF TWO TIMES THE DIAMETER OF THE DRAIN PIPE.
3. INSTALL PER MANUFACTURER INSTRUCTIONS.
4. COORDINATE POWER REQUIREMENTS WITH ELECTRICAL CONTRACTOR.



1 / P 501 DOMESTIC WATER FILTRATION DETAIL
1/2" = 1'-0"

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PROJECT TITLE
EDWARDSBURG MIDDLE SCHOOL - MECHANICAL RENOVATIONS

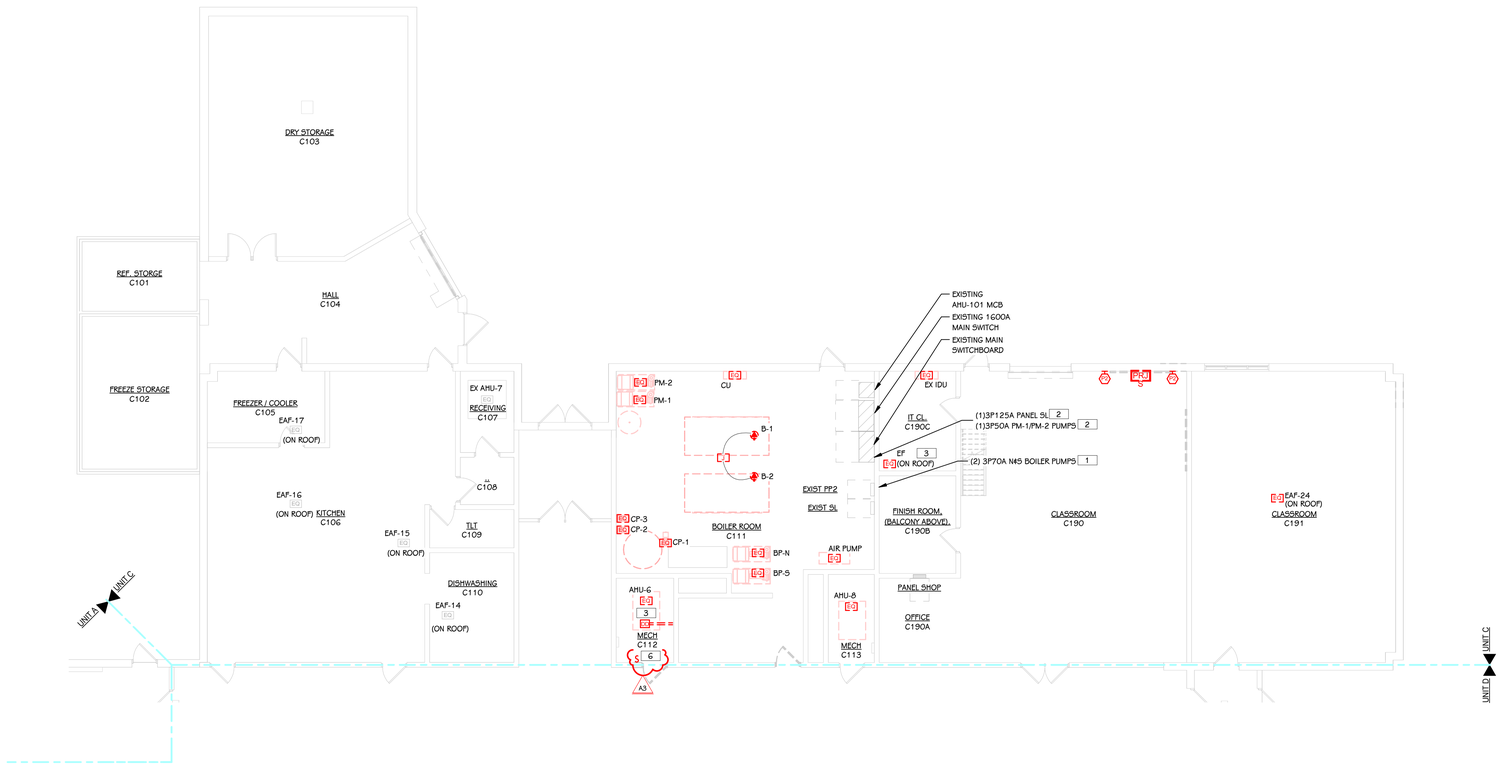
OWNER
EDWARDBURG PUCLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
PLUMBING SCHEDULES AND DETAILS

DATE
JANUARY 16, 2026

SHEET NUMBER
P 501
21-201.041



FIRST FLOOR ELECTRICAL DEMOLITION PLAN - UNIT C

1/8" = 1'-0"

KEYED NOTES - ELECTRICAL - DEMOLITION

1. REUSE CIRCUIT BREAKERS FOR NEW EQUIPMENT.
2. REMOVE AND SALVAGE CIRCUIT BREAKER(S).
3. DISCONNECT CIRCUIT(S) FROM EQUIPMENT TO BE REMOVED, MAINTAIN CIRCUIT(S) FOR CONNECTION(S) NEW EQUIPMENT IN SAME LOCATION.
4. PULL BACK CABLE AND MOVE TO NEW LOCATION. IF CABLE DOES NOT REACH, REMOVE AND PROVIDE NEW DATA CABLE TO NEW LOCATION.
5. REMOVE AND SALVAGE CIRCUIT(S) FOR REUSE.
6. SWITCH TO BE REMOVED AND RELOCATED PER DRAWING E 101C, MAINTAIN EXISTING CIRCUIT.

A3

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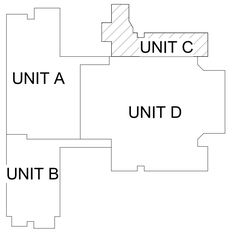
PROJECT TITLE
EDWARDSBURG MIDDLE SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

THIS DRAWING SHEET IS INTENDED TO BE PLOTTED IN COLOR. IF THIS TEXT APPEARS IN BLACK AND WHITE, IT IS PLOTTED INCORRECTLY. DISCARD AND OBTAIN AN ACCURATE DRAWING

EDWARDSBURG MIDDLE SCHOOL



KEY PLAN
SCALE: NO SCALE

SHEET TITLE
FIRST FLOOR ELECTRICAL DEMOLITION PLAN - UNIT C

DATE
JANUARY 16, 2026

SHEET NUMBER
ED 101C
21-201.041

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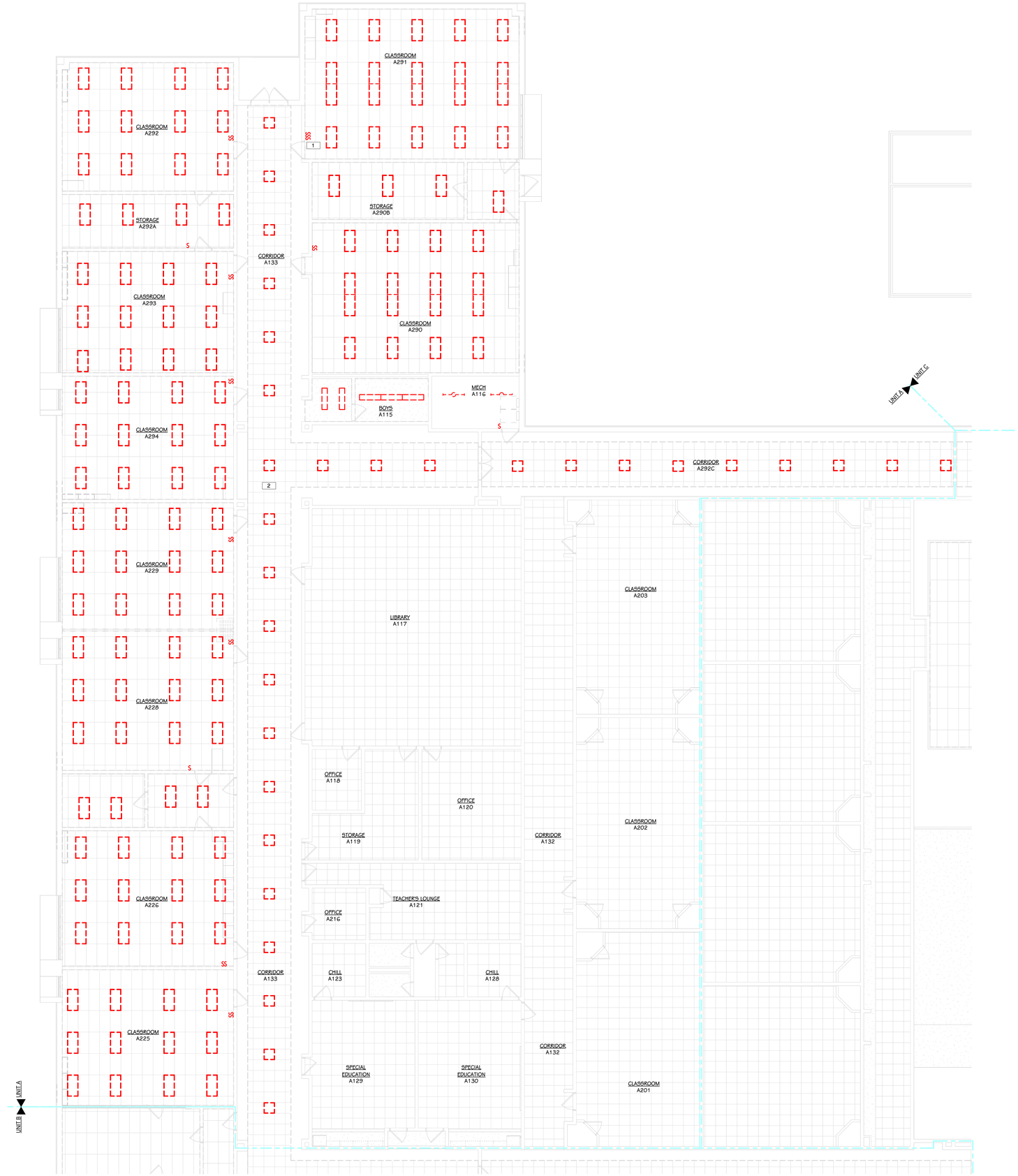
KEYED NOTES - ELECTRICAL - DEMOLITION - LIGHTING

1. MAINTAIN EXISTING LIGHTING CIRCUIT IN THIS AREA.
2. EXIT SIGNS, LOW VOLTAGE DEVICES, AND FIRE ALARM DEVICES MOUNTED TO THE CEILING THAT IS BEING REMOVED ARE TO BE REINSTALLED IN THE SAME LOCATION ON THE NEW CEILING.



FIRST FLOOR DEMOLITION LIGHTING PLAN - UNIT A
1/8" = 1'-0"

A3

BASE BID: REMOVE LIGHT FIXTURES AS SHOWN AND SALVAGE FOR REINSTALLATION IN THE SAME LOCATIONS IN THE NEW CEILING.

ALTERNATE #2: REFER TO DRAWING E 201A AND E 420 FOR NEW LIGHT FIXTURES, CONTROLS, DETAILS, AND SCHEDULES.

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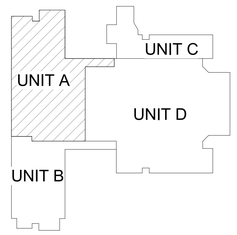
EDWARDSBURG MIDDLE SCHOOL



KEY PLAN
SCALE: NO SCALE

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PROJECT TITLE
EDWARDSBURG MIDDLE SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
FIRST FLOOR LIGHTING DEMOLITION PLAN - UNIT A

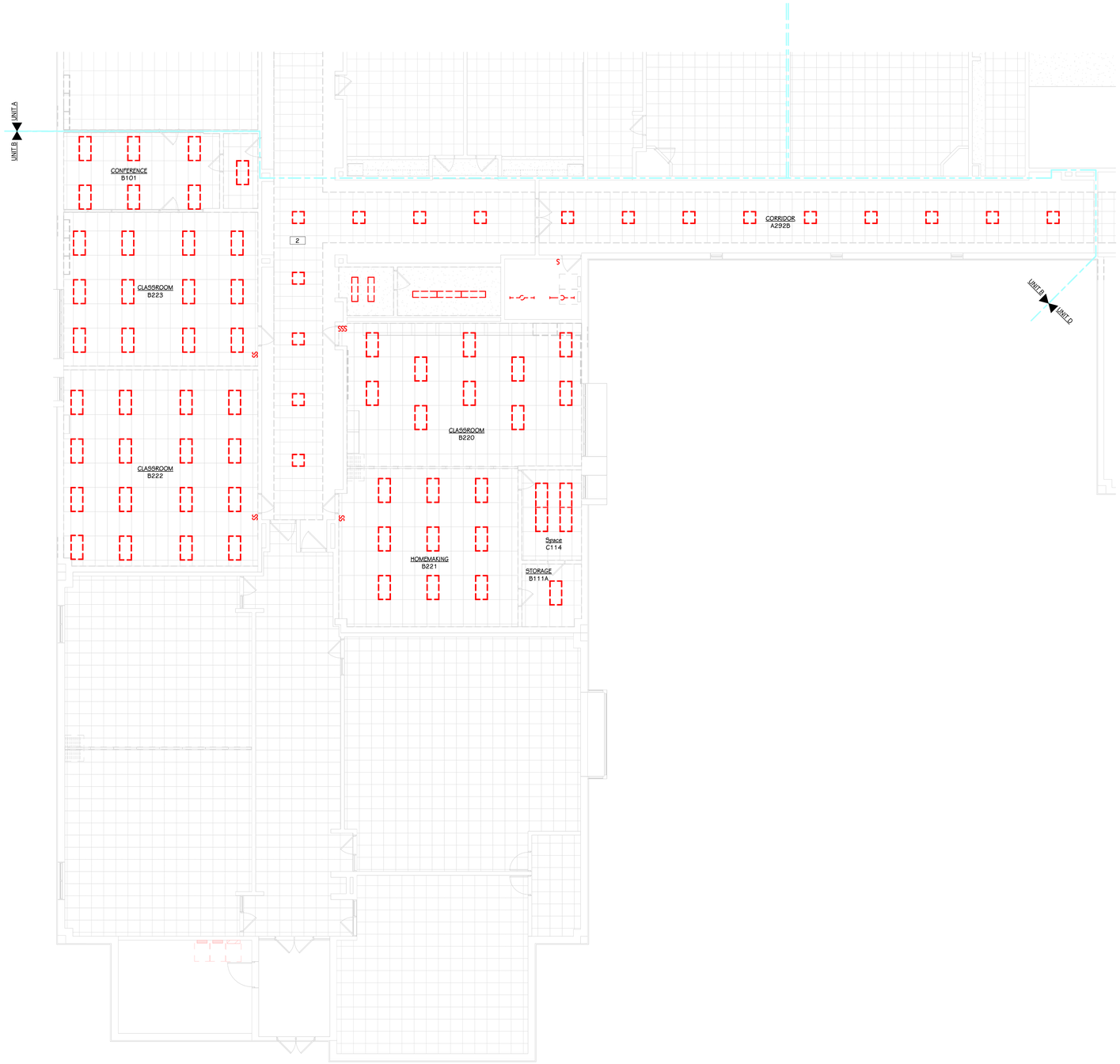
DATE
JANUARY 16, 2026

SHEET NUMBER
ED 201A
21-201.041

DRAWN BY: XXX 2/18/2026 12:35:54 AM

KEYED NOTES - ELECTRICAL - DEMOLITION - LIGHTING

1. MAINTAIN EXISTING LIGHTING CIRCUIT IN THIS AREA.
2. EXIT SIGNS, LOW VOLTAGE DEVICES, AND FIRE ALARM DEVICES MOUNTED TO THE CEILING THAT IS BEING REMOVED ARE TO BE REINSTALLED IN THE SAME LOCATION ON THE NEW CEILING.



FIRST FLOOR DEMOLITION LIGHTING PLAN - UNIT B
1/8" = 1'-0"

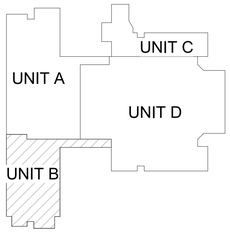
A9

BASE BID: REMOVE LIGHT FIXTURES AS SHOWN AND SALVAGE FOR REINSTALLATION IN THE SAME LOCATIONS IN THE NEW CEILING.

ALTERNATE #2: REFER TO DRAWING E 201B AND E 420 FOR NEW LIGHT FIXTURES, CONTROLS, DETAILS, AND SCHEDULES.

THIS DRAWING SHEET IS INTENDED TO BE PLOTTED IN COLOR. IF THIS TEXT APPEARS IN BLACK AND WHITE, IT IS PLOTTED INCORRECTLY. DISCARD AND OBTAIN AN ACCURATE DRAWING

EDWARDSBURG MIDDLE SCHOOL



KEY PLAN
SCALE: NO SCALE

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ISSUED FOR	DATE
ADDENDUM 03	02/17/26
ADDENDUM 02	02/06/26

PROJECT TITLE
EDWARDSBURG MIDDLE SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
FIRST FLOOR LIGHTING DEMOLITION PLAN - UNIT B

DATE
JANUARY 16, 2026

SHEET NUMBER
ED 201B
21-201.041

DRAWN BY: XXX 2/18/2026 12:35:54 AM

KEYED NOTES - ELECTRICAL - DEMOLITION - LIGHTING

1. MAINTAIN EXISTING LIGHTING CIRCUIT IN THIS AREA.
2. EXIT SIGNS, LOW VOLTAGE DEVICES, AND FIRE ALARM DEVICES MOUNTED TO THE CEILING THAT IS BEING REMOVED ARE TO BE REINSTALLED IN THE SAME LOCATION ON THE NEW CEILING.

FIRST FLOOR DEMOLITION LIGHTING PLAN - UNIT C
1/8" = 1'-0"

A3

BASE BID: REMOVE LIGHT FIXTURES AS SHOWN AND SALVAGE FOR REINSTALLATION IN THE SAME LOCATIONS IN THE NEW CEILING.

ALTERNATE #2: REFER TO DRAWING E 201C AND E 420 FOR NEW LIGHT FIXTURES, CONTROLS, DETAILS, AND SCHEDULES.

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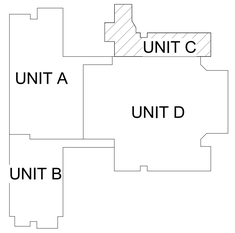
EDWARDSBURG MIDDLE SCHOOL



KEY PLAN
SCALE: NO SCALE

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PROJECT TITLE
EDWARDSBURG MIDDLE SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
FIRST FLOOR LIGHTING DEMOLITION PLAN - UNIT C

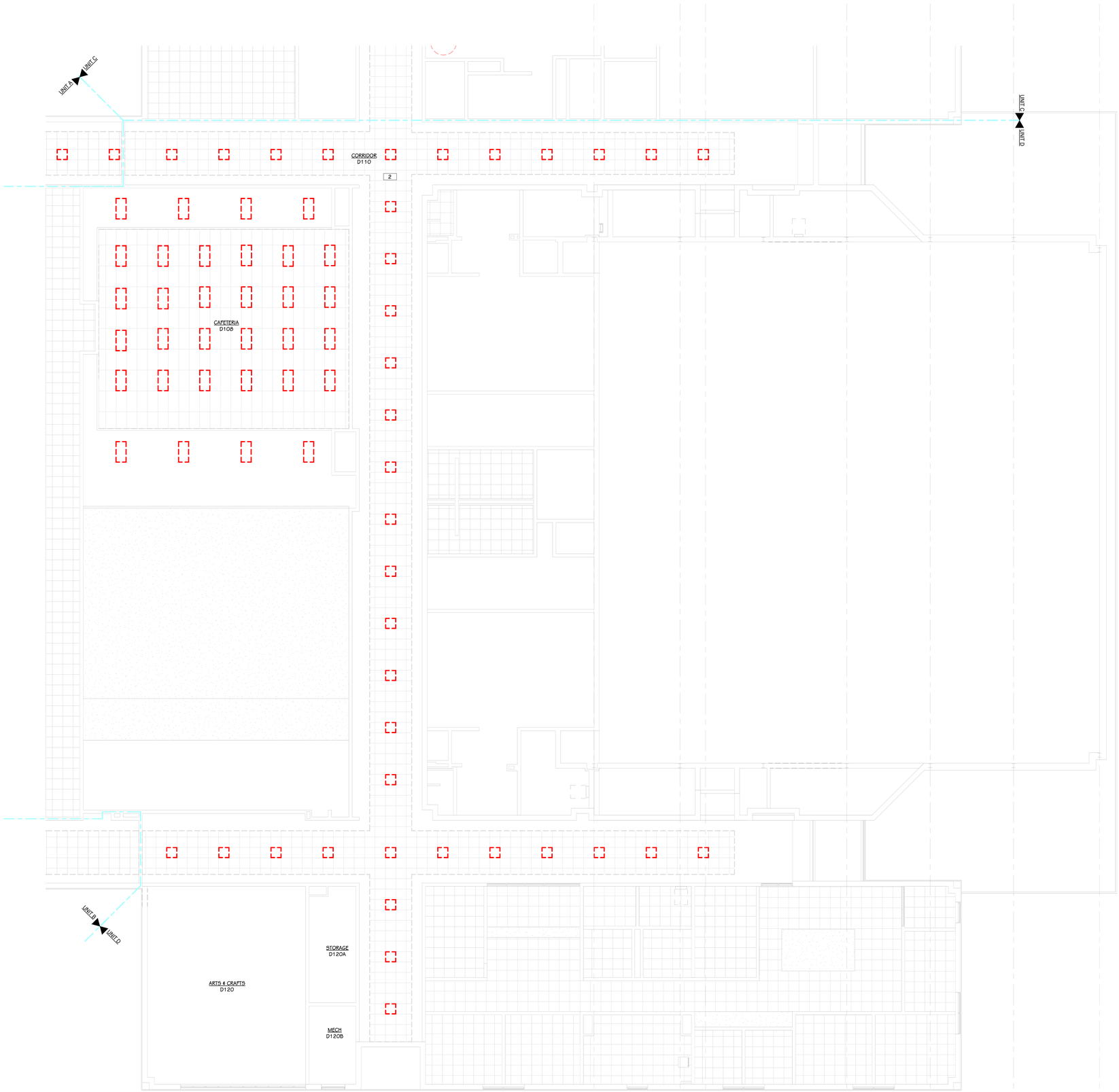
DATE
JANUARY 16, 2026

SHEET NUMBER
ED 201C
21-201.041

DRAWN BY: XXX 2/18/2026 12:39:55 AM

KEYED NOTES - ELECTRICAL - DEMOLITION - LIGHTING

1. MAINTAIN EXISTING LIGHTING CIRCUIT IN THIS AREA.
2. EXIT SIGNS, LOW VOLTAGE DEVICES, AND FIRE ALARM DEVICES MOUNTED TO THE CEILING THAT IS BEING REMOVED ARE TO BE REINSTALLED IN THE SAME LOCATION ON THE NEW CEILING.



FIRST FLOOR DEMOLITION LIGHTING PLAN - UNIT D
1/8" = 1'-0"

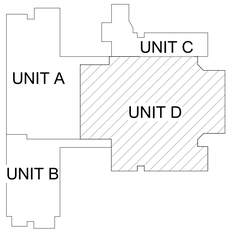
A3

BASE BID: REMOVE LIGHT FIXTURES AS SHOWN AND SALVAGE FOR REINSTALLATION IN THE SAME LOCATIONS IN THE NEW CEILING.

ALTERNATE #2: REFER TO DRAWING E 201B AND E 420 FOR NEW LIGHT FIXTURES, CONTROLS, DETAILS, AND SCHEDULES.

THIS DRAWING SHEET IS INTENDED TO BE PLOTTED IN COLOR. IF THIS TEXT APPEARS IN BLACK AND WHITE, IT IS PLOTTED INCORRECTLY. DISCARD AND OBTAIN AN ACCURATE DRAWING

EDWARDSBURG MIDDLE SCHOOL



KEY PLAN
SCALE: NO SCALE

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ADDENDUM 02	02/06/26

PROJECT TITLE
EDWARDSBURG MIDDLE SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

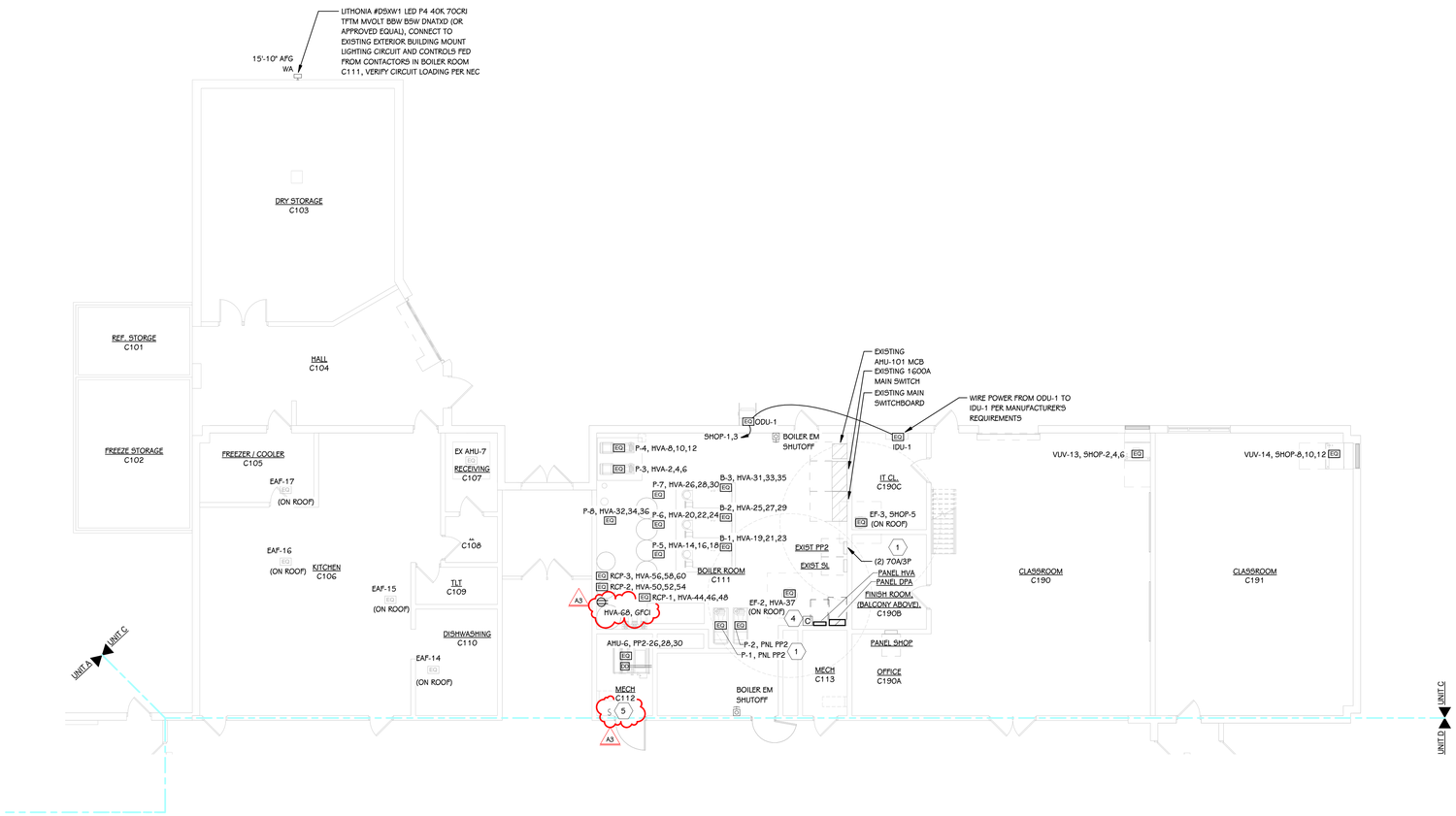
Edwardsburg, Michigan

SHEET TITLE
FIRST FLOOR LIGHTING DEMOLITION PLAN - UNIT D

DATE
JANUARY 16, 2026

SHEET NUMBER
ED 201D
21-201.041

DRAWN BY: XXX 2/18/2026 12:39:56 AM



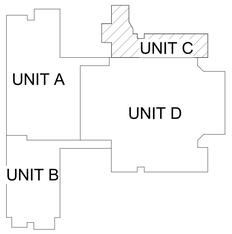
FIRST FLOOR POWER PLAN - UNIT C
1/8" = 1'-0"

KEYED NOTES - ELECTRICAL - POWER

1. REUSE EXISTING CIRCUIT BREAKER FROM REMOVED MECHANICAL EQUIPMENT, PROVIDE NEW WIRE AND CONDUIT FROM EXISTING CIRCUIT BREAKER TO NEW EQUIPMENT.
2. REUSE EXISTING CIRCUIT(S) FOR NEW CONNECTION(S).
3. MOVE DATA DROP TO NEW LOCATION.
4. CONTACTOR WIRED TO DISCONNECT BOILER CIRCUITS UPON BOILER EMERGENCY SHUTOFF SWITCH(ES) ACTIVATION PER DETAIL 1/E411.
5. REINSTALL EXISTING SWITCH, RECONNECT TO THE EXISTING LIGHTING CIRCUIT.

A3

EDWARDSBURG MIDDLE SCHOOL



KEY PLAN
SCALE: NO SCALE

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PROJECT TITLE
EDWARDSBURG MIDDLE SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
FIRST FLOOR POWER PLAN - UNIT C

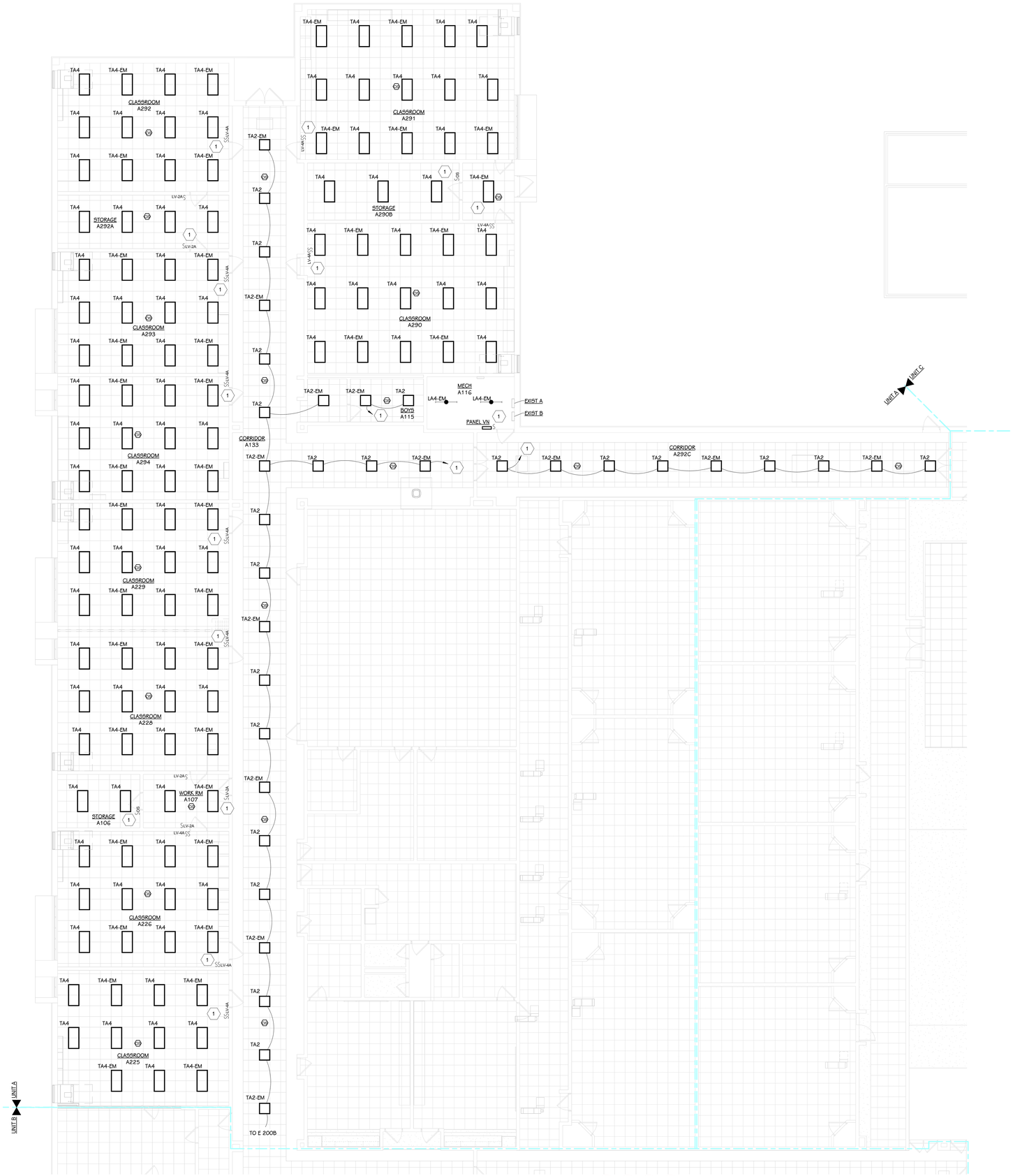
DATE
JANUARY 16, 2026

SHEET NUMBER
E 101C
21-201.041

DRAWN BY: XXX 2/18/2026 12:39:56 AM

KEYED NOTES - ELECTRICAL - LIGHTING

1. CONNECT NEW LIGHTING TO THE EXISTING LIGHTING CIRCUIT IN THIS AREA.
2. FIXTURE TO BE INSTALLED IN THE SAME LOCATION AS THE FIXTURE BEING REMOVED.
3. EXISTING AUDITORIUM LIGHTING AND CONTROLS TO REMAIN. FIELD VERIFY EXISTING CONDITIONS FOR THE CONTROLS AND ENSURE THEY ARE CONTROLLED SEPARATELY FROM THE CAFETERIA LIGHTING.
4. EXISTING LIGHT FIXTURES TO REMAIN, PROVIDE NEW OCCUPANCY SENSOR AND CONNECT TO CORRIDOR CONTROLS. PROVIDE NEW ON/OFF POWER PACK IF NEEDED TO INTERFACE WITH FLUORESCENT LIGHTING. REMOVE EXISTING SWITCHES AND PROVIDE NEW BLANK COVER.



FIRST FLOOR LIGHTING PLAN - UNIT A - ALTERNATE #2 A3

1/8" = 1'-0"

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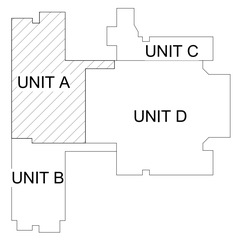
EDWARDSBURG MIDDLE SCHOOL



KEY PLAN

SCALE: NO SCALE

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PROJECT TITLE
EDWARDSBURG MIDDLE SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
FIRST FLOOR LIGHTING PLAN - UNIT A - ALTERNATE #2 A3

DATE
JANUARY 16, 2026

SHEET NUMBER
E 201A
21-201.041

KEYED NOTES - ELECTRICAL - LIGHTING

1. CONNECT NEW LIGHTING TO THE EXISTING LIGHTING CIRCUIT IN THIS AREA.
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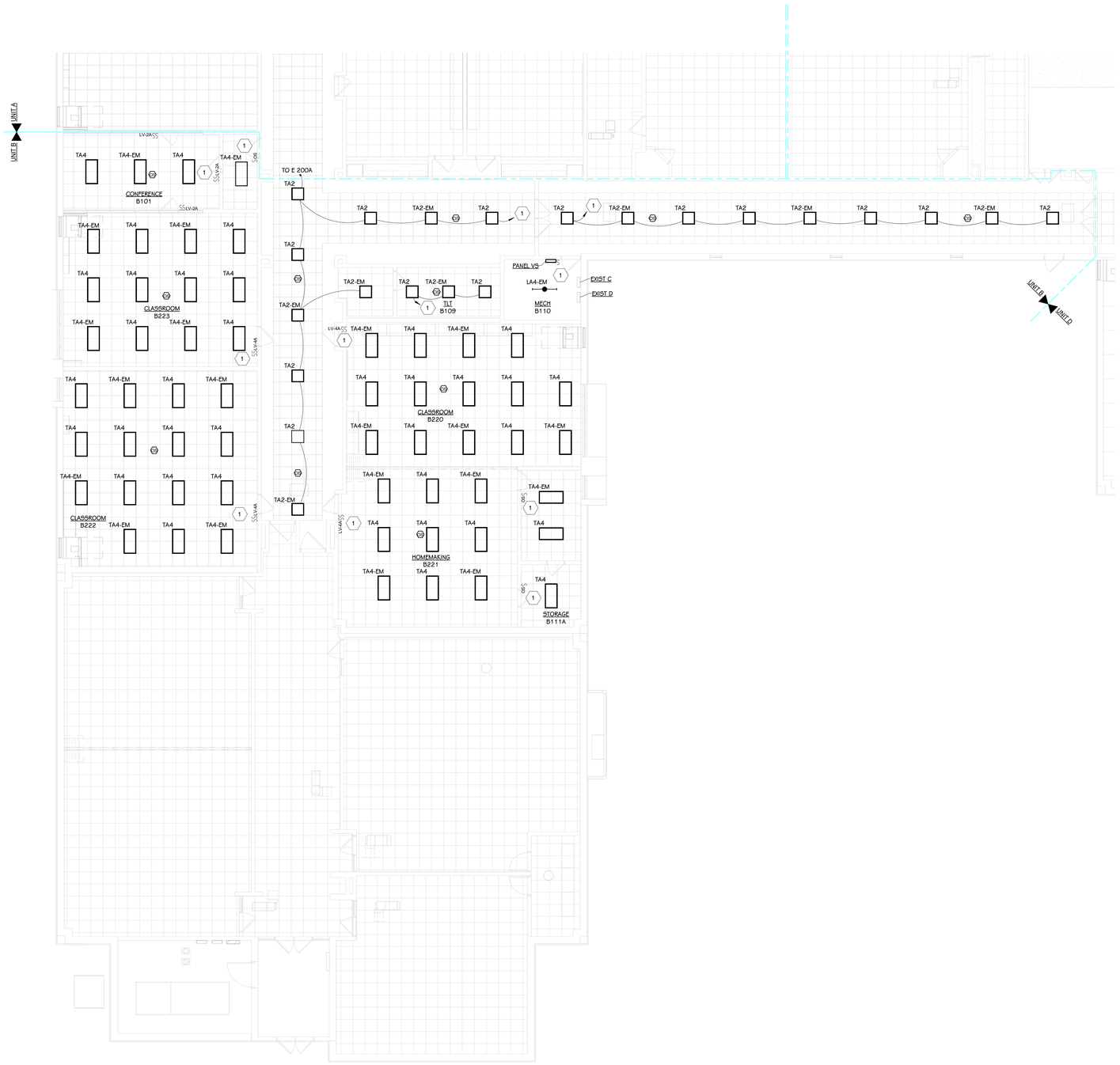
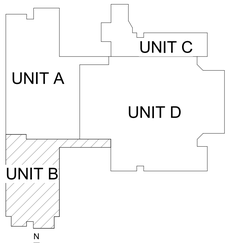


FIRST FLOOR LIGHTING PLAN - UNIT B - ALTERNATE #2 A3
1/8" = 1'-0"

EDWARDSBURG MIDDLE SCHOOL



KEY PLAN
SCALE: NO SCALE

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PROJECT TITLE
EDWARDSBURG MIDDLE SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
FIRST FLOOR LIGHTING PLAN - UNIT B - ALTERNATE #2 A3

DATE
JANUARY 16, 2026

SHEET NUMBER
E 201B
21-201.041

DRAWN BY: XXX 2/18/2026 12:40:09 AM

KEYED NOTES - ELECTRICAL - LIGHTING

1. CONNECT NEW LIGHTING TO THE EXISTING LIGHTING CIRCUIT IN THIS AREA.
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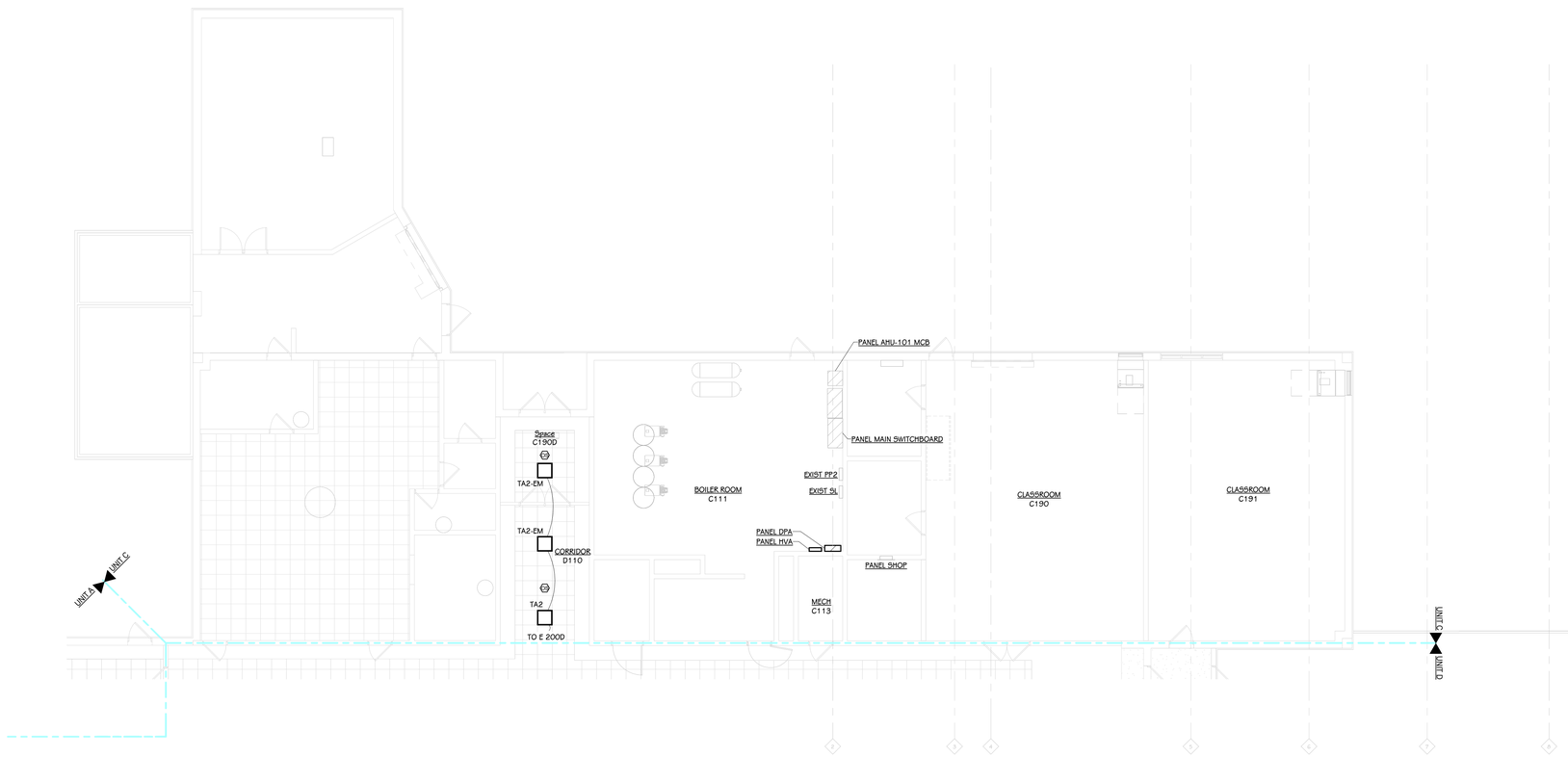
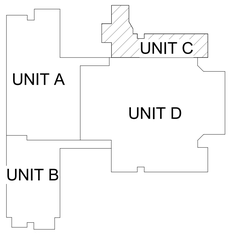


FIRST FLOOR LIGHTING PLAN - UNIT C - ALTERNATE #2 A3

1/8" = 1'-0"

EDWARDSBURG MIDDLE SCHOOL



KEY PLAN

SCALE: NO SCALE

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ADDENDUM 02	02/06/26

PROJECT TITLE
EDWARDSBURG MIDDLE SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
FIRST FLOOR LIGHTING PLAN - UNIT C - ALTERNATE #2 A3

DATE
JANUARY 16, 2026

SHEET NUMBER
E 201C
21-201.041

DRAWN BY: XXX 2/18/2026 12:40:01 AM

KEYED NOTES - ELECTRICAL - LIGHTING

1. CONNECT NEW LIGHTING TO THE EXISTING LIGHTING CIRCUIT IN THIS AREA.
2. FIXTURE TO BE INSTALLED IN THE SAME LOCATION AS THE FIXTURE BEING REMOVED.
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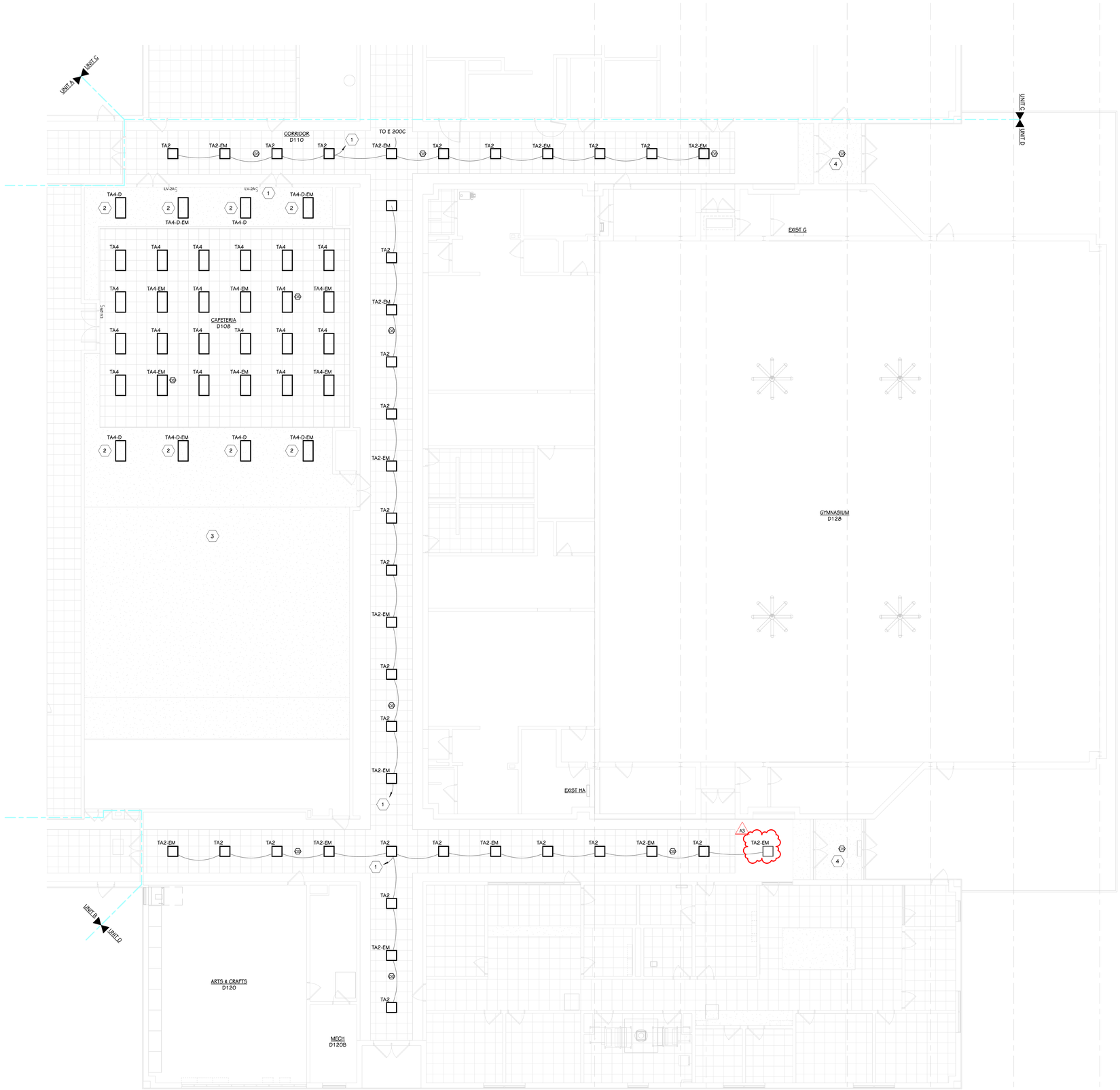
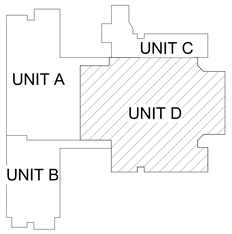


FIRST FLOOR LIGHTING PLAN - UNIT D - ALTERNATE #2 A3
1/8" = 1'-0"

EDWARDSBURG MIDDLE SCHOOL



KEY PLAN
SCALE: NO SCALE

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ISSUED FOR	DATE
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ADDENDUM 02	02/06/26

PROJECT TITLE
EDWARDSBURG MIDDLE SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
FIRST FLOOR LIGHTING PLAN - UNIT D - ALTERNATE #2 A3

DATE
JANUARY 16, 2026

SHEET NUMBER
E 201D
21-201.041

DRAWN BY: XXX 2/18/2026 12:45:07 AM

LIGHT FIXTURE SCHEDULE

TYPE	DESCRIPTION	MOUNTING	CEILING TYPE	COLOR TEMP	WATTS	MANUFACTURER	NOTES
LA4	INDUSTRIAL PENDANT LINEAR, 4' - 0" LONG	PENDANT	GYP DRYWALL	4000K	19 VA	LITHONIA LIGHTING: CLX L48 3000LM SEF FDL MVOLT GZ1 40K 80CRI WH ZACVH M100	1, 2
SA4*	SURFACE LINEAR, 4' - 0" LONG	SURFACE	ACOUSTIC GRID	4000K	19 VA	LITHONIA LIGHTING: CLX L48 3000LM SEF FDL MVOLT GZ1 40K 80CRI WH	1, 2
TA2	RECESSED TROFFER, 2' - 0" LONG	RECESSED			29 VA	LITHONIA LIGHTING: 2GTL2 33L GZ1 LP840	1, 2
TA2	RECESSED TROFFER, 2' - 0" LONG	RECESSED	ACOUSTIC GRID	4000K	29 VA	LITHONIA LIGHTING: 2GTL2 33L GZ1 LP840	1, 2
TA4	RECESSED TROFFER, 4' - 0" LONG	RECESSED	ACOUSTIC GRID	4000K	30 VA	LITHONIA LIGHTING: 2GTL4 40L GZ1 LP840	1, 2, 3
TA4-D	RECESSED TROFFER, 4' - 0" LONG	RECESSED	GYP DRYWALL	4000K	30 VA	LITHONIA LIGHTING: 2GTL4 40L GZ1 LP840	1, 2, 3

* ALL LED FIXTURES TO HAVE WARRANTY TO MEET OR EXCEED WARRANTY INCLUDED IN BASIS OF DESIGN. FIXTURES LISTED AS EQUALS SHALL MEET DELIVERED LUMENS, CRI, EFFICACY AND OPTIONS OF THAT SPECIFIED. REFER TO SPECIFICATIONS 265100 AND 265600 FOR ADDITIONAL REQUIREMENTS.

* FIELD COORDINATE AND FIELD MEASURE FOR CUSTOM LENGTH FIXTURES, LENGTHS PROVIDED ARE ROUNDED AND DEPEND ON FIELD CONDITIONS.

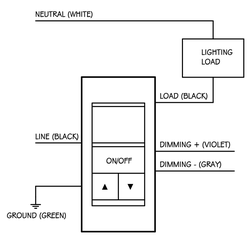
1 THE MOUNTING DESCRIPTION IS GENERAL. REFER TO SHOP DRAWINGS AND MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR SPECIFIC MOUNTING DETAILS.

2 PROVIDE A 10W INTEGRAL BATTERY BACKUP FOR FIXTURES LABELED AS "-EM".

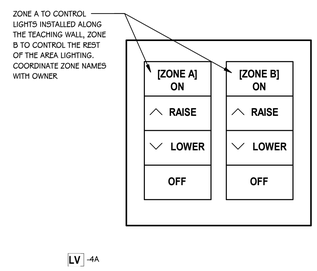
3 PROVIDE A DRYWALL CEILING MOUNTING ACCESSORY.

LIGHTING CONTROL SCHEDULE

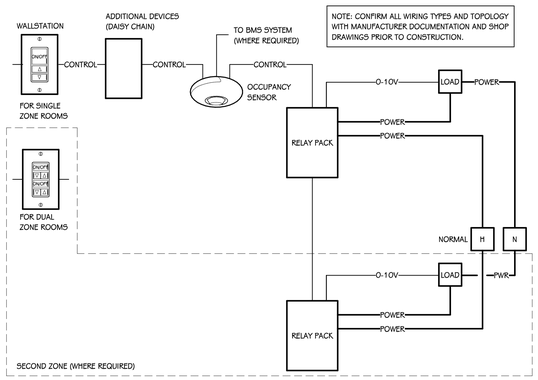
ROOM #	ROOM NAME	AREA	ALLOWANCES (2019 ASHRAE)		ACTUAL LIGHTING POWER		OCCUPANCY SENSOR		MANUAL CONTROL	
			LPD	WATTS	LPD	WATTS	AUTO ON	AUTO OFF	SWITCH REQUIRED	DIMMER
A107	WORK RM	160	0.74 W/ft²	118 VA	0.38 W/ft²	60 VA	50%	100% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
A290B	STORAGE	303	0.38 W/ft²	115 VA	0.30 W/ft²	90 VA	-	100% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
A115	BOYS	110	0.63 W/ft²	69 VA	0.52 W/ft²	57 VA	100%	100% AFTER 20 MINS	YES	-
B109	TLT	136	0.63 W/ft²	86 VA	0.63 W/ft²	86 VA	100%	100% AFTER 20 MINS	YES	-
A292B	CORRIDOR	1110	0.41 W/ft²	455 VA	0.23 W/ft²	257 VA	100%	50% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
A292C	CORRIDOR	1069	0.41 W/ft²	438 VA	0.24 W/ft²	257 VA	100%	50% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
D108	CAFETERIA	6017	0.40 W/ft²	2407 VA	0.16 W/ft²	960 VA	50%	100% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
A133	CORRIDOR	4302	0.41 W/ft²	1764 VA	0.22 W/ft²	944 VA	100%	50% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
D110	CORRIDOR	5479	0.41 W/ft²	2246 VA	0.20 W/ft²	1115 VA	100%	50% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
A116	MECH	160	0.43 W/ft²	69 VA	0.23 W/ft²	37 VA	-	-	YES	-
B101	CONFERENCE	325	0.97 W/ft²	315 VA	0.28 W/ft²	90 VA	50%	100% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
A226	CLASSROOM	811	0.71 W/ft²	576 VA	0.44 W/ft²	360 VA	50%	100% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
A106	STORAGE	154	0.38 W/ft²	58 VA	0.39 W/ft²	60 VA	-	100% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
A294	CLASSROOM	736	0.71 W/ft²	523 VA	0.49 W/ft²	360 VA	50%	100% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
A293	CLASSROOM	725	0.71 W/ft²	515 VA	0.50 W/ft²	360 VA	50%	100% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
A292A	STORAGE	320	0.38 W/ft²	122 VA	0.38 W/ft²	120 VA	-	100% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
A292	CLASSROOM	766	0.71 W/ft²	544 VA	0.47 W/ft²	360 VA	50%	100% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
B110	MECH	127	0.43 W/ft²	54 VA	0.15 W/ft²	19 VA	-	-	YES	-
B111A	STORAGE	100	0.38 W/ft²	38 VA	0.30 W/ft²	30 VA	-	100% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
A229	CLASSROOM	761	0.71 W/ft²	540 VA	0.47 W/ft²	360 VA	50%	100% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
A228	CLASSROOM	839	0.71 W/ft²	596 VA	0.43 W/ft²	360 VA	50%	100% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
B221	HOMEMAKING	775	0.71 W/ft²	550 VA	0.35 W/ft²	270 VA	50%	100% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
B220	CLASSROOM	913	0.71 W/ft²	648 VA	0.46 W/ft²	420 VA	50%	100% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
A290	CLASSROOM	1087	0.71 W/ft²	772 VA	0.41 W/ft²	450 VA	50%	100% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
A225	CLASSROOM	809	0.71 W/ft²	574 VA	0.41 W/ft²	330 VA	50%	100% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
B223	CLASSROOM	809	0.71 W/ft²	574 VA	0.45 W/ft²	360 VA	50%	100% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
B222	CLASSROOM	1032	0.71 W/ft²	733 VA	0.44 W/ft²	450 VA	50%	100% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
A291	CLASSROOM	1116	0.71 W/ft²	792 VA	0.40 W/ft²	450 VA	50%	100% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
1ST FLOOR WEST		31049		16292 VA		9073 VA				
Grand total		31049		16292 VA		9073 VA				



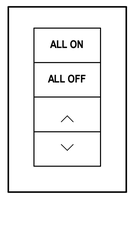
3 / E 420 WALL SWITCH OCCUPANCY SENSOR WIRING DIAGRAM
SCALE: NONE



1 / E 420 DUAL ZONE DIMMING CONTROLLER
SCALE: NONE



4 / E 420 OCCUPANCY SENSOR WIRING DIAGRAM
SCALE: NONE



2 / E 420 SINGLE ZONE - 1 GANG DIMMING CONTROLLER
SCALE: NONE

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ISSUED FOR	DATE
ADDENDUM 03	02/17/26
ADDENDUM 02	02/06/26

PROJECT TITLE
EDWARDSBURG MIDDLE SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
LIGHTING SCHEDULES AND DETAILS - ALTERNATE #2

A3

DATE
JANUARY 16, 2026

SHEET NUMBER
E 420
21-201.041

DRAWN BY: XXX 2/18/2026 12:40:07 AM

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ADDENDUM NO. 3

DATE OF ISSUANCE: **February 17, 2026**

PROJECT: **Edwardsburg High School – Mechanical Upgrades**
69358 Section St.
Edwardsburg, MI 49112

OWNER: **Edwardsburg Public Schools**

ARCHITECT'S PROJECT NO.: 21-201.061

ORIGINAL BID ISSUE DATE: January 16, 2026

SCOPE OF WORK
This Addendum includes changes to, or clarifications of, the original Bidding Documents and any previously issued addenda, and shall be included in the Bid. All of these Addendum items form a part of the Contract Documents. The Bidder shall acknowledge receipt of this Addendum in the appropriate space provided on the Bid Form. Failure to do so may result in disqualification of the Bid.

DOCUMENTS INCLUDED IN THIS ADDENDUM
This Addendum includes **3** pages of text and the following documents:

- Bidding Documents: **None**
- Contract Conditions: **None**
- Specification Sections: **01 2300, 23 6200, 28 4600**
- Drawings**: G 001, AD 101D, AD 201D, AD 301, A 101D, A 201D, A 301, A 321, MD 101D, M 101, M 101C, M 101D, M 201D, M 301, M 302, M 303, M 501, M 502, ED 101D, ED 201D, E 101D, E 201D, E 401, E 402, E 420, P 101D, P 501**

CHANGES TO PREVIOUSLY ISSUED ADDENDA

None.

CHANGES TO BIDDING REQUIREMENTS

None.

CHANGES TO CONTRACT CONDITIONS

None.

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CHANGES TO SPECIFICATIONS

ADD-3 Item No. S-1 - Table of Contents Spec Section

Provided updated table of contents with new spec sections.

Removed spec section 07 2500 weather barriers

ADD-3 Item No. S-2 - Added specification section for Electrical
Refer to Specification Section: 28 4600 Fire Detection and Alarm.

ADD-3 Item No. S-3 - Revised specification section 23 6200
Added mounting requirements for condensing units 5 tons and smaller.

CHANGES TO DRAWINGS

ADD-3 Item No. D-1 - Classroom D130 VUV location
Shifted location of VUV to SW corner due to location of floor access to the tunnel. M 101 overall plan updated to show shifted location. M 101D shows ductwork changes based on VUV shift.

ADD-3 Item No. D-2 - Gym Louvers
Modifications to 4 louvers in Gym D138. Refer to demolition ceiling plan AD 201D and reflected ceiling plan A 201D. Added note on demolition plan and new plan stating what sheets to look for new work.
A 321 shows typical elevation of new louvers
MD 101D & M 101D Showing louver removal and installation of new louvers and relief dampers.

ADD-3 Item No. D-3 - Boiler Room Pumps

Showed demolition of pumps 1 through 8 in the boiler room and noted to maintain the existing circuit. Added new connections for identically sized pumps and noted to reconnect to existing circuit. Refer to drawings ED 101D and E 101D.

M 201D Added pump replacement criteria.

ADD-3 Item No. D-4 - Mechanical Mezzanine Air Handling Units

Showed demolition of AHU 1 through 4 in the mechanical mezzanines. Added new connections and circuiting for new AHUs and associated pumps. Updated the one-line diagram and electrical schedules to show new circuits. Refer to drawings ED 101D and E 101D for connection locations and drawings E 401 and E 402 for one-line and schedule changes.

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M 302 showing removal and installation of new AHU-3&4. Issued new sheet M 303 showing removal and installation of AHU-1 & 2. M 501 added AHU 1-4 schedule. M 502 added recirculation pumps serving AHU 1-4. Refer to G 001 for updated drawing index showing M 303.

ADD-3 Item No. D-5 - Lighting Alternate Clarifications

Added a note describing the base bid work for lighting and changed the new lighting drawing titles to include Alternate #2 to clarify base bid vs alternate work. Moved lighting in the mechanical mezzanine from Drawing E 201D to E 101D and added a note to show that it is part of the base bid work. Moved the lighting fixture schedule from drawing E 402 to drawing E 420 and noted that fixture type WLA is part of the base bid. Refer to drawing ED 201D for base bid vs alternate note, drawing E 101D for mechanical mezzanine base bid lighting, E 201D and E 420 for Alternate #2 work. Refer to G 001 for updated drawing index.

ADD-3 Item No. D-6 - Plumbing Water Filtration

Added domestic water filtration system equipment to the mechanical room and keynote on P 101D. Added schedule and detail on P 501.

ADD-3 Item No. D-7 - CU Tag Clarification

M 101C Revised CU tag serving HUV-03.

ADD-3 Item No. D-8 - Damper Actuator

M 301 Added keynote to replace actuator.

END OF ADDENDUM.

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SECTION 01 2300 - ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for alternates.

1.2 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if the Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternates into the Work. No other adjustments are made to the Contract Sum.

1.3 PROCEDURES

A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Execute accepted alternates under the same conditions as other work of the Contract.

C. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Middle School

1. Alternate No. 01
   ~~a. Base Bid: Remove and salvage and safely store ceiling tiles and grid to be reinstalled as indicated on drawings.~~
   ~~b. Alternate: Provide new 2x2 ceiling tile and grid as indicated on drawings.~~

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2. Alternate No. 02
   a. Base Bid: Remove and salvage and safely store light fixtures to be reinstalled as indicated on drawings.
   b. Alternate: Provide new light fixtures and controls as indicated on drawings.

B. High School

1. Alternate No. 01 – Not Used
   ~~a. Base Bid: Remove and salvage and safely store ceiling tiles and grid to be reinstalled as indicated on drawings.~~
   ~~b. Alternate: Provide new 2x2 ceiling tile and grid as indicated on drawings.~~

2. Alternate No. 02
   a. Base Bid: Remove and salvage and safely store light fixtures to be reinstalled as indicated on drawings.
   b. Alternate: Provide new light fixtures and controls as indicated on drawings.

END OF SECTION 01 2300

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SECTION 23 6200 - PACKAGED COMPRESSOR AND CONDENSER UNITS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes air-cooled condensing units.

1.2 ACTION SUBMITTALS

A. Product Data: For each condensing unit, include rated capacities, operating characteristics, furnished specialties, and accessories. Include equipment dimensions, weights and structural loads, required clearances, method of field assembly, components, and location and size of each field connection.

1. Wiring Diagrams: Power, signal, and control wiring.

B. LEED Submittals:

1. Product Data for Prerequisite EA 2: Documentation indicating that units comply with applicable requirements in ASHRAE/IESNA 90.1.
2. Product Data for Credit EA 4: Documentation indicating that compressor and condenser units and refrigerants comply.

C. Shop Drawings: Signed and sealed by a qualified professional engineer showing the required refrigeration piping design and including the following:

1. Liquid and vapor pipe sizes.
2. Refrigerant specialties.
3. Piping including connections, oil traps, and double risers.

1.3 INFORMATIONAL SUBMITTALS

A. Field quality-control test reports.

B. Warranty: Special warranty specified in this Section.

1.4 CLOSEOUT SUBMITTALS

A. Operation and maintenance data.

1.5 QUALITY ASSURANCE

A. Product Options: Drawings indicate size, profiles, and dimensional requirements of condensing units and are based on the specific system indicated. Refer to Division 01 Section "Product Requirements."

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B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. Fabricate and label refrigeration system according to ASHRAE 15, "Safety Code for Mechanical Refrigeration."

D. ASHRAE/IESNA 90.1 Compliance: Applicable requirements in ASHRAE/IESNA 90.1, Section 6 - "Heating, Ventilating, and Air-Conditioning."

1.6 COORDINATION

A. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified in Division 03.

B. Coordinate installation of roof curbs, equipment supports, and roof penetrations. These items are specified in Division 07 Section "Roof Accessories."

C. Coordinate installation of units with steel mounting frames and roof penetrations.

D. Coordinate location of piping and electrical rough-ins.

1.7 WARRANTY

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

1. Failures include, but are not limited to, the following:
   a. Compressor failure.
   b. Condenser coil leak.

2. Warranty Period: Four years from date of Substantial Completion.
3. Warranty Period: Four years from date of Substantial Completion.
4. Warranty Period (Compressor Only): Five years from date of Substantial Completion.
5. Warranty Period (Condenser Coil Only): Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

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2.2 CONDENSING UNITS, AIR COOLED, 1 TO 5 TONS

A. Manufacturers:

1. Carrier.
2. Trane.
3. JCI/York.

B. Description: Factory assembled and tested, consisting of compressor, condenser coil, fan, motors, refrigerant reservoir, and operating controls.

C. Compressor: Scroll, hermetically sealed, with rubber vibration isolators.

1. Motor: Single speed, and includes thermal- and current-sensitive overload devices, start capacitor, relay, and contactor.
2. Two-Speed Compressor: Include manual-reset, high-pressure switch and automatic-reset, low-pressure switch.
3. Accumulator: Suction tube.
4. Refrigerant Charge:
5. Refrigerant: R-454b

D. Condenser Coil: Seamless copper-tube, aluminum-fin coil; circuited for integral liquid subcooler, with removable drain pan and brass service valves with service ports.

E. Condenser Fan: Direct-drive, aluminum propeller fan; with permanently lubricated, totally enclosed fan motor with thermal-overload protection and ball bearings.

F. Accessories:

1. Crankcase heater.
2. Cycle Protector: Automatic-reset timer to prevent rapid compressor cycling.
3. Electronic programmable thermostat to control condensing unit and evaporator fan.
4. Evaporator Freeze Thermostat: Temperature-actuated switch that stops unit when evaporator reaches freezing temperature.
5. Filter-dryer.
6. High-Pressure Switch: Automatic-reset switch cycles compressor off on high refrigerant pressure.
7. Liquid-line solenoid.
8. Low Ambient Controller: Cycles condenser fan to permit operation down to 0 deg F with time-delay relay to bypass low-pressure switch.
9. Low Ambient Controller: Controls condenser fan speed to permit operation down to minus 20 deg F with time-delay relay to bypass low-pressure switch.
10. Low-Pressure Switch: Automatic-reset switch cycles compressor off on low refrigerant pressure.
11. PE mounting base to provide a permanent foundation.
12. Precharged and insulated suction and liquid tubing.
13. Sound Hood: Wraps around sound attenuation cover for compressor.
14. Thermostatic expansion valve.
    Time-Delay Relay: Continues operation of evaporator fan after compressor shuts off.

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G. Unit Casing: Galvanized steel, finished with baked enamel; with removable panels for access to controls, weep holes for water drainage, and mounting holes in base. Mount service valves, fittings, and gage ports on exterior of casing.

2.3 CONDENSING UNITS, AIR COOLED, 6 TO 120 TONS

A. Manufacturers:

1. Carrier.
2. Daikin/McQuay.
3. Trane.
4. JCI/York.

B. Description: Factory assembled and tested, air cooled; consisting of casing, compressors, condenser coils, condenser fans and motors, and unit controls.

C. Compressor: Hermetic or semihermetic compressor designed for service with crankcase sight glass, crankcase heater, and backseating service access valves on suction and discharge ports.

1. Capacity Control: Cylinder unloading.
2. Refrigerant: R-454b

D. Condenser Coil: Seamless copper-tube, aluminum-fin coil, including subcooling circuit and backseating liquid-line service access valve. Factory pressure test coils, then dehydrate by drawing a vacuum and fill with a holding charge of nitrogen or refrigerant.

E. Condenser Fans: Propeller-type vertical discharge; either directly or belt driven. Include the following:

1. Permanently lubricated ball-bearing motors.
2. Separate motor for each fan.
3. Dynamically and statically balanced fan assemblies.

F. Operating and safety controls include the following:

1. Manual-reset, high-pressure cutout switches.
2. Automatic-reset, low-pressure cutout switches.
3. Low oil pressure cutout switch.
4. Compressor-winding thermostat cutout switch.
5. Three-leg, compressor-overload protection.
6. Control transformer.
7. Magnetic contactors for compressor and condenser fan motors.
8. Timer to prevent excessive compressor cycling.

G. Accessories:

1. Electronic programmable thermostat to control condensing unit and evaporator fan.
2. Low Ambient Controller: Cycles condenser fan to permit operation down to 0 deg F with time-delay relay to bypass low-pressure switch.

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3. Low Ambient Controller: Controls condenser fan speed to permit operation down to minus 20 deg F with time-delay relay to bypass low-pressure switch.
4. Gage Panel: Package with refrigerant circuit suction and discharge gages.
5. Hot-gas bypass kit.
6. Part-winding-start timing relay, circuit breakers, and contactors.
7. Phase monitor to protect equipment from phase loss, reversal, and imbalance

H. Unit Casings: Designed for outdoor installation with weather protection for components and controls and with removable panels for required access to compressors, controls, condenser fans, motors, and drives. Additional features include the following:

1. Steel, galvanized or zinc coated, for exposed casing surfaces; treated and finished with manufacturer's standard paint coating.
2. Perimeter base rail with forklift slots and lifting holes to facilitate rigging.
3. Gasketed control panel door.
4. Nonfused disconnect switch, factory mounted and wired, for single external electrical power connection.
5. Condenser coil hail guard to protect coil from physical damage.

2.4 MOTORS

A. General requirements for motors are specified in Division 23 Section "Common Motor Requirements for HVAC Equipment."

1. Motor Sizes: Minimum size as indicated. If not indicated, large enough so driven load will not require motor to operate in service factor range above 1.0.
2. Controllers, Electrical Devices, and Wiring: Electrical devices and connections are specified in Division 26 Sections.

2.5 SOURCE QUALITY CONTROL

A. Verification of Performance: Rate condensing units according to ARI 210/240, ARI 340/360, or ARI 365.

1. Energy Efficiency: Equal to or greater than prescribed by ASHRAE/IESNA 90.1, "Energy Efficient Design of New Buildings except Low-Rise Residential Buildings."

B. Test and inspect shell and tube condensers according to ASME Boiler and Pressure Vessel Code: Section VIII, Division 1.

C. Testing Requirements: Factory test sound-power-level ratings according to ARI 270.

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 condensing units.

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B. Examine roughing-in for refrigerant piping systems to verify actual locations of piping connections before equipment installation.

C. Examine walls, floors, and roofs for suitable conditions where condensing units will be installed.

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

3.2 INSTALLATION

A. Install units level and plumb, firmly anchored in locations indicated; maintain manufacturer's recommended clearances.

B. Install condensing units on concrete base. Concrete base is specified in Division 23 Section "Common Work Results for HVAC," and concrete materials and installation requirements are specified in Division 03.

C. Concrete Bases:

1. Install dowel rods to connect concrete base to concrete slab. Unless otherwise indicated, install dowel rods on 18-inch centers around full perimeter of the base.
2. For equipment supported on structural slab, install epoxy-coated anchor bolts that extend through concrete base and anchor into structural concrete floor.
3. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
4. Install anchor bolts to elevations required for proper attachment to supported equipment.
5. Install anchor bolts according to anchor-bolt manufacturer's written instructions.

D. Install roof-mounting condensing units on Pate or equivalent equipment curb rails with restrained spring isolators.

E. For 5-ton units and smaller, install roof-mounting compressor-condenser components on polyethylene mounting base. Anchor units to base with removable, cadmium-plated fasteners.

F. Vibration Isolation: Mount condensing units on rubber pads with a minimum deflection of 1/4 inch. Vibration isolation devices and installation requirements are specified in Division 23 Section "Vibration and Seismic Controls for HVAC Piping and Equipment."

G. Vibration Isolation: Mount condensing units on restrained spring isolators with a minimum deflection of. Vibration isolation devices and installation requirements are specified in Division 23 Section "Vibration and Seismic Controls for HVAC Piping and Equipment."

H. Maintain manufacturer's recommended clearances for service and maintenance.

I. Loose Components: Install electrical components, devices, and accessories that are not factory mounted.

3.3 CONNECTIONS

A. Piping installation requirements are specified in other Division 23 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.

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B. Install piping adjacent to machine to allow service and maintenance.

C. Connect precharged refrigerant tubing to unit's quick-connect fittings. Install tubing so it does not interfere with access to unit. Install furnished accessories.

D. Connect refrigerant piping to air-cooled condensing units; maintain required access to unit. Install furnished field-mounted accessories. Refrigerant piping and specialties are specified in Division 23 Section "Refrigerant Piping."

3.4 FIELD QUALITY CONTROL

A. Perform the following field tests and inspections and prepare test reports:

1. Perform electrical test and visual and mechanical inspection.
2. Leak Test: After installation, charge systems with refrigerant and oil and test for leaks. Repair leaks, replace lost refrigerant and oil, and retest until no leaks exist.
3. Operational Test: After electrical circuitry has been energized, start units to confirm proper operation, product capability, and compliance with requirements.
4. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
5. Verify proper airflow over coils.

B. Verify that vibration isolation and flexible connections properly dampen vibration transmission to structure.

C. Remove and replace malfunctioning condensing units and retest as specified above.

3.5 STARTUP SERVICE

A. Complete installation and startup checks according to manufacturer's written instructions and perform the following:

1. Inspect for physical damage to unit casing.
2. Verify that access doors move freely and are weathertight.
3. Clean units and inspect for construction debris.
4. Verify that all bolts and screws are tight.
5. Adjust vibration isolation and flexible connections.
6. Verify that controls are connected and operational.

B. Lubricate bearings on fans.

C. Verify that fan wheel is rotating in the correct direction and is not vibrating or binding.

D. Adjust fan belts to proper alignment and tension.

E. Start unit according to manufacturer's written instructions and complete manufacturer's startup checklist.

F. Measure and record airflow over coils.

G. Verify proper operation of condenser capacity control device.

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H. Verify that vibration isolation and flexible connections properly dampen vibration transmission to structure.

I. After startup and performance test, lubricate bearings and adjust belt tension.

3.6 DEMONSTRATION

A. Train Owner's maintenance personnel to adjust, operate, and maintain condensing units.

END OF SECTION 23 6200

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SECTION 284600 - FIRE DETECTION AND ALARM

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Removal, relocation, and addition of existing fire alarm system components, wiring, and conduit indicated.

1.2 RELATED REQUIREMENTS

A. Section 078400 - Firestopping: Materials and methods for work to be performed by this installer.

1.3 REFERENCE STANDARDS

A. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines; current edition.

B. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

C. IEEE C62.41.2 - IEEE Recommended Practice on Characterization of Surges in Low-Voltage (1000 V and less) AC Power Circuits; 2002 (Corrigendum 2012).

D. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

E. NFPA 72 - National Fire Alarm and Signaling Code; Most Recent Edition Cited by Referring Code or Reference Standard.

F. NFPA 101 - Life Safety Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.4 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Proposal Documents: Submit the following with cost/time proposal:

1. Manufacturer's detailed data sheet for each control unit, initiating device, and notification appliance.

C. Evidence of installer qualifications.

D. Evidence of maintenance contractor qualifications, if different from installer.

E. Inspection and Test Reports:

1. Submit inspection and test plan prior to closeout demonstration.
2. Submit documentation of satisfactory inspections and tests.
3. Submit NFPA 72 "Inspection and Test Form," filled out.

F. Operating and Maintenance Data: See Section 017800 for additional requirements; revise and resubmit until acceptable; have one set available during closeout demonstration:

1. Complete set of specified design documents, as approved by authority having jurisdiction.
2. Additional printed set of project record documents and closeout documents, bound or filed in same manuals.

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3. Contact information for firm that will be providing contract maintenance and trouble call-back service.
4. List of recommended spare parts, tools, and instruments for testing.
5. Replacement parts list with current prices, and source of supply.
6. Detailed troubleshooting guide and large scale input/output matrix.
7. Preventive maintenance, inspection, and testing schedule complying with NFPA 72; provide printed copy and computer format acceptable to Owner.
8. Detailed but easy to read explanation of procedures to be taken by non-technical administrative personnel in the event of system trouble, when routine testing is being conducted, for fire drills, and when entering into contracts for remodeling.

G. Project Record Documents: See Section 017800 for additional requirements; have one set available during closeout demonstration:
1. Complete set of floor plans showing actual installed locations of components, conduit, and zones.
2. "As installed" wiring and schematic diagrams, with final terminal identifications.
3. "As programmed" operating sequences, including control events by device, updated input/output chart, and voice messages by event.

H. Closeout Documents:
1. Certification by manufacturer that the system has been installed in compliance with manufacturer's installation requirements, is complete, and is in satisfactory operating condition.
2. NFPA 72 "Record of Completion", filled out completely and signed by installer and authorized representative of authority having jurisdiction.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Fire Alarm Control Units and Accessories:
1. Provide control units made by the same manufacturer as existing system.

B. Initiating Devices and Notification Appliances:
1. Provide initiating devices and notification appliances made by the same manufacturer as existing system.

C. Substitutions: See Section 016000 - Product Requirements.
1. For other acceptable manufacturers of control units specified, submit product data showing equivalent features and compliance with Contract Documents.
2. For substitution of products by manufacturers not listed, submit product data showing features and certification by Contractor that the design will comply with Contract Documents.

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2.2 FIRE ALARM SYSTEM

A. Fire Alarm System: Provide modifications and extensions to the existing automatic fire detection and alarm system:

1. Provide all components necessary, regardless of whether shown in Contract Documents or not.
2. Protected Premises: Entire building shown on drawings.
3. Comply with the following; where requirements conflict, order of precedence of requirements is as listed:
   a. ADA Standards.
   b. The requirements of the local authority having jurisdiction .
   c. Applicable local codes.
   d. Contract Documents (drawings and specifications).
   e. NFPA 101.
   f. NFPA 72; where the word "should" is used consider that provision mandatory; where conflicts between requirements require deviation from NFPA 72, identify deviations clearly on design documents.
4. Evacuation Alarm: Multiple smoke zones; allow for evacuation notification of any individual zone or combination of zones, in addition to general evacuation of entire premises.
5. General Evacuation Zones: Each smoke zone is considered a general evacuation zone unless otherwise indicated, with alarm notification in all zones on the same floor, on the floor above, and the floor below.
6. Fire Alarm Control Unit: Existing, location indicated on drawings.

B. Power Sources:

1. Primary: Dedicated branch circuits of the facility power distribution system.
2. Secondary: Storage batteries.
3. Capacity: Sufficient to operate entire system for period specified by NFPA 72.

2.3 EXISTING COMPONENTS

A. Existing Fire Alarm System: Remove existing components indicated and incorporate remaining components into new system, under warranty as if they were new; do not take existing portions of system out of service until new portions are fully operational, tested, and connected to existing system.

B. On-Premises Supervising Station: Include as part of this work all modifications necessary to existing supervising station to accommodate new fire alarm work.

C. Clearly label components that are "Not In Service."

D. Remove unused existing components and materials from site and dispose of properly.

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2.4 COMPONENTS

A. General:

1. Provide flush mounted units where installed in finish areas; in unfinished areas, surface mounted unit are acceptable.
2. Provide legible, permanent labels for each control device, using identification used in operation and maintenance data.

B. Fire Alarm Control Units: Analog, addressable type; listed, classified, and labeled as suitable for the purpose intended.

C. Initiating Devices:

1. Addressable Systems:
   a. Addressable Devices: Individually identifiable by addressable fire alarm control unit.
   b. Provide suitable addressable interface modules as indicated or as required for connection to conventional (non-addressable) devices and other components that provide a dry closure output.

D. Notification Appliances:

E. Circuit Conductors: Copper; provide 200 feet extra; color code and label.

F. Surge Protection: In accordance with IEEE C62.41.2 category B combination waveform and NFPA 70; except for optical fiber conductors.

G. Locks and Keys: Deliver keys to Owner.

1. Provide the same standard lock and key for each key operated switch and lockable panel and cabinet; provide 5 keys of each type

H. Instruction Charts: Printed instruction chart for operators, showing steps to be taken when a signal is received (normal, alarm, supervisory, and trouble); easily readable from normal operator's station.

1. Frame: Stainless steel or aluminum with polycarbonate or glass cover.
2. Provide one for each control unit where operations are to be performed.
3. Obtain approval of Owner prior to mounting; mount in location acceptable to Owner.
4. Provide extra copy with operation and maintenance data submittal.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install in accordance with applicable codes, NFPA 72, NFPA 70, and Contract Documents.

B. Conceal all wiring, conduit, boxes, and supports where installed in finished areas.

C. Obtain Owner's approval of locations of devices, before installation.

D. Install instruction cards and labels.

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3.2 INSPECTION AND TESTING FOR COMPLETION

A. Notify Owner 7 days prior to beginning completion inspections and tests.

B. Notify authorities having jurisdiction and comply with their requirements for scheduling inspections and tests and for observation by their personnel.

C. Provide the services of the installer's supervisor or person with equivalent qualifications to supervise inspection and testing, correction, and adjustments.

D. Prepare for testing by ensuring that all work is complete and correct; perform preliminary tests as required.

E. Provide all tools, software, and supplies required to accomplish inspection and testing.

F. Perform inspection and testing in accordance with NFPA 72 and requirements of local authorities; document each inspection and test.

G. Correct defective work, adjust for proper operation, and retest until entire system complies with Contract Documents.

3.3 CLOSEOUT

A. Closeout Demonstration: Demonstrate proper operation of all functions to Owner.

1. Be prepared to conduct any of the required tests.
2. Have at least one copy of operation and maintenance data, preliminary copy of project record drawings, input/output matrix, and operator instruction chart(s) available during demonstration.
3. Have authorized technical representative of control unit manufacturer present during demonstration.
4. Demonstration may be combined with inspection and testing required by authority having jurisdiction; notify authority having jurisdiction in time to schedule demonstration.
5. Repeat demonstration until successful.

END OF SECTION

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EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

CONSTRUCTION DOCUMENTS - BP7

DESIGN TEAM

ARCHITECT/ENGINEER

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Architecture · Engineering · Interiors

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SITE ADDRESS

EDWARDSBURG HIGH SCHOOL
69358 SECTION ST
EDWARDSBURG, MI 49112

REFERENCED CODES

BUILDING:	2021 MICHIGAN BUILDING CODE AND 2012 NFPA 101 LIFE SAFETY CODE
BUILDING:	2021 MICHIGAN REHABILITATION CODE
ENERGY:	2021 MICHIGAN ENERGY CODE
PLUMBING:	2021 MICHIGAN PLUMBING CODE
MECHANICAL:	2021 MICHIGAN MECHANICAL CODE
FUEL GAS:	(IFGC) 2021 INTERNATIONAL FUEL GAS CODE
ELECTRICAL:	2023 NATIONAL ELECTRICAL CODE WITH MICHIGAN AMENDMENTS
BARRIER-FREE:	2021 MICHIGAN BUILDING CODE AND 2017 ICC & C A117.1
USE GROUP:	E AND A-1
CONSTRUCTION TYPE:	TYPE IIB
AUTOMATIC SPRINKLERS:	PARTIALLY SPRINKLED

PROJECT AREA

TOTAL BUILDING AREA:	162,600 SQ. FT.
ALTERATION LEVEL:	LEVEL 1: 1 FOR 1 AHU REPLACEMENT LEVEL 2: 25,237 SQ. FT.

ALTERNATES

ALTERNATE 01: NOT USED

ALTERNATE 02: PROVIDE NEW LIGHTING AND CONTROLS IN LIEU OF REINSTALLING EXISTING LIGHT FIXTURES IN SELECT CLASSROOMS

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G 002 TYPICAL SYMBOLS AND REFERENCES, ABBREVIATIONS, DEVICE ALIGNMENT
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SG 001 STRUCTURAL GENERAL NOTES

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S 301 TYPICAL FRAMING DETAILS

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A 301 EXTERIOR ELEVATIONS
A 302 EXTERIOR ELEVATIONS
A 321 WALL SECTION AND DETAILS

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MG 001 MECHANICAL & PLUMBING GENERAL NOTES, ABBREVIATIONS, AND SYMBOLS

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PD 100 OVERALL PLUMBING DEMOLITION PLAN

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MD 101B FIRST FLOOR MECHANICAL DEMOLITION PLAN - UNIT B
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P 501 PLUMBING SCHEDULES AND DETAILS

MECHANICAL
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M 101B FIRST FLOOR SHEET METAL PLAN - UNIT B
M 101C FIRST FLOOR SHEET METAL PLAN - UNIT C
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M 101E FIRST FLOOR SHEET METAL PLAN - UNIT E
M 101F FIRST FLOOR SHEET METAL PLAN - UNIT F
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M 301 ENLARGED MECHANICAL ROOM PLANS
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M 503 MECHANICAL SCHEDULES AND DETAILS
M 504 MECHANICAL SCHEDULES AND DETAILS
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EG 001 ELECTRICAL SYMBOLS AND GENERAL NOTES

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E 401 ELECTRICAL ONE-LINE DIAGRAM
E 402 ELECTRICAL CONNECTION SCHEDULES
A9 E 420 LIGHTING SCHEDULES AND DETAILS - ALTERNATE #2

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ISSUED FOR	DATE
ADDENDUM 03	02-17-2026
ADDENDUM 02	02-06-2026

PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

DATE
JANUARY 16, 2026

SHEET TITLE
COVER SHEET

SHEET NUMBER
G 001
21-201.061

FIRST FLOOR PLAN - UNIT D
1/8" = 1'-0"

KEYED NOTES - ARCHITECTURAL - DEMOLITION

1. REMOVE LOUVER. REFER TO MECHANICAL
2. SAWCUT & REMOVE EXTERIOR CMU AND BRICK WALL CONSTRUCTION AS REQUIRED TO INSTALL NEW LINTEL AND NEW MECHANICAL UNIT LOUVER. COORDINATE ALL HEIGHTS & SIZES WITH STRUCTURAL AND MECHANICAL. SALVAGE BRICK CLEAN AND INSTALL IN PREVIOUS LOUVER OPENINGS.
3. REMOVE PORTION OF CMU WALL FLOOR TO CEILING TO CONNECT NEW PLUMBING LINES - REFER TO PLUMBING
4. SAWCUT & REMOVE EXTERIOR CMU AND BRICK WALL CONSTRUCTION AS REQUIRED FOR NEW MECHANICAL UNIT LOUVER. SALVAGE AND REUSE EXISTING LINTEL. COORDINATE ALL HEIGHTS & SIZES WITH STRUCTURAL AND MECHANICAL. SALVAGE BRICK CLEAN AND INSTALL IN PREVIOUS LOUVER OPENINGS.
5. REMOVE PORTION OF GYPSUM WALL CONSTRUCTION FLOOR TO CEILING TO CONNECT NEW PLUMBING LINES - REFER TO PLUMBING
6. REMOVE PORTION OF CMU AND GLAZED BLOCK WALL, FLOOR TO CEILING, TO CONNECT NEW PLUMBING LINES. SALVAGE AND REUSE GLAZED BLOCK - REFER TO PLUMBING

ISSUED FOR	DATE
ADDENDUM 03	02-17-2026

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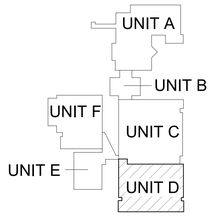
EDWARDSBURG HIGH SCHOOL



KEY PLAN
SCALE: NO SCALE

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PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS
Edwardsburg, Michigan

SHEET TITLE
FIRST FLOOR DEMOLITION PLAN - UNIT D

DATE
JANUARY 16, 2026

SHEET NUMBER
AD 101D
21-201.061

KEYED NOTES - REFLECTED CEILINGS - DEMOLITION

1. REMOVE 4 SALVAGE CEILING TILE AS REQUIRED FOR INSTALLATION OF PLUMBING PIPE & PIPE ENCLOSURE - REFER TO PLUMBING
2. REMOVE SUSPENDED CEILING SYSTEM
3. REMOVE PLASTER CEILING
4. REMOVE PLASTER CEILING COMPLETELY TO INSTALL NEW AHU IN MEZZANINE - REFER TO MECHANICAL AND STRUCTURAL
5. REMOVE EXTERIOR LOUVER

FIRST FLOOR REFLECTED CEILING DEMOLITION PLAN - UNIT D
1/8" = 1'-0"

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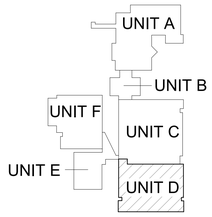
EDWARDSBURG HIGH SCHOOL



KEY PLAN
SCALE: NO SCALE

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PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

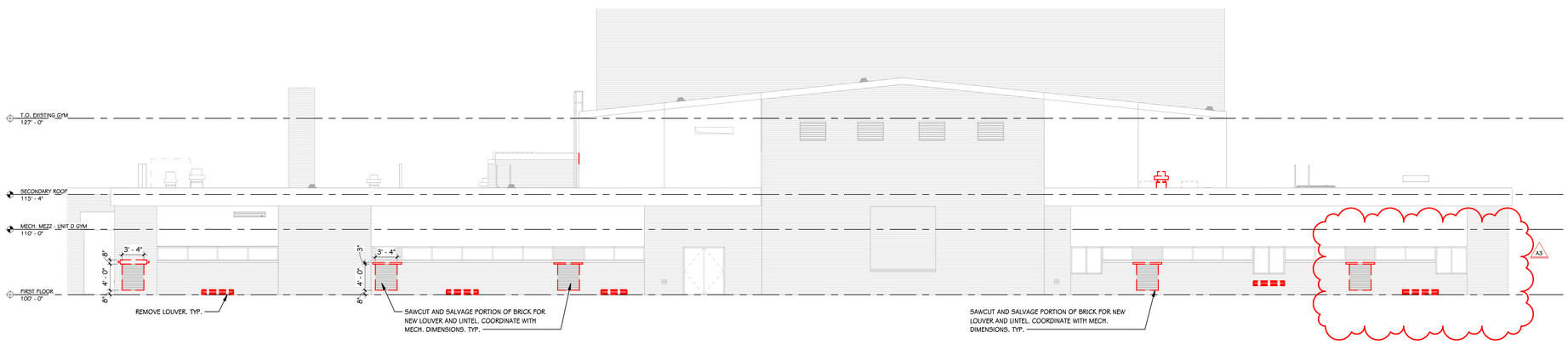
SHEET TITLE
FIRST FLOOR DEMOLITION CEILING PLAN - UNIT D

DATE
JANUARY 16, 2026

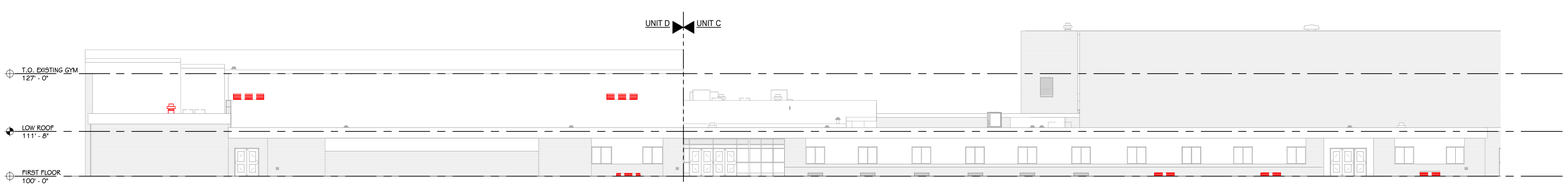
SHEET NUMBER
AD 201D
21-201.061

A / AD 301 WEST DEMOLITION ELEVATION - UNIT C
1/8" = 1'-0"

B / AD 301 WEST DEMOLITION ELEVATION - UNIT D
1/8" = 1'-0"



C / AD 301 SOUTH DEMOLITION ELEVATION - UNIT D
1/8" = 1'-0"



D / AD 301 EAST DEMOLITION ELEVATION - UNIT C + D
1/16" = 1'-0"

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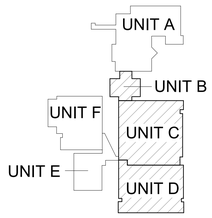
EDWARDSBURG HIGH SCHOOL



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SCALE: NO SCALE

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PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

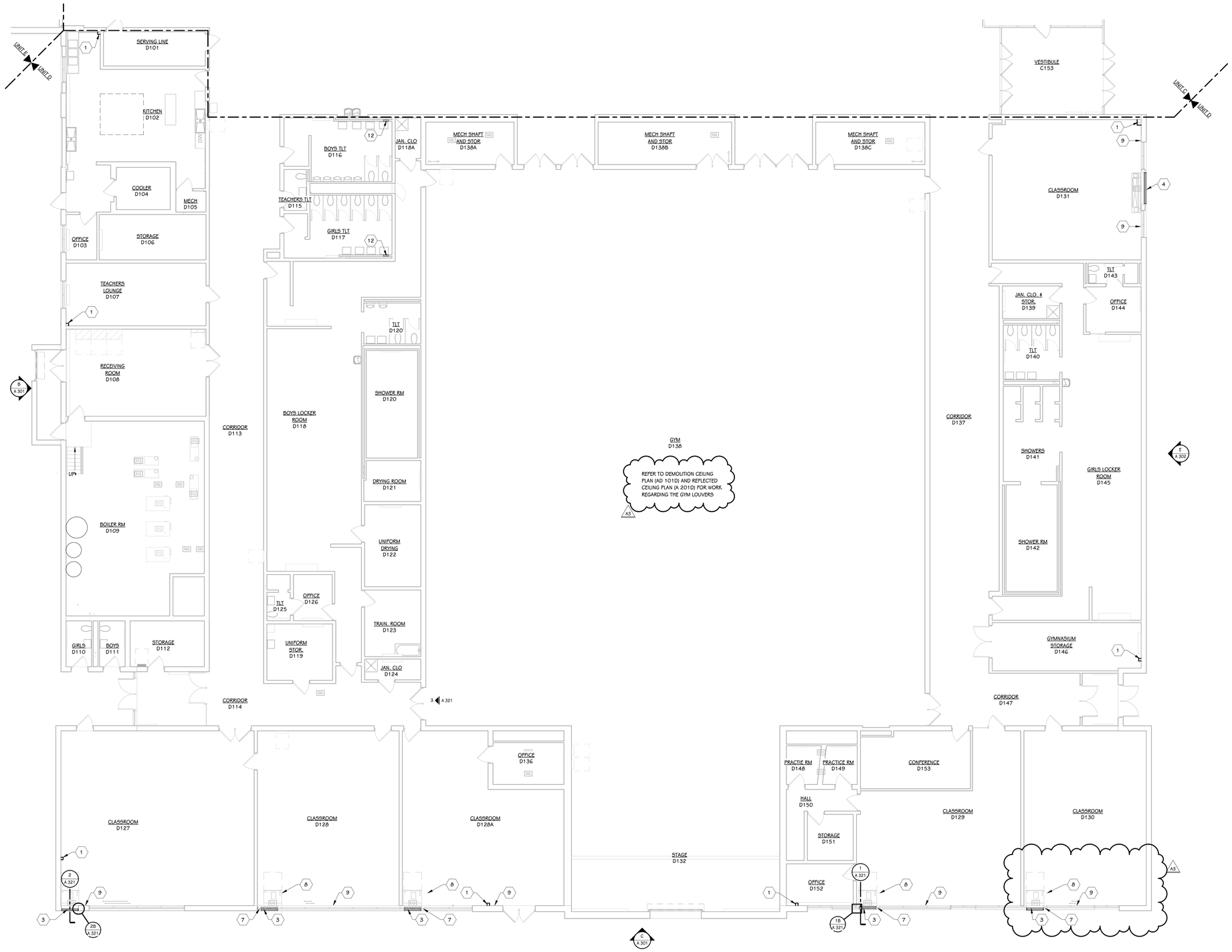
OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
EXTERIOR DEMOLITION ELEVATIONS

DATE
JANUARY 16, 2026

SHEET NUMBER
AD 301
21-201.061



FIRST FLOOR PLAN - UNIT D
1/8" = 1'-0"

NOTES - ARCHITECTURAL

1 REFER TO CODE COMPLIANCE PLAN FOR WALL RATING LINES.

KEYED NOTES - ARCHITECTURAL - CONSTRUCTION

1 METAL PIPE ENCLOSURE FOR NEW PLUMBING LINES FROM CEILING, 20 GAUGE. REFER TO PLUMBING.

2 METAL PIPE ENCLOSURE FOR NEW PLUMBING LINES FROM CEILING, 16 GAUGE. REFER TO PLUMBING.

3 PREFINISHED ALUMINUM LOUVER IN NEW OPENING WITH LINTEL, REFER TO STRUCTURAL

4 PREFINISHED ALUMINUM LOUVER, REUSE EXISTING OPENING AND LINTEL

5 PATCH AND REPAIR GYPSUM WALL CONSTRUCTION BACK TO ORIGINAL CONDITION AT PLUMBING WORK.

6 PATCH AND REPAIR CMU WALL CONSTRUCTION BACK TO ORIGINAL CONDITION AT PLUMBING WORK.

7 WINDOW FILM - BASIS OF DESIGN: MANUFACTURER; LLUMAR. SPECIALTY SERIES; BLACK (NRMM PS2)

8 ALIGN MECHANICAL METAL COVER WITH FRONT EDGE OF MECHANICAL UNIT AND CENTER OF MULLION

9 PAINT ENTIRE WALL TO MATCH EXISTING WALL COLOR

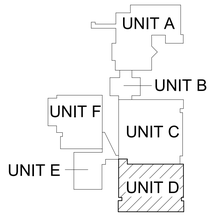
10 TOUCH UP PAINT AT REPLACEMENT OF MECHANICAL UNIT - MATCH ADJACENT WALL

11 PREFINISHED ALUMINUM LOUVER, IN NEW OPENING, REUSE EXISTING LINTEL, REFER TO MECHANICAL

12 PATCH AND REPAIR CMU WALL CONSTRUCTION BACK TO ORIGINAL CONDITION AT PLUMBING WORK, USE SALVAGED GLAZED BLOCK.

ISSUED FOR	DATE
ADDENDUM 03	02-17-2026

EDWARDSBURG HIGH SCHOOL



KEY PLAN
SCALE: NO SCALE

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PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

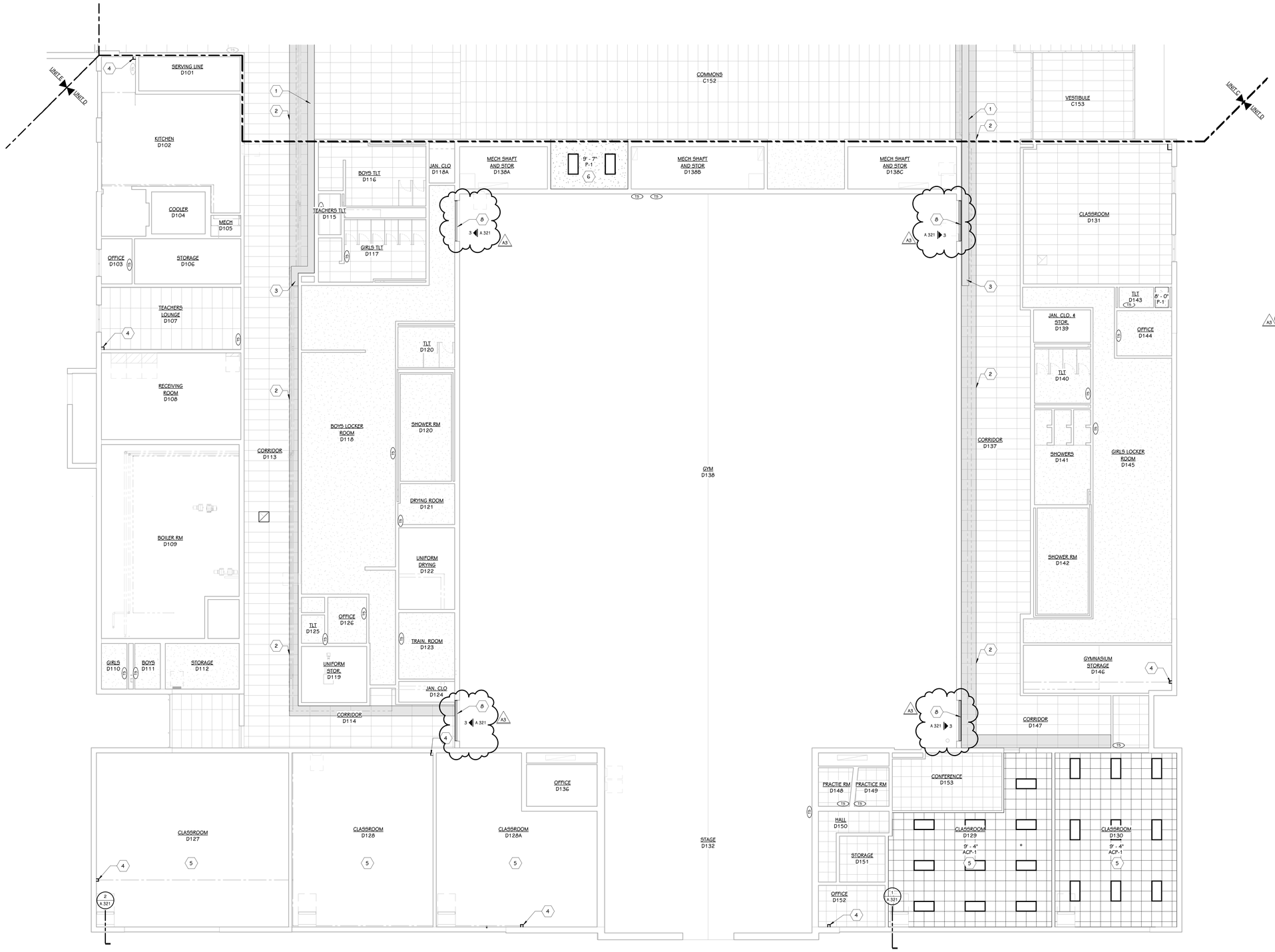
OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
FIRST FLOOR PLAN - UNIT D

DATE
JANUARY 16, 2026

SHEET NUMBER
A 101D
21-201.061



FIRST FLOOR REFLECTED CEILING PLAN - UNIT D
1/8" = 1'-0"

KEY - REFLECTED CEILING

- GYPSUM BOARD
- LAY-IN ACOUSTICAL TILE GRID
- OR — LIGHTING - REFER TO ELECTRICAL LIGHTING PLAN
- MECHANICAL - REFER TO MECHANICAL SHEET METAL PLAN

GENERAL NOTES - REFLECTED CEILINGS

1. WHERE CEILING TILE IS LESS THAN 3" AT PERIMETER OF ROOM PROVIDE A CUT 2x4 TILE IN LIEU OF FULL 2x2 TILE AND SMALL PIECE OF TILE OR DOUBLE GRID - MATCH 2x2 FOR STYLE AND COLOR.

KEYED NOTES - ARCHITECTURAL - REFLECTED CEILING

1. METAL PIPE ENCLOSURE FOR NEW PLUMBING LINES. REFER TO PLUMBING.
2. REINSTALL SALVAGED LAY IN CEILING TILES
3. ROUTE PLUMBING LINES VERTICAL IN ORDER TO RUN NEW PIPING ABOVE THE CEILING GRID - REFER TO PLUMBING
4. TEMPORARILY REMOVE CEILING TILES TO INSTALL PLUMBING LINES TO VERTICAL METAL ENCLOSURE. INSTALL METAL ENCLOSURE BELOW CEILING GRID - COORDINATE LOCATIONS WITH PLUMBING
5. NEW CEILING GRID AND TILE IS TO BE AT SAME HEIGHT AS REMOVED TILE, INSTALL ACP-1
6. 5/8" GYPSUM BOARD ON 3 5/8" METAL STUDS AT 16" O.C. - PAINT AND HEIGHT TO MATCH EAST GYM ENTRY CEILING
7. PAINT ENTIRE WALL TO MATCH EXISTING WALL COLOR
8. PREFINISHED ALUMINUM LOUVER, REUSE EXISTING OPENING AND LINTEL. VERIFY OPENING SIZE.

ISSUED FOR	DATE
ADDENDUM 03	02-17-2026
ADDENDUM 02	02-06-2026

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PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

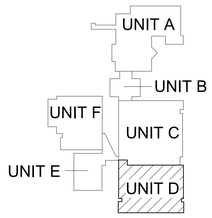
Edwardsburg, Michigan

DATE
JANUARY 16, 2026

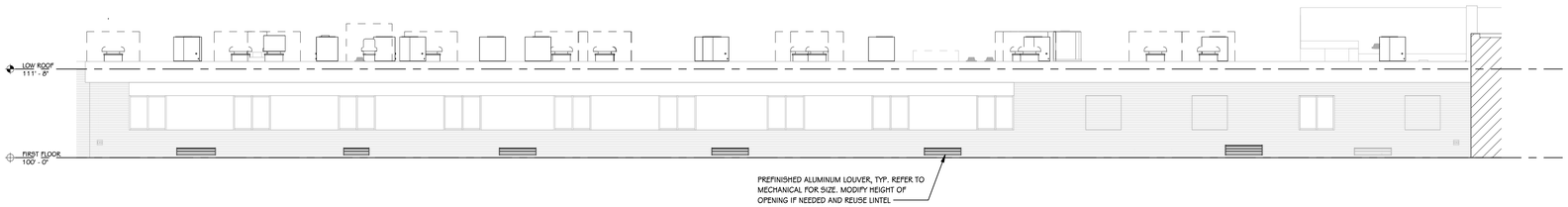
SHEET TITLE
FIRST FLOOR REFLECTED CEILING PLAN - UNIT D

SHEET NUMBER
A 201D
21-201.061

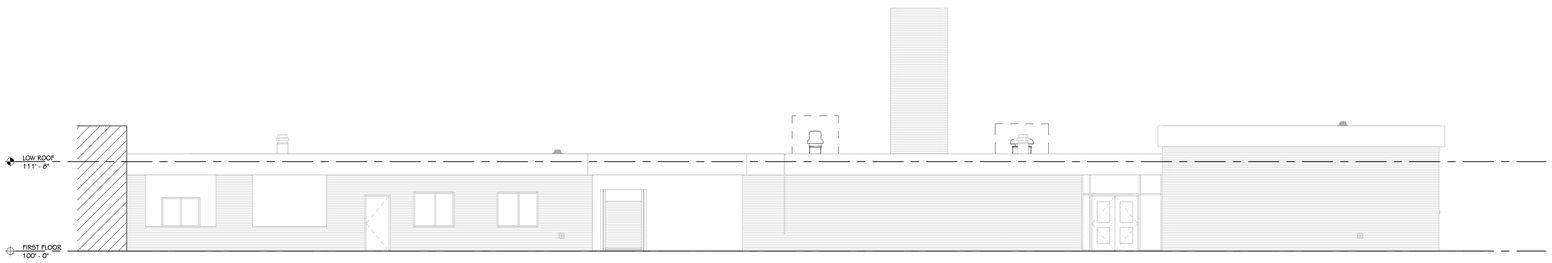
EDWARDSBURG HIGH SCHOOL



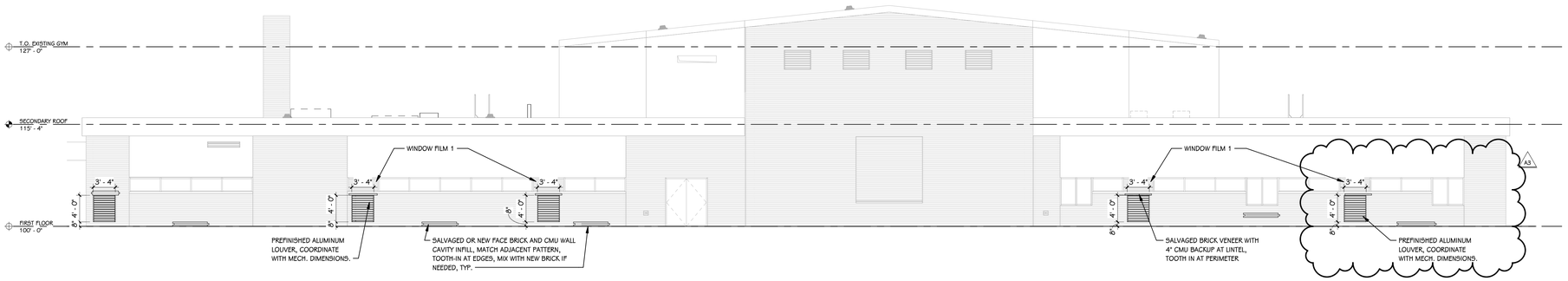
KEY PLAN
SCALE: NO SCALE



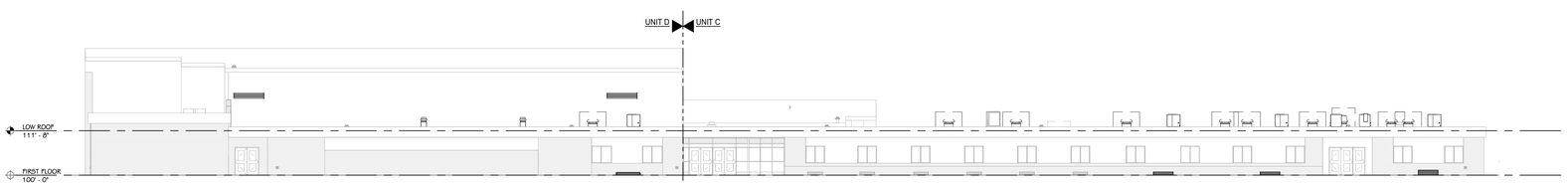
A / A 301 WEST ELEVATION - UNIT C
1/8" = 1'-0"



D / A 301 WEST ELEVATION - UNIT D
1/8" = 1'-0"



C / A 301 SOUTH ELEVATION - UNIT D
1/8" = 1'-0"



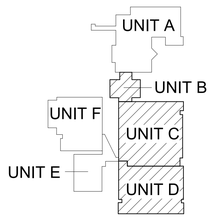
D / A 301 OVERALL EAST ELEVATION - UNIT C + D
1/16" = 1'-0"

EXTERIOR ELEVATION KEY

BRICK 1, COLOR: MATCH EXISTING

WINDOW FILM 1 :
BASIS OF DESIGN: MANUFACTURER; LLUMAR.
SPECIALTY SERIES; BLACK (NRMM PS2)

EDWARDSBURG HIGH SCHOOL



KEY PLAN
SCALE: NO SCALE

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ISSUED FOR	DATE
ADDENDUM 03	02-17-2026

PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

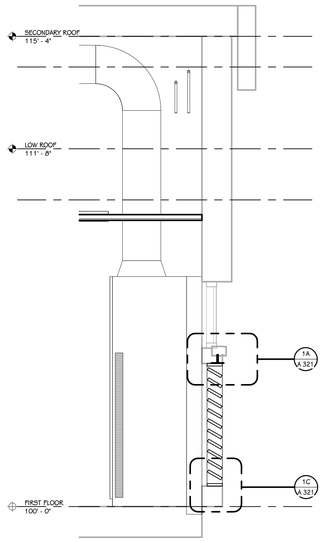
OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

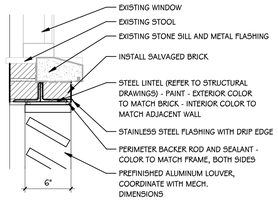
SHEET TITLE
EXTERIOR ELEVATIONS

DATE
JANUARY 16, 2026

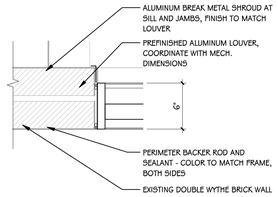
SHEET NUMBER
A 301
21-201.061



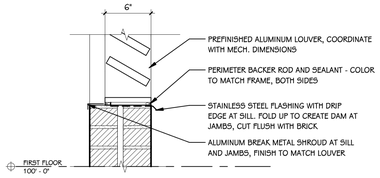
1 A 321 WALL SECTION
1/2" = 1'-0"



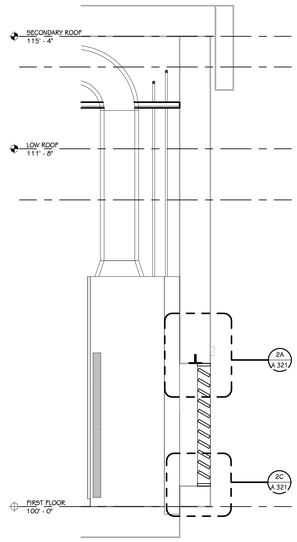
1A A 321 WALL DETAIL
1 1/2" = 1'-0"



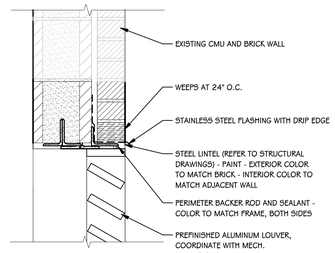
1B A 321 JAMB DETAIL
1 1/2" = 1'-0"



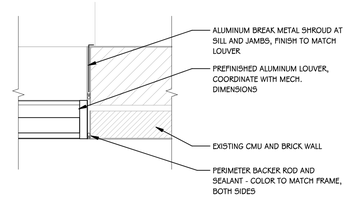
1C A 321 WALL DETAIL
1 1/2" = 1'-0"



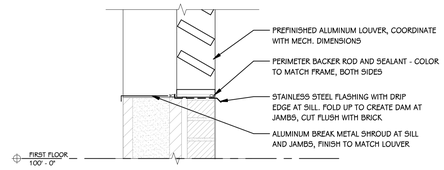
2 A 321 WALL SECTION
1/2" = 1'-0"



2A A 321 WALL DETAIL
1 1/2" = 1'-0"



2B A 321 JAMB DETAIL
1 1/2" = 1'-0"



2C A 321 WALL DETAIL
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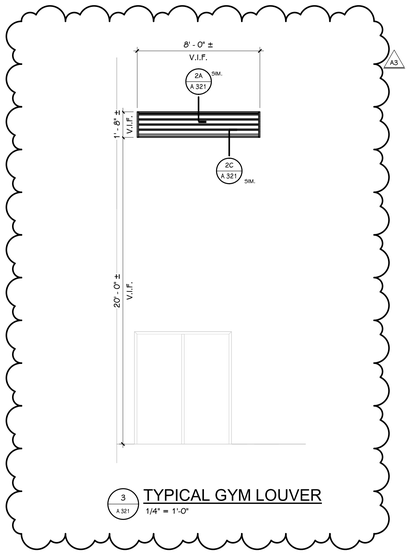

3 A 321 TYPICAL GYM LOUVER
1/4" = 1'-0"

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ISSUED FOR	DATE
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PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

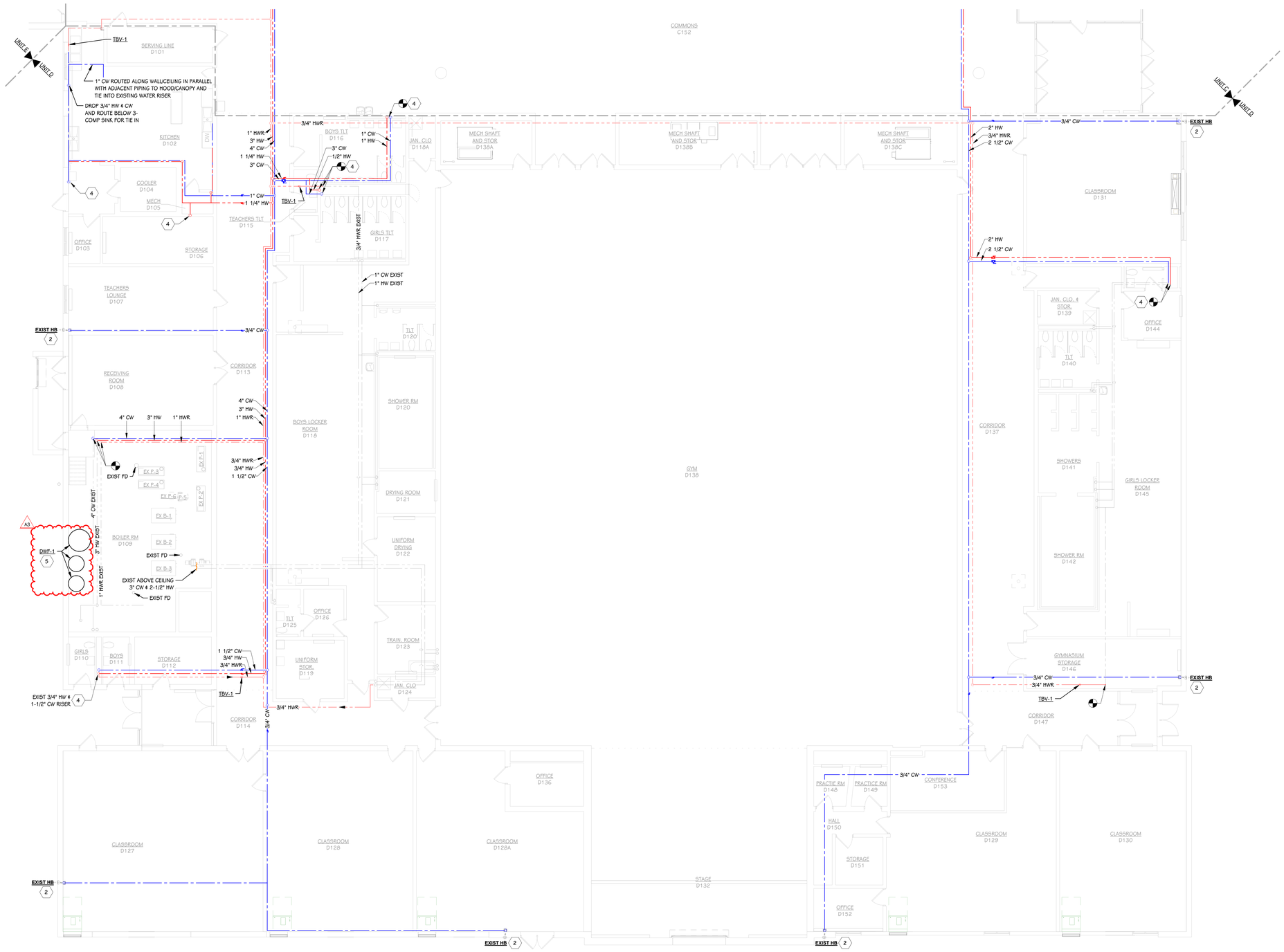
OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
WALL SECTION AND DETAILS

DATE
JANUARY 16, 2026

SHEET NUMBER
A 321
21-201.061



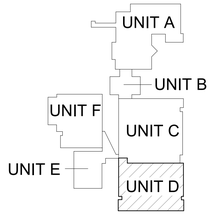
PLUMBING KEYED NOTES

1. ROUTE DOMESTIC MAINS CONCEALED WITHIN METAL PIPE ENCLOSURE THROUGH CORRIDOR. BASIS OF DESIGN JGI SOFFI-STEEL U-SHIELD ENCLOSURE.
2. VERIFY HOSE BIBB EXACT LOCATION AND COORDINATE METAL PIPE ENCLOSURE TO CONCEAL NEW 3/4" CW PIPE TO TIE INTO EXISTING HOSE BIBB. PROVIDE SHUTOFF VALVE WITH ACCESS PANEL.
3. ROUTE DOMESTIC SUPPLY BRANCHES CONCEALED ABOVE CEILING AND DROP WITHIN METAL PIPE ENCLOSURE IN CLASSROOM. BASIS OF DESIGN JGI SOFFI-STEEL U-SHIELD ENCLOSURE WITH BACKPLATE, USE 16 GAUGE STEEL FOR 4-SIDED ENCLOSURES AND 20 GAUGE STEEL FOR CHASES AGAINST THE WALL.
4. ROUTE AND TIE IN DOMESTIC SUPPLY BRANCH TO EXISTING SUPPLY RISER. PROVIDE BRANCH SHUTOFF VALVE ABOVE CORRIDOR CEILING.
5. PROVIDE DOMESTIC WATER FILTRATION SYSTEM. TIE INTO COLD WATER MAIN SERVICE AFTER WATER ENTRY AND BEFORE DISTRIBUTION WITH SAME SIZE AS EXISTING PIPE MAIN.

PLUMBING PLAN - UNIT D
1/8" = 1'-0"

THIS DRAWING SHEET IS INTENDED TO BE PLOTTED IN COLOR. IF THIS TEXT APPEARS IN BLACK AND WHITE, IT IS PLOTTED INCORRECTLY. DISCARD AND OBTAIN AN ACCURATE DRAWING

EDWARDSBURG HIGH SCHOOL



KEY PLAN
SCALE: NO SCALE

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ADDENDUM 3	02/17/2026

PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
FIRST FLOOR PLUMBING PLAN - UNIT D

DATE
JANUARY 16, 2026

SHEET NUMBER
P 101D
21-201.061

DRAWN BY: CB 2/18/2026 6:38:02 AM

FIXTURE UNIT VALUES

FIXTURE	DRAINAGE	SUPPLY		
	DFU	HW	CW	TOTAL
WATER CLOSET (FLUSH VALVE)	4	---	10	10
URINAL	2	---	5	5
LAVATORY	1	1.5	1.5	2
SINK	2	1.5	1.5	2
DISHWASHER	2	1.4	---	1.4
MOP SERVICE BASIN	5	2.25	2.25	3
WASHING MACHINE	3	2.25	2.25	3

FIXTURE UNIT VALUES NOTES:
1. DRAINAGE FIXTURE UNIT VALUES (DFU) TAKEN FROM THE 2021 MICHIGAN PLUMBING CODE, CHAPTER 7, TABLE 709.1.
2. SUPPLY FIXTURE UNIT VALUES TAKEN FROM THE 2021 MICHIGAN PLUMBING CODE, APPENDIX E, TABLE E101B.

WATER HAMMER ARRESTER SCHEDULE

PDI RATING	A	B	C	D	E	F
FIXTURE UNIT CAP	1-11	12-32	33-60	61-113	114-154	155-330

WATER HAMMER ARRESTER SCHEDULE NOTES:
1. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER SIZING OF WATER HAMMER ARRESTERS. REFER TO SPECIFICATION SECTION 221006 AND MANUFACTURER RECOMMENDATIONS.

MINIMUM SIZE CONNECTION

FIXTURE	SAN	HW	CW	VENT
BATHTUBS (60"x32" AND SMALLER)	4"	1/2"	1/2"	2"
BATHTUBS (LARGER THAN 60"x32")	2"	1/2"	1/2"	2"
BIDET	1-1/4"	3/8"	3/8"	1-1/4"
COMBINATION SINK AND TRAY	1-1/2"	1/2"	1/2"	1-1/2"
DISHWASHER (DOMESTIC)	1-1/2"	1/2"	1/2"	1-1/2"
DRINKING FOUNTAIN	1-1/4"	---	3/8"	1-1/4"
HOSE BIBB/ WALL HYDRANT	---	---	3/4"	---
LAUNDRY (1, 2, OR 3 COMPARTMENTS)	1-1/4"	1/2"	1/2"	1-1/4"
LAVATORY	1-1/4"	3/8"	3/8"	1-1/4"
SHOWER (SINGLE HEAD)	1-1/2"	1/2"	1/2"	1-1/2"
SINK (FLUSHING RIM)	1-1/2"	3/4"	3/4"	1-1/2"
SINK (KITCHEN)	1-1/2"	1/2"	1/2"	1-1/2"
SINK (SERVICE)	1-1/2"	1/2"	1/2"	1-1/2"
URINAL (FLUSH TANK)	2"	---	1/2"	1-1/2"
URINAL (FLUSHOMETER VALVE)	2"	---	3/4"	1-1/2"
WASHING MACHINE	2"	---	3/4"	3/4"
WATER CLOSET (FLUSH TANK)	4"	---	3/8"	2"
WATER CLOSET (FLUSHOMETER TANK)	4"	---	3/8"	2"
WATER CLOSET (FLUSHOMETER VALVE)	4"	---	1"	2"
WATER CLOSET (ONE PIECE)	4"	---	1/2"	2"

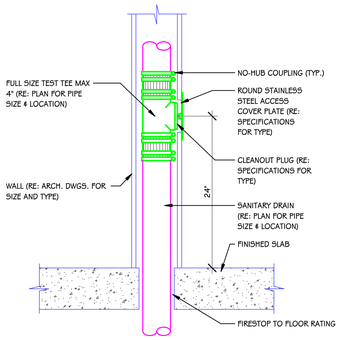
FIXTURE UNIT VALUES NOTES:
1. ALL FIXTURES SHOWN MAY NOT APPEAR ON ALL DRAWINGS.
2. DRAINAGE FIXTURE UNIT VALUES (DFU) TAKEN FROM THE 2021 MICHIGAN PLUMBING CODE, CHAPTER 7, TABLE 709.1.
3. SUPPLY FIXTURE UNIT VALUES TAKEN FROM THE 2021 MICHIGAN PLUMBING CODE, APPENDIX E, TABLE E101B.

A3

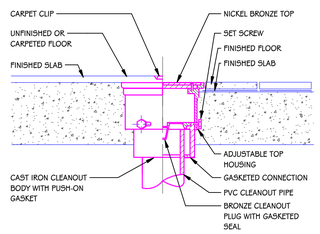
DOMESTIC WATER FILTRATION SCHEDULE

TAG	LOCATION	SERVICE	MODEL NO.	CONTINUOUS FLOW, GPM	PEAK FLOW, GPM	PIPE SIZE, IN	INLET PRESSURE, PSIG	VOLTAGE	FREQ. Hz	NOTES
DWF-1	MECH	DOMESTIC HOT WATER	SP-3672-3C-2	172 EA	222 EA	3	35-125	120/1PH	60	1, 2, 3, 4

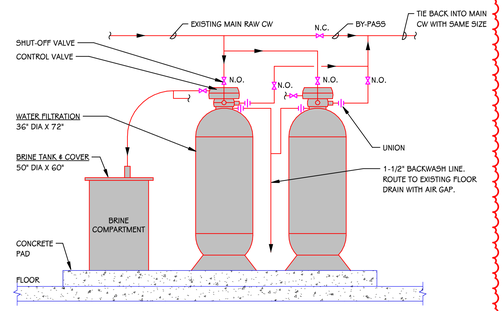
DOMESTIC WATER FILTRATION SCHEDULE NOTES:
1. BASED ON EASYWATER DOMESTIC WATER FILTRATION SYSTEM. TWO (2) FIBERGLASS TANKS WITH 600,000 GRAIN CAPACITY PER TANK, HAVING TWO (2) 3" INLET/OUTLET CONNECTIONS, AND ONE (1) 50"x60" BRINE TANK.
2. PROVIDE VACUUM BREAKER PER TANK AND INSTALL AT HIGHEST PIPING POINT PER MANUFACTURER'S INSTRUCTION. PROVIDE AIR GAP OF TWO TIMES THE DIAMETER OF THE DRAIN PIPE.
3. INSTALL PER MANUFACTURER INSTRUCTIONS.
4. COORDINATE POWER REQUIREMENTS WITH ELECTRICAL CONTRACTOR.



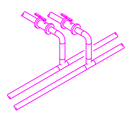
10 / P 501 WALL CLEANOUT DETAIL
1/2" = 1'-0"



9 / P 501 FLOOR CLEANOUT DETAIL
1/2" = 1'-0"

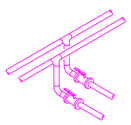


12 / P 501 DOMESTIC WATER FILTRATION DETAIL
1/2" = 1'-0"



BRANCH CONNECTION OFF TOP

APPLIES TO THE FOLLOWING SYSTEMS:
DOMESTIC WATER
NATURAL GAS
COMPRESSED AIR
MEDICAL GASES
VACUUM
STEAM / CONDENSATE

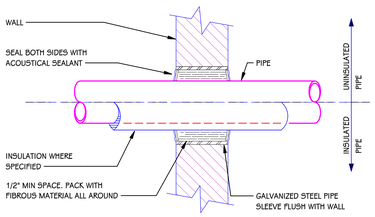


BRANCH CONNECTION OFF BOTTOM

APPLIES TO THE FOLLOWING SYSTEMS:
HEATING HOT WATER
CHILLED WATER
GEOTHERMAL

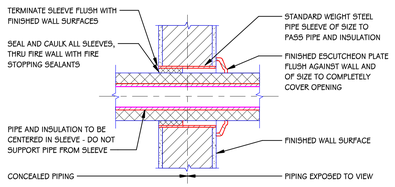
NOTE: BOTTOM AS INDICATED OR SIDE CONNECTION IS ACCEPTABLE. CONNECTION TO THE TOP OF THE MAINS IS NOT ACCEPTABLE.

8 / P 501 BRANCH TAKE-OFF PIPING DETAIL
1/8" = 1'-0"

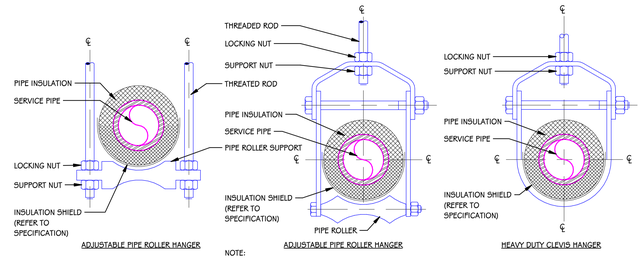


NOTE
1. WHERE PIPING IS EXPOSED TO VIEW PROVIDE WITH ESCUTCHEON.
2. FOR RATED WALLS REFER TO FIRE STOP SPECIFICATIONS.

7 / P 501 PENETRATION NOT RATED DETAIL
1/2" = 1'-0"

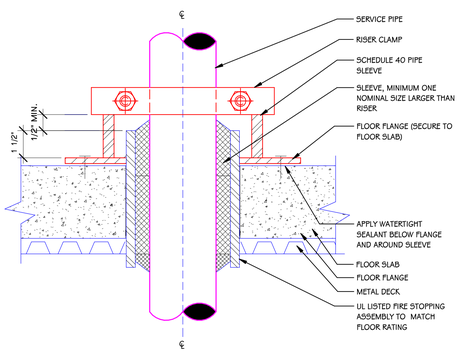


6 / P 501 PIPING SLEEVE DETAIL - INTERIOR WALL
1/2" = 1'-0"

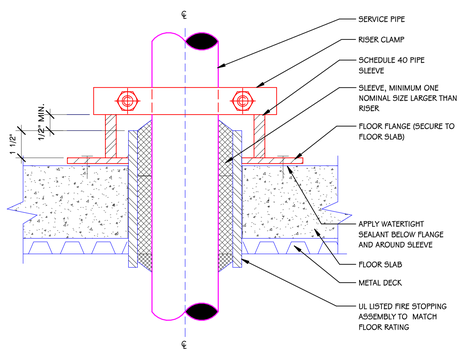


NOTE:
1. SEE SPECIFICATION FOR HANGER SIZES (TYP.)

5 / P 501 PIPE HANGER SUPPORT DETAIL
1/2" = 1'-0"

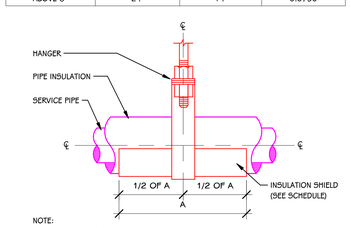


4 / P 501 PIPE PENETRATION / PIPE RISER SUPPORT DETAIL
1/2" = 1'-0"



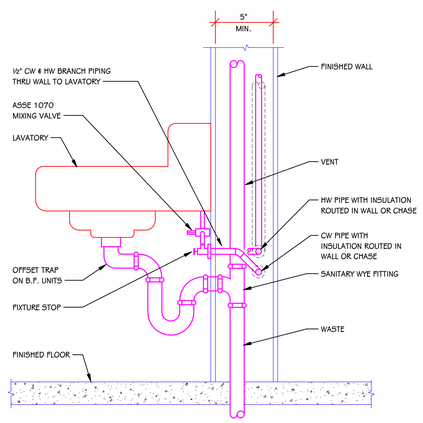
3 / P 501 PIPE PENETRATION / PIPE RISER SUPPORT DETAIL A
1/2" = 1'-0"

INSULATION SHIELD SCHEDULE			
PIPE SIZE	DIMENSION "A"	GAUGE OF SHIELD	SHIELD THICKNESS
1/2" TO 4"	12"	18	0.0480
5" TO 6"	18"	16	0.0600
ABOVE 6"	24"	14	0.0750



NOTE:
1. SEE SPECIFICATION FOR FLANGER SIZES

2 / P 501 PIPE HANGER / SHIELD DETAIL
1/2" = 1'-0"



1 / P 501 TYPICAL LAVATORY DETAIL
1/2" = 1'-0"

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ADDENDUM 3	02/17/2026

PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
PLUMBING SCHEDULES AND DETAILS

DATE
JANUARY 16, 2026

SHEET NUMBER
P 501
21-201.061

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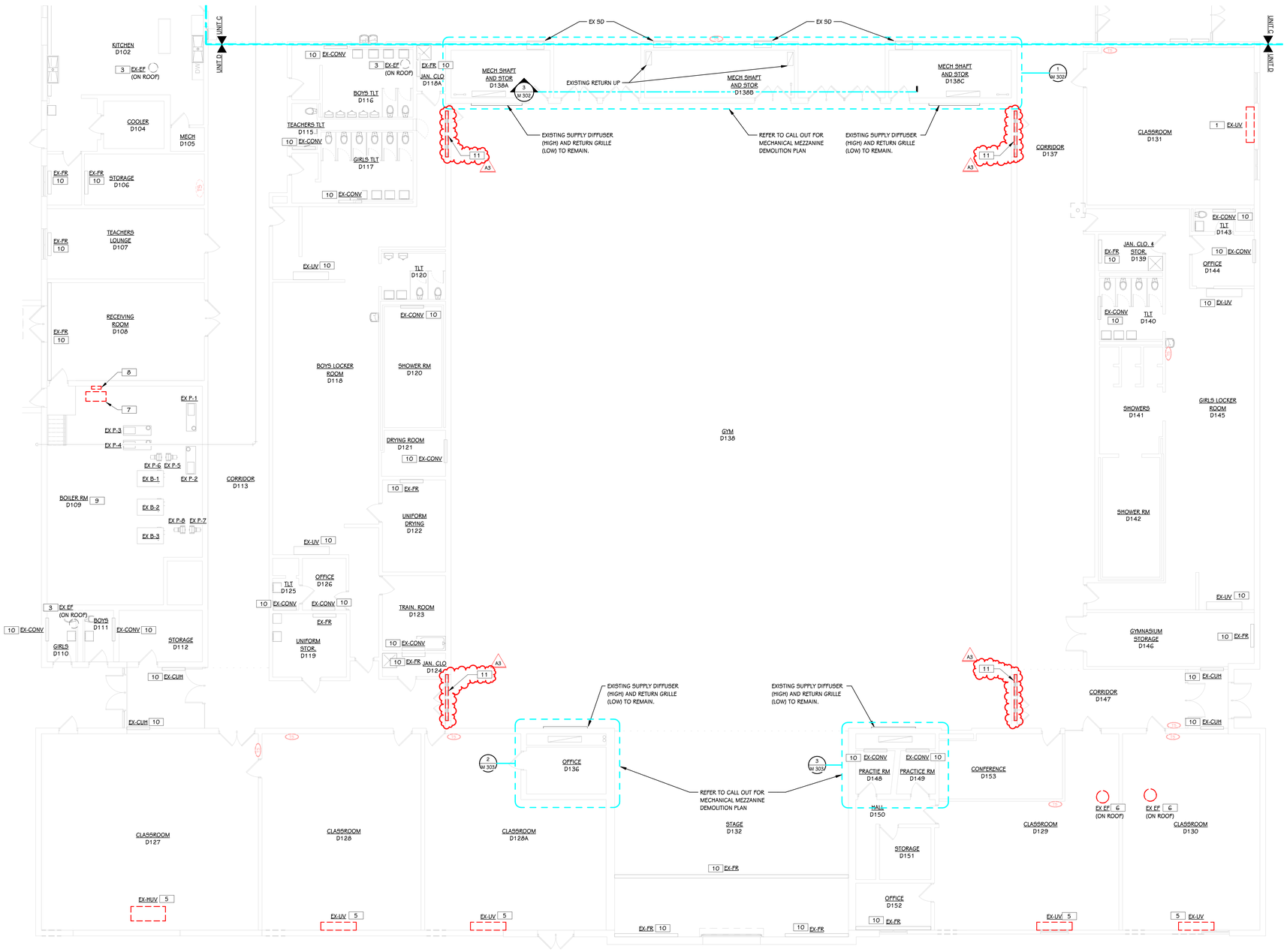

FIRST FLOOR HVAC SHEET METAL DEMOLITION PLAN - UNIT D

1/8" = 1'-0"

KEYED NOTES - MECHANICAL - DEMOLITION

1. REMOVE UNIT VENTILATOR, LOUVER, & TEMP SENSOR. HYDRONIC BRANCH LINES AND WALL OPENING TO BE REUSED.
2. REMOVE FIN TUBE.
3. EQUIPMENT TO REMAIN.
4. REMOVE UNIT VENTILATOR & TEMP SENSOR. HYDRONIC BRANCH LINES & OUTSIDE AIR DUCT UP THRU CHASE TO BE REUSED
5. REMOVE UNIT VENTILATOR, LOUVER, & TEMP SENSOR. HYDRONIC BRANCH LINES TO BE REUSED. REFER TO ARCHITECTURAL FOR PATCH WORK REQUIRED FOR LOUVER OPENING.
6. REMOVE EQUIPMENT AND CONNECTING DUCTWORK. CURB TO REMAIN AND PROVIDE WITH INSULATED METAL CAP.
7. REMOVE AND SALVAGE AIR COMPRESSOR AND RETURN TO OWNER.
8. REMOVE PNEUMATIC TEMPERATURE CONTROL PANEL, TUBING, AND ALL ASSOCIATED COMPONENTS.
9. A3 PROVIDE PRE-BALANCE REPORT OF EXISTING HYDRONIC HEATING PUMPS, INCLUDING FLOW, HEAD, AND OPERATING CONDITIONS. SUBMIT TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO COMMENCING DEMOLITION.
10. EQUIPMENT TO REMAIN. REMOVE EXISTING PNEUMATIC THERMOSTAT, CONTROL VALVE ACTUATOR, AND ASSOCIATED AIR TUBING.
11. A3 REMOVE LOUVER. EXISTING WALL OPENING TO BE REUSED.

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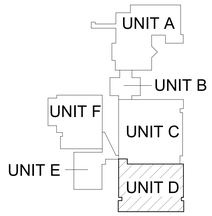
EDWARDSBURG HIGH SCHOOL



KEY PLAN

SCALE: NO SCALE

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PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
FIRST FLOOR MECHANICAL DEMOLITION PLAN - UNIT D

DATE
JANUARY 16, 2026

SHEET NUMBER
MD 101D
21-201.061

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FIRST FLOOR SHEET METAL PLAN - OVERALL
1/32" = 1'-0"

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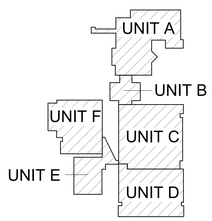
EDWARDSBURG HIGH SCHOOL



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KEY PLAN
SCALE: NO SCALE

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PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
OVERALL FIRST FLOOR SHEET METAL PLAN

DATE
JANUARY 16, 2026

SHEET NUMBER
M 101
21-201.061

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2/18/2026 11:36:16 AM

FIRST FLOOR HVAC SHEET METAL - UNIT C

1/8" = 1'-0"

KEYED NOTES - MECHANICAL - SHEET METAL

1. PROVIDE NEW DDC CONTROLLER.
2. PROVIDE NEW ELECTRONIC MODULATING DAMPER ACTUATORS (SUPPLY, RETURN, RELIEF, & OUTSIDE AIR) SUITABLE FOR DDC CONTROL. COORDINATE POWER AND CONTROL SIGNAL REQUIREMENTS WITH THE CONTROLS CONTRACTOR.
3. PROVIDE NEW DDC CONTROLLER AND ASSOCIATED TEMPERATURE SENSOR.
4. UNIT HAS AN EXISTING DDC CONTROLLER TO BE REUSED AND INTEGRATED INTO THE NEW BMS.
5. LOUVER SHALL BE MOUNTED 8" ABOVE GRADE.
6. PROVIDE WITH DUCT SHROUD UP TO 13' CEILING.
7. PROVIDE WITH TRIM PIECE TO DIMENSIONS SHOWN FOR A FLUSH AND FINISHED APPEARANCE.
8. PROVIDE BMS START/STOP CONTROL AND FAN RUN STATUS.
9. PROVIDE NEW TEMPERATURE SENSOR.
10. INSTALL HORIZONTAL UNIT VENTILATOR AND NEW TEMPERATURE SENSOR. EXISTING HYDRONIC BRANCH LINES WITHIN TUNNEL TO BE REUSED. PROVIDE PIPE ENCLOSURE FOR EXPOSED REFRIGERANT PIPING UP TO CEILING. INSTALL NEW LOUVER WITHIN EXISTING OPENING AND MODIFY AS NECESSARY WITH THE INTENT FOR NEW LOUVER TO HAVE SAME WIDTH AND TO ONLY MODIFY HEIGHT OF OPENING.
11. FAN TO REMAIN MANUAL OPERATION. PROVIDE WITH BMS FAN RUN STATUS.
12. REUSE EXISTING RELIEF HOOD WITH MOTORIZED DAMPER. INTEGRATE INTO NEW BMS. VERIFY COMPATIBILITY. PROVIDE WITH NEW ACTUATOR/CONTROLS.
13. RETURN GRILLE RG-1 WITH 22"x22" DUCT UP TO RELIEF HOOD RH-1.
14. INTEGRATE EXISTING RTU WITH FACTORY SYMBIO 700 CONTROLS INTO NEW BMS VIA BACNET. PROVIDE FULL READ/WRITE INTEGRATION INCLUDING SCHEDULING, SETPOINTS, MONITORING, TRENDING, AND ALARMS. PROVIDE NEW MOTORIZED OA/RA DAMPER ACTUATORS AND INTEGRATE WITH RTU CONTROLS AND BMS.
15. PROVIDE NEW TEMPERATURE SENSOR AND WIRING.
16. PROVIDE NEW DAMPER ACTUATOR, TEMPERATURE SENSOR, CONTROL WIRING, DDC CONTROLLER, AND INTEGRATE INTO BAS.
17. PROVIDE TEMPERATURE SENSOR AND INTEGRATE WITH BMS. PROGRAM HIGH-TEMPERATURE ALARM.
18. INTEGRATE EXISTING BOILER PLANT CONTROL PANEL (AERCO) INTO NEW BMS VIA BACNET. PROVIDE REQUIRED NETWORK CONNECTIONS, POINT MAPPING, ALARMS, AND GRAPHICS.
19. INTEGRATE EQUIPMENT STATUS AND ZONE TEMPERATURE INTO BMS.
20. PROVIDE NEW LOUVER TO FIT EXISTING WALL OPENING (APPROX. 94" × 20"). BASIS OF DESIGN: RUSKIN GFL800 STATIONARY DRAINABLE LOUVER WITH BIRDSCREEN. PROVIDE INTERIOR-MOUNTED BAROMETRIC RELIEF DAMPER (GREENHECK BR-32 OR APPROVED EQUAL) SIZED TO MATCH LOUVER. CONTRACTOR TO FIELD VERIFY OPENING SIZE AND WALL CONDITIONS AND COORDINATE ALL DIMENSIONS PRIOR TO FABRICATION AND INSTALLATION.

ISSUED FOR	DATE
ADDENDUM 3	02/17/2026

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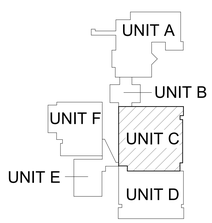
EDWARDSBURG HIGH SCHOOL



KEY PLAN
SCALE: NO SCALE

PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS
Edwardsburg, Michigan

SHEET TITLE
FIRST FLOOR SHEET METAL PLAN - UNIT C

DATE
JANUARY 16, 2026

SHEET NUMBER
M 101C
21-201.061

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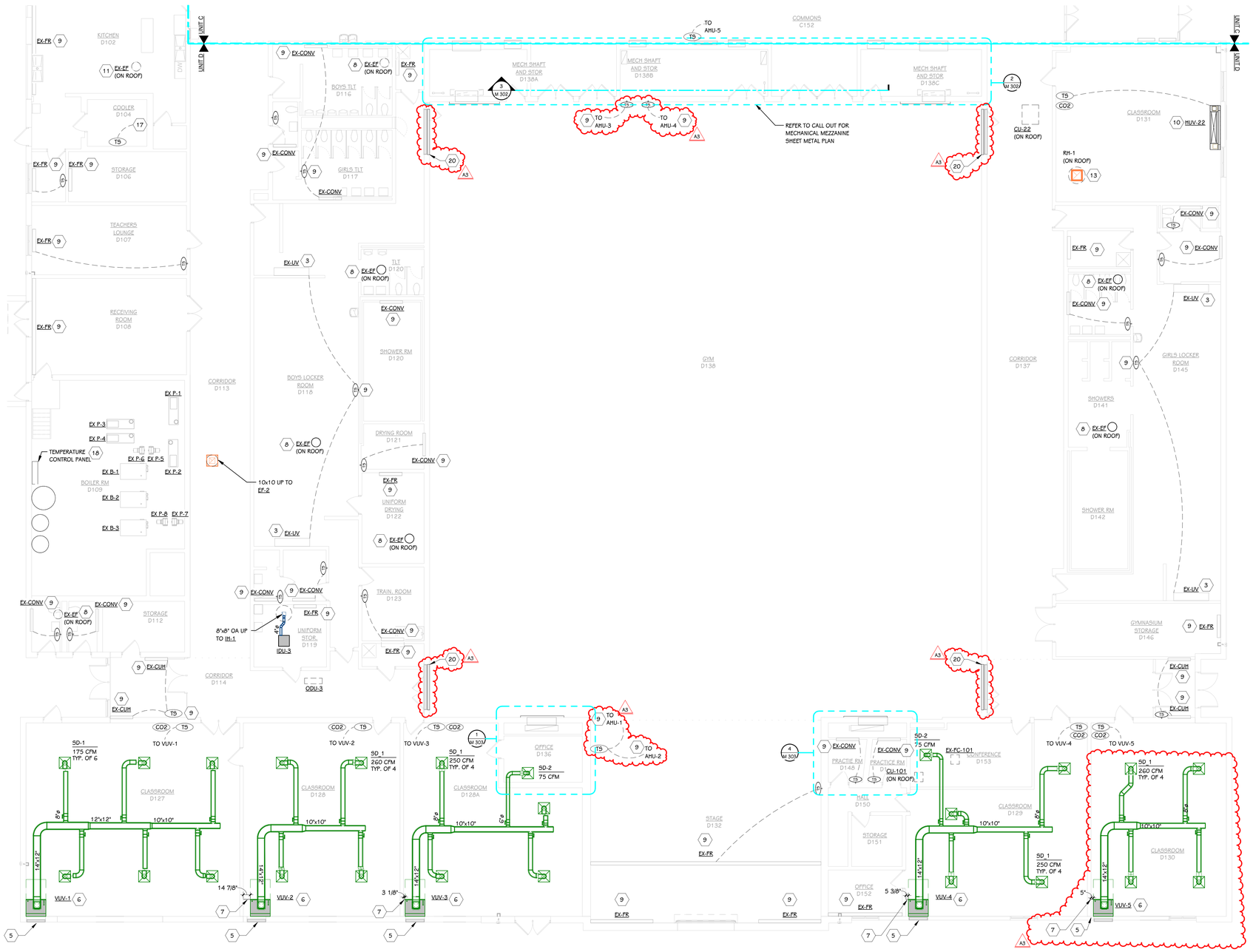
2/18/2026 11:36:12 AM

INTEGRATE EXISTING BOILER PLANT CONTROL PANEL (AERCO) INTO NEW BMS VIA BACNET/IP. PROVIDE REQUIRED NETWORK CONNECTIONS, POINT MAPPING, ALARMS, AND GRAPHICS.

EXISTING AERCO BOILER CONTROL PANEL - LOCATED WITHIN D109



FIRST FLOOR HVAC SHEET METAL - UNIT D
1/8" = 1'-0"

KEYED NOTES - MECHANICAL - SHEET METAL

1. PROVIDE NEW DDC CONTROLLER.
2. PROVIDE NEW ELECTRONIC MODULATING DAMPER ACTUATORS (SUPPLY, RETURN, RELIEF, & OUTSIDE AIR) SUITABLE FOR DDC CONTROL. COORDINATE POWER AND CONTROL SIGNAL REQUIREMENTS WITH THE CONTROLS CONTRACTOR.
3. PROVIDE NEW DDC CONTROLLER AND ASSOCIATED TEMPERATURE SENSOR.
4. UNIT HAS AN EXISTING DDC CONTROLLER TO BE REUSED AND INTEGRATED INTO THE NEW BMS.
5. LOUVER SHALL BE MOUNTED 8" ABOVE GRADE.
6. PROVIDE WITH DUCT SHROUD UP TO 13' CEILING.
7. PROVIDE WITH TRIM PIECE TO DIMENSIONS SHOWN FOR A FLUSH AND FINISHED APPEARANCE.
8. PROVIDE BMS START/STOP CONTROL AND FAN RUN STATUS.
9. PROVIDE NEW TEMPERATURE SENSOR.
10. INSTALL HORIZONTAL UNIT VENTILATOR AND NEW TEMPERATURE SENSOR. EXISTING HYDRONIC BRANCH LINES WITHIN TUNNEL TO BE REUSED. PROVIDE PIPE ENCLOSURE FOR EXPOSED REFRIGERANT PIPING UP TO CEILING. INSTALL NEW LOUVER WITHIN EXISTING OPENING AND MODIFY AS NECESSARY WITH THE INTENT FOR NEW LOUVER TO HAVE SAME WIDTH AND TO ONLY MODIFY HEIGHT OF OPENING.
11. FAN TO REMAIN MANUAL OPERATION. PROVIDE WITH BMS FAN RUN STATUS.
12. REUSE EXISTING RELIEF HOOD WITH MOTORIZED DAMPER. INTEGRATE INTO NEW BMS. VERIFY COMPATIBILITY. PROVIDE WITH NEW ACTUATOR/CONTROLS.
13. RETURN GRILLE RG-1 WITH 22"x22" DUCT UP TO RELIEF HOOD RH-1.
14. INTEGRATE EXISTING RTU WITH FACTORY SYMBIO 700 CONTROLS INTO NEW BMS VIA BACNET. PROVIDE FULL READ/WRITE INTEGRATION INCLUDING SCHEDULING, SETPOINTS, MONITORING, TRENDING, AND ALARMS. PROVIDE NEW MOTORIZED OA/RA DAMPER ACTUATORS AND INTEGRATE WITH RTU CONTROLS AND BMS.
15. PROVIDE NEW TEMPERATURE SENSOR AND WIRING.
16. PROVIDE NEW DAMPER ACTUATOR, TEMPERATURE SENSOR, CONTROL WIRING, DDC CONTROLLER, AND INTEGRATE INTO BAS.
17. PROVIDE TEMPERATURE SENSOR AND INTEGRATE WITH BMS. PROGRAM HIGH-TEMPERATURE ALARM.
18. INTEGRATE EXISTING BOILER PLANT CONTROL PANEL (AERCO) INTO NEW BMS VIA BACNET. PROVIDE REQUIRED NETWORK CONNECTIONS, POINT MAPPING, ALARMS, AND GRAPHICS.
19. INTEGRATE EQUIPMENT STATUS AND ZONE TEMPERATURE INTO BMS.
20. (A3) PROVIDE NEW LOUVER TO FIT EXISTING WALL OPENING (APPROX. 94" × 20"). BASIS OF DESIGN: RUSKIN GFL800 STATIONARY DRAINABLE LOUVER WITH BIRDSCREEN. PROVIDE INTERIOR-MOUNTED BAROMETRIC RELIEF DAMPER (GREENHECK BR-32 OR APPROVED EQUAL) SIZED TO MATCH LOUVER. CONTRACTOR TO FIELD VERIFY OPENING SIZE AND WALL CONDITIONS AND COORDINATE ALL DIMENSIONS PRIOR TO FABRICATION AND INSTALLATION.

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ADDENDUM 3	02/17/2026

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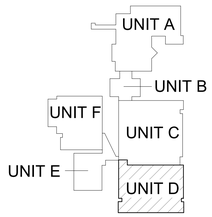
EDWARDSBURG HIGH SCHOOL



KEY PLAN
SCALE: NO SCALE

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PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

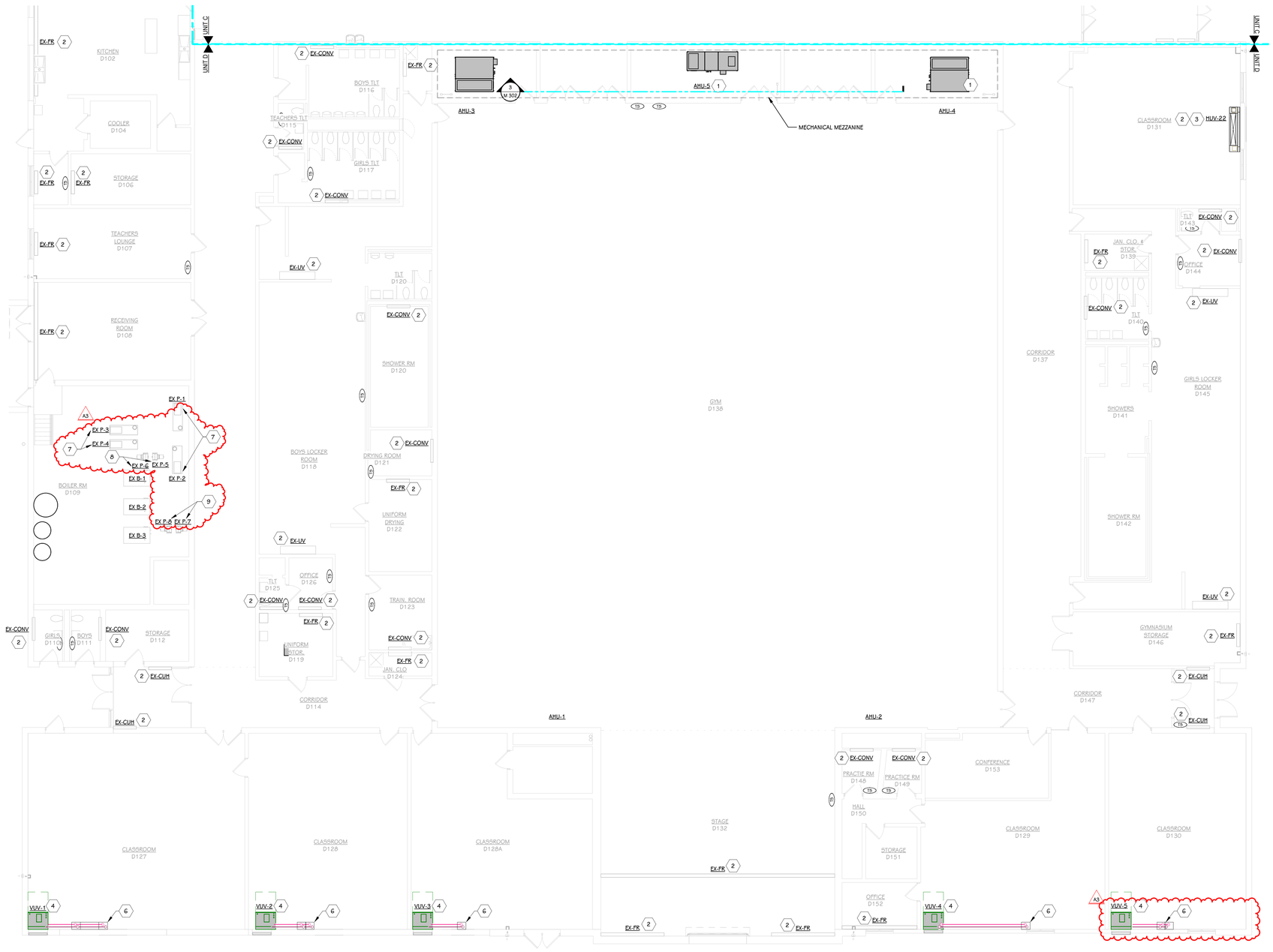
OWNER
EDWARDSBURG PUBLIC SCHOOLS
Edwardsburg, Michigan

SHEET TITLE
FIRST FLOOR SHEET METAL PLAN - UNIT D

DATE
JANUARY 16, 2026

SHEET NUMBER
M 101D
21-201.061

DRAWN BY: Author
2/18/2026 11:36:14 AM



FIRST FLOOR HVAC PIPING PLAN - UNIT D
1/8" = 1'-0"

KEYED NOTES - MECHANICAL - HVAC PIPING

1. PROVIDE AND INSTALL NEW 3-CONTROL VALVE FOR HEATING CONTROL AND TEMPERATURE SENSOR.
2. PROVIDE AND INSTALL NEW 2-WAY CONTROL VALVE FOR HEATING CONTROL AND TEMPERATURE SENSOR.
3. CONNECT NEW UNIT VENTILATOR INTO EXISTING HYDRONIC BRANCH LINES FROM TUNNEL.
4. INSTALL NEW 1" HS 1" HR TO VUV WITH NEW SHUT OFF VALVES.
5. EXISTING CONTROL VALVES SHALL BE REUSED AND INTEGRATED INTO BUILDING MANAGEMENT SYSTEM.
6. PROVIDE WITH PIPE ENCLOSURES FOR NEW HYDRONIC BRANCH LINES CONNECTED INTO EXISTING BRANCH LINES FROM TUNNEL. OFFSET ENCLOUSER AT BASE OF FLOOR IN ORDER TO HAVE VERTICAL PORTION ALIGNED WITH WINDOW MULLION WHERE APPLICABLE.
7. A3 EXISTING PUMP MOTOR IS 3 HP, 208V, 3-PHASE. REMOVE EXISTING MOTOR AND PROVIDE NEW INVERTER-DUTY MOTOR SUITABLE FOR VFD OPERATION, MATCHING EXISTING HORSEPOWER, VOLTAGE, SPEED, FRAME SIZE, AND SHAFT REQUIREMENTS. VERIFY COMPATIBILITY WITH EXISTING PUMP AND FIELD CONDITIONS PRIOR TO INSTALLATION.
8. EXISTING PUMP MOTOR IS 1.5 HP, 208V, SINGLE-PHASE. REMOVE EXISTING MOTOR AND PROVIDE NEW INVERTER-DUTY MOTOR SUITABLE FOR VFD OPERATION, 1.5 HP, 208V, 3-PHASE, 1750 RPM, MATCHING EXISTING FRAME SIZE, SHAFT SIZE, AND MOUNTING CONFIGURATION. VERIFY COMPATIBILITY WITH EXISTING PUMP, COUPLING, AND FIELD CONDITIONS PRIOR TO INSTALLATION.
9. EXISTING PUMP MOTOR IS .75 HP, 208V, SINGLE-PHASE. REMOVE EXISTING MOTOR AND PROVIDE NEW INVERTER-DUTY MOTOR SUITABLE FOR VFD OPERATION, 1.5 HP, 208V, 3-PHASE, 1750 RPM, MATCHING EXISTING FRAME SIZE, SHAFT SIZE, AND MOUNTING CONFIGURATION. VERIFY COMPATIBILITY WITH EXISTING PUMP, COUPLING, AND FIELD CONDITIONS PRIOR TO INSTALLATION.

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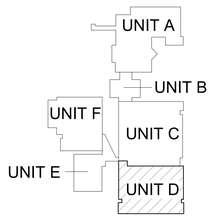
EDWARDSBURG HIGH SCHOOL



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KEY PLAN
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PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
FIRST FLOOR HVAC PIPING PLAN - UNIT D

DATE
JANUARY 16, 2026

SHEET NUMBER
M 201D
21-201.061

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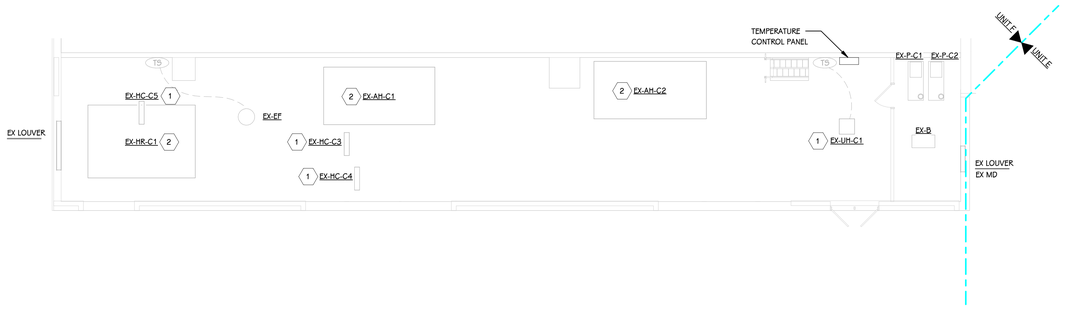

3 / M 301 ENLARGED HS GYM MECHANICAL PLAN
1/8" = 1'-0"

1 / M 301 ENLARGED PAC MECHANICAL ROOM PLAN
1/8" = 1'-0"

KEYED NOTES - MECHANICAL - ENLARGED

1 EXISTING CONTROL VALVES SHALL BE REUSED AND INTEGRATED INTO BUILDING MANAGEMENT SYSTEM.

2 INTEGRATE EXISTING AIR HANDLING UNIT (AHU) INTO DDC/BMS. INTEGRATION SHALL INCLUDE FANS, DAMPERS, SENSORS, ALARMS, SAFETIES, AND ALL AVAILABLE OPERATING AND STATUS POINTS. COORDINATE POWER AND CONTROL SIGNAL REQUIREMENTS WITH CONTROLS CONTRACTOR.

A3 3 REPLACE INOPERABLE DAMPER ACTUATOR WITH NEW ACTUATOR COMPATIBLE WITH EXISTING DAMPER AND CONTROL SYSTEM.

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PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
ENLARGED MECHANICAL ROOM PLANS

DATE
JANUARY 16, 2026

SHEET NUMBER
M 301
21-201.061

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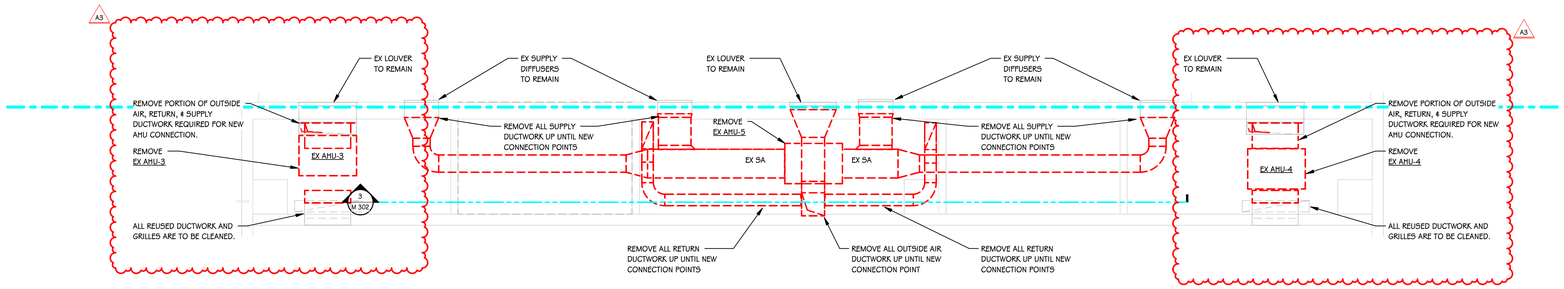
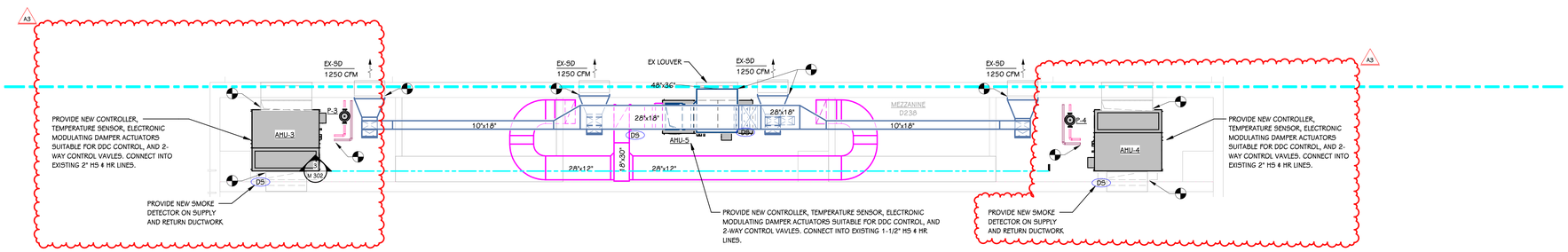
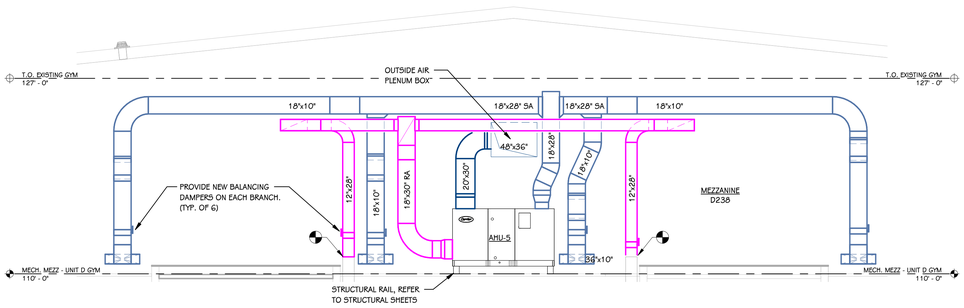


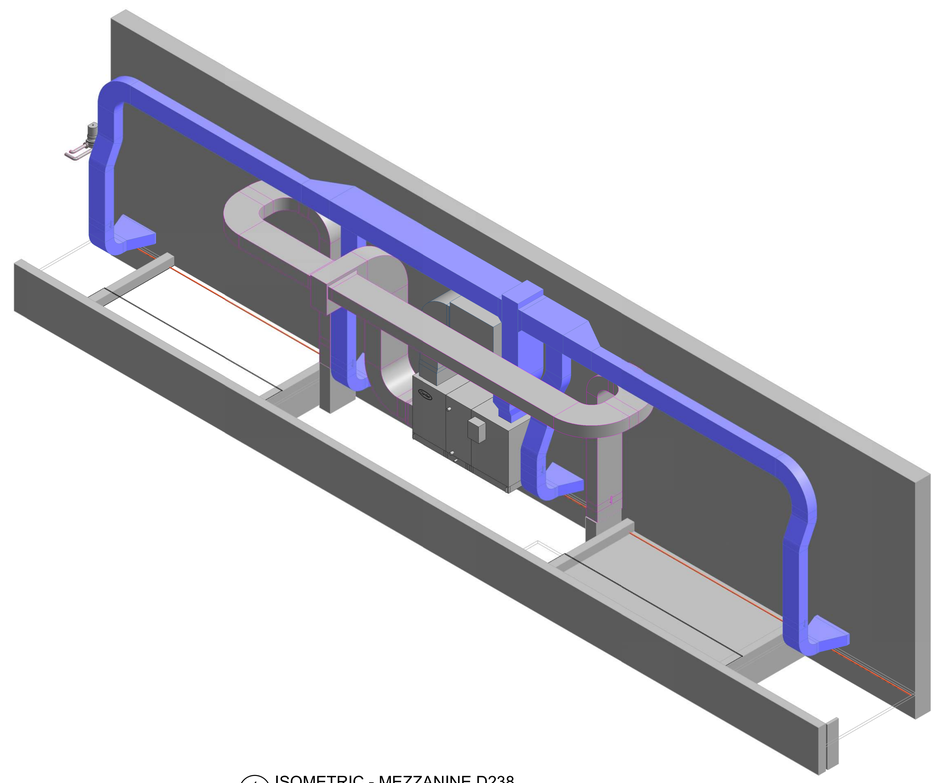
1 M 302 ENLARGED DEMOLITION PLAN - MEZZANINE D238
3/16" = 1'-0"



2 M 302 ENLARGED SHEET METAL PLAN - MEZZANINE D238
3/16" = 1'-0"



3 M 302 ELEVATION - MECHANICAL MEZZANINE D238
3/16" = 1'-0"



4 M 302 ISOMETRIC - MEZZANINE D238

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PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
ENLARGED MECHANICAL ROOM PLANS

DATE
JANUARY 16, 2026

SHEET NUMBER
M 302
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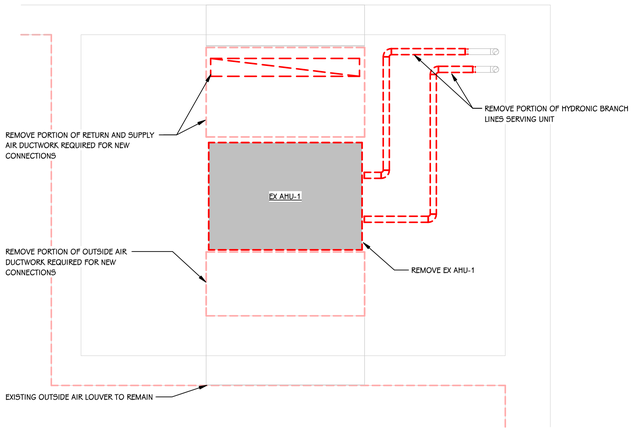
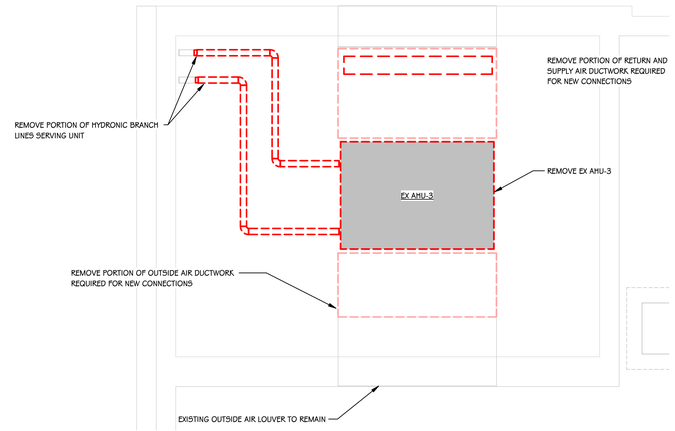
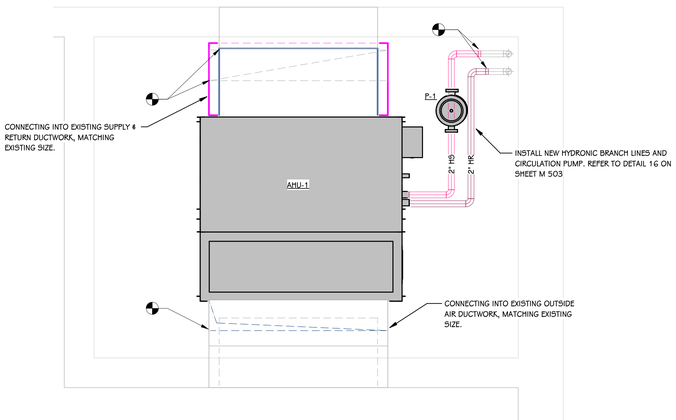
DRAWN BY: DJS 2/18/2026 11:36:19 AM



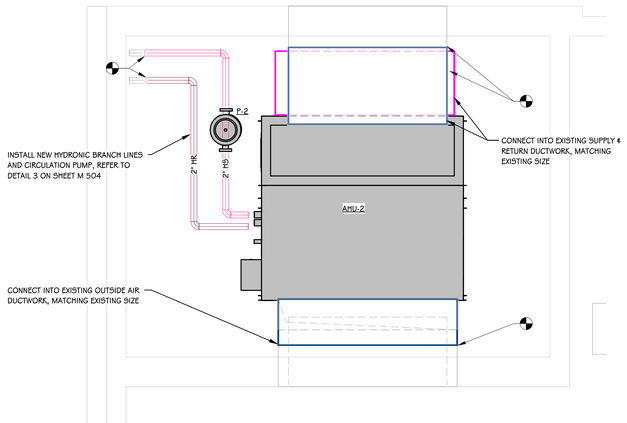
2 M 303 ENLARGED DEMOLITION PLAN - STAGE MEZZANINE
1/2" = 1'-0"



3 M 303 ENLARGED DEMOLITION PLAN - STAGE MEZZANINE
1/2" = 1'-0"



1 M 303 ENLARGED STAGE MECHANICAL MEZZANINE #1
1/2" = 1'-0"



4 M 303 ENLARGED STAGE MECHANICAL MEZZANINE #1
1/2" = 1'-0"

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PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

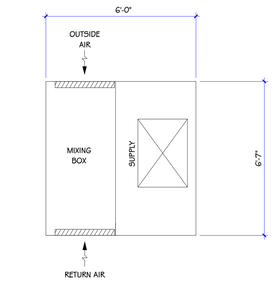
SHEET TITLE
ENLARGED MECHANICAL ROOM PLANS

DATE
JANUARY 16, 2026

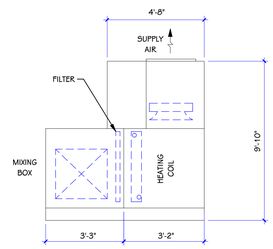
SHEET NUMBER
M 303
21-201.061

A3

DRAWN BY: DJS 2/18/2026 11:36:19 AM



PLAN - TOP VIEW



ELEVATION - SIDE VIEW

DISCHARGE / INLET SOUND POWER LEVELS (db) (A-WEIGHTED OCTAVE BAND)								
	63 HZ	125 HZ	250 HZ	500 HZ	1 kHZ	2 kHZ	4 kHZ	8 kHZ
RETURN IN	39	67	73	72	75	77	89	72
SUPPLY	51	72	77	82	88	85	88	78

AHU-1-4 : AIR-HANDLING UNIT

AREA SERVED: GYM
TYPE: INDOOR AIR-HANDLING UNIT,SINGLE ZONE CONSTANT VOLUME, 13000 CFM, 1500 MIN OUTSIDE AIR CFM, BASED ON CARRIER "39MA2102VPEE-U"
WEIGHT: 2333 LB

FILTERS: (2) 2"PLEATED MERV 13 FILTER.

HEATING SECTION: 22.0 GPM, 180°F EWT, 140°F LWT, 61°F EAT, 90.84°F LAT, 430.6 MBH.

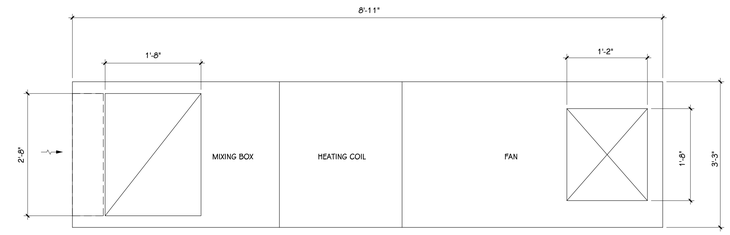
SUPPLY FAN: 13,000 CFM, 2 DIRECT DRIVE PLENUM FANS, 1.25" ESP, 3.2 BHP(EACH), 1739 RPM, ECM.

ELECTRICAL: 208V / 3PH, 37 FLA, 41.6 MCA, 60 MOCP.

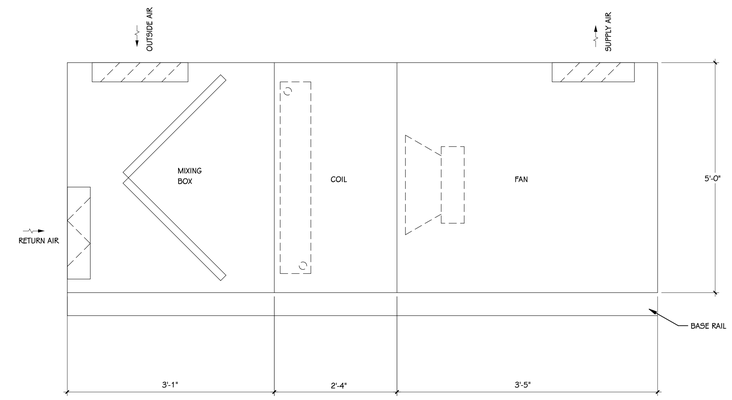
ACCESSORIES: ECM CONTROL BOX (BACnet), DRAIN PAN, R-13 DOUBLE WALL PANELS, 6" BASE RAIL, RETURN & OUTSIDE AIR DAMPERS. DUCT SMOKE DETECTORS ON SUPPLY & RETURN.

AHU-1-4 - SCHEDULE - AIR HANDLING UNIT

SCALE: NONE



PLAN - TOP VIEW



ELEVATION - SIDE VIEW

AHU-5: AIR-HANDLING UNIT

AREA SERVED: CORRIDORS
TYPE: INDOOR AIR-HANDLING UNIT, 5,000 SUPPLY CFM, 960 MIN. OA CFM, BASED ON CARRIER MODEL "39MT0701HPEE-D"
WEIGHT: 1,169 LB
UNIT MOUNTING: STRUCTURAL RAILS, REFER TO STRUCTURAL DRAWINGS.
UNIT DISCHARGE ACOUSTICS (Hz/db): 63/76, 125/80, 250/85, 500/86, 1000/87, 2000/88, 4000/82, 8000/85

FILTERS: 2" ANGLED PLEATED MERV 13 FILTER

HEATING SECTION: 2 ROW COIL, 7.67 SQFT COIL FACE AREA. 23.1 GPM,180°F EWT, 160°F LWT, 54.60°F EAT, 94.82°F LAT, 5,000 CFM, 225.54 MBH.

SUPPLY FAN: TYPE: (1) ECM PLENUM DIRECT DRIVE, 5,000 CFM, .75 ESP, 3.5 BHP,2624 RPM.

ELECTRICAL: 208V / 3PH, 9.9 FLA, 12.4 MCA.

ACCESSORIES: ECM CONTROL BOX (BACnet), DRAIN PAN, R-13 DOUBLE WALL PANELS, 6" BASE RAIL, RETURN & OUTSIDE AIR DAMPERS. DUCT SMOKE DETECTORS ON SUPPLY & RETURN.

AHU-5 - SCHEDULE - AIR HANDLING UNIT

SCALE: NONE

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PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
MECHANICAL SCHEDULES AND DETAILS

DATE
JANUARY 16, 2026

SHEET NUMBER
M 501
21-201.061

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Author

HORIZONTAL UNIT VENTILATOR - HOT WATER / DX

BASED ON "TRANE"

				CABINET		S.A. FAN					HEATING COIL								DX COOLING COIL						
MARK	MODEL	AREA SERVED	CU TAG	RA INLET	OA LOUVER	SUPPLY CFM	O.A. CFM	RPM	HP	VOLTAGE / PHASE	MBH	GPM	EAT	LAT	EWT	LWT	WPD	ROWS	TBMH	SMBH	LAT (DB)	EAT (DB)	LAT (WB)	EAT (WB)	REMARKS
HUV-01	VUVE125	TYPING C113	CU-01	BOTTOM	63-1/2" x 12"	1250	350	1116	.25	208/1	64	4.3	49 °F	107 °F	180 °F	150 °F	8.6	1	35.8	25.7	55	80			
HUV-02	VUVE075	OFFICE PRACTICE C114	N/A	BOTTOM	42" x 12"	750	175	1105	.25	208/1	42	2.86	52 °F	105 °F	180 °F	150 °F	5.24	2		N/A	N/A	N/A		N/A	
HUV-03	VUVE100	BOOKKEEPING C115	CU-03	BOTTOM	63-1/2" x 12"	1000	350	1105	.25	208/1	49.7	3.3	44 °F	101 °F	180 °F	150 °F	4.7	2	34.0	22.7	53	82			
HUV-04	VUVE100	CLASSROOM C116	CU-04	BOTTOM	63-1/2" x 12"	1000	350	1105	.25	208/1	49.7	3.3	44 °F	101 °F	180 °F	150 °F	4.7	2	34.0	22.7	53	82			
HUV-05	VUVE100	CLASSROOM C117	CU-05	BOTTOM	63-1/2" x 12"	1000	350	1105	.25	208/1	49.7	3.3	44 °F	101 °F	180 °F	150 °F	4.7	2	34.0	22.7	53	82			
HUV-06	VUVE150	SCIENCE LAB C118	CU-06	BOTTOM	63-1/2" x 16"	1500	550	1116	.25	208/1	86	5.75	42 °F	109 °F	180 °F	150 °F	16.2	1	44.0	30.5	55	82			
HUV-07	VUVE100	CLASSROOM C110	CU-07	BOTTOM	63-1/2" x 12"	1000	350	1105	.25	208/1	49.7	3.3	44 °F	101 °F	180 °F	150 °F	4.7	2	34.0	22.7	53	82			
HUV-08	VUVE100	CLASSROOM C108	CU-08	BOTTOM	63-1/2" x 12"	1000	350	1105	.25	208/1	49.7	3.3	44 °F	101 °F	180 °F	150 °F	4.7	2	34.0	22.7	53	82			
HUV-09	VUVE100	CLASSROOM C106	CU-09	BOTTOM	63-1/2" x 12"	1000	350	1105	.25	208/1	49.7	3.3	44 °F	101 °F	180 °F	150 °F	4.7	2	34.0	22.7	53	82			
HUV-10	VUVE075	CLASSROOM C104	N/A	BOTTOM	42" x 12"	750	175	1105	.25	208/1	42	2.86	52 °F	105 °F	180 °F	150 °F	5.24	2		N/A	N/A	N/A		N/A	
HUV-11	VUVE150	MAKERS ROOM C103	CU-11	BOTTOM	63-1/2" x 16"	1500	525	1116	.25	208/1	86	5.75	42 °F	109 °F	180 °F	150 °F	16.2	1	44.0	30.5	55	82			
HUV-12	VUVE150	PHYSICAL SCIENCE C121	CU-12	BOTTOM	63-1/2" x 16"	1500	550	1116	.25	208/1	86	5.75	42 °F	109 °F	180 °F	150 °F	16.2	1	44.0	30.5	55	82			
HUV-13	VUVE100	CLASSROOM C120	CU-13	BOTTOM	63-1/2" x 12"	1000	350	1105	.25	208/1	49.7	3.3	44 °F	101 °F	180 °F	150 °F	4.7	2	34.0	22.7	53	82			
HUV-14	VUVE150	BIOLOGY C119	CU-14	BOTTOM	63-1/2" x 16"	1500	525	1116	.25	208/1	86	5.75	42 °F	109 °F	180 °F	150 °F	16.2	1	44.0	30.5	55	82			
HUV-15	VUVE100	CLASSROOM C109	CU-15	BOTTOM	63-1/2" x 12"	1000	350	1105	.25	208/1	49.7	3.3	44 °F	101 °F	180 °F	150 °F	4.7	2	34.0	22.7	53	82			
HUV-16	VUVE100	CLASSROOM C107	CU-16	BOTTOM	63-1/2" x 12"	1000	350	1105	.25	208/1	49.7	3.3	44 °F	101 °F	180 °F	150 °F	4.7	2	34.0	22.7	53	82			
HUV-17	VUVE100	LIBRARY C105	CU-17	BOTTOM	63-1/2" x 12"	1000	350	1105	.25	208/1	49.7	3.3	44 °F	101 °F	180 °F	150 °F	4.7	2	34.0	22.7	53	82			
HUV-18	VUVE100	CLASSROOM C102	CU-18	BOTTOM	63-1/2" x 12"	1000	350	1105	.25	208/1	49.7	3.3	44 °F	101 °F	180 °F	150 °F	4.7	2	34.0	22.7	53	82			
HUV-19	VUVE100	CLASSROOM C101	CU-19	BOTTOM	63-1/2" x 12"	1000	350	1105	.25	208/1	49.7	3.3	44 °F	101 °F	180 °F	150 °F	4.7	2	34.0	22.7	53	82			
HUV-20	VUVE125	CLASSROOM B112	CU-20	BOTTOM	63-1/2" x 12"	1250	350	1116	.25	208/1	64	4.3	49 °F	107 °F	180 °F	150 °F	8.6	1	35.8	25.7	55	80			
HUV-21	VUVE125	CLASSROOM B111	CU-21	BOTTOM	63-1/2" x 12"	1250	350	1116	.25	208/1	64	4.3	49 °F	107 °F	180 °F	150 °F	8.6	1	35.8	25.7	55	80			
HUV-22	VUVE100	CLASSROOM D131	CU-22	BOTTOM	63-1/2" x 12"	1000	350	1105	.25	208/1	49.7	3.3	44 °F	101 °F	180 °F	150 °F	4.7	2	34.0	22.7	53	82			

VERTICAL UNIT VENTILATOR - HOT WATER / DX

BASED ON "AIREDALE"

					S.A. FAN		HOT WATER COIL								DX COOLING COIL											
MARK	MODEL	TYPE	AREA SERVED	UV OA LOUVER	SUPPLY CFM	O.A. CFM	MBH	GPM	EAT	LAT	EWT	LWT	WPD	ROWS	TBMH	SMBH	LAT (DB)	EAT (DB)	LAT (WB)	EAT (WB)	VOLTAGE	PHASE	FLA	MCA	MOCP	REMARKS
VUV-1				39" x 47"	1500	0	0	0						1	36.3	24.3	59	80	-460 °F	-460 °F	208 V	3	17 A	20 A	25 A	
VUV-2	CMD36			39" x 47"	1100	440	78.5	4.1					.6	1	36.3	24.3	59	80	-460 °F	-460 °F	208 V	3	17 A	20 A	25 A	
VUV-3	CMD36			39" x 47"	1100	425	77.6	4					.6	1	36.3	24.3	59	80	-460 °F	-460 °F	208 V	3	17 A	20 A	25 A	
VUV-4	CMD36			39" x 47"	1100	390	77	4					.6	1	36.3	24.3	59	80	-460 °F	-460 °F	208 V	3	17 A	20 A	25 A	
VUV-5	CMD36			39" x 47"	1100	380	74.5	3.9					.6	1	48.9	33.8	60	80	-460 °F	-460 °F	208 V	3	22 A	25 A	30 A	

EXHAUST FANS

BASED ON GREENHECK

						MOTOR DATA						
MARK	MODEL	TYPE	AIR FLOW (CFM)	ESP (IN WC)	SONES	EC MOTOR	NOMINAL HP	BRAKE HP	RPM	VOLTAGE	PHASE	REMARKS
EF-1	G-100-VG	DIRECT DRIVE CENTRIFUGAL	450	0.25	2.9	Yes	0.25	0.03	853	120	1	1,2
EF-2	G-100-VG	DIRECT DRIVE CENTRIFUGAL	450	0.25	2.9	Yes	0.25	0.03	853	120	1	1,2

NOTES:

1. PROVIDE WITH VARI-GREEN MOTOR FOR 0-10V SPEED CONTROL BY BAS.
2. PROVIDE WITH MOTORIZED DAMPER.

OUTDOOR AIR INTAKE / RELIEF HOODS

BASED ON GREENHECK

MARK	MODEL	THROAT SIZE	HOOD SIZE	CURB HEIGHT	AIR FLOW (CFM)	MAX APD (IN WC)	THERMALLY ISOLATED CONTROL DAMPER	REMARKS
IH-1	GRSR-08	8" x 8"	20.5" Ø	2"	50	0.01	Yes	
RH-1	GRSR-20	20" x 20"	35.5" Ø	2'-0"	1,250	0.04	Yes	

GRILLES, REGISTERS, & DIFFUSERS

BASED ON PRICE

MARK	PANEL SIZE	NECK SIZE	MODEL	CFM RANGE	VCD	THROW	MATERIAL	FINISH	INSTALLATION	REMARKS
SD-1	24x24	8" Ø	ASCDA	175-315	NO	3-5-9	ALUMINUM	WHITE	LAY-IN	
SD-2	24x24	6" Ø	ASCDA	120-200	NO	3-4-7	ALUMINUM	WHITE	LAY-IN	
RG-1	24x24	12x12	80	0-500	YES	-	ALUMINUM	WHITE	LAY-IN	

INDOOR UNIT

BASED ON MITSUBISHI

MARK	MODEL	TYPE	COOLING CAPACITY (MBH)	HEATING CAPACITY (MBH)	CFM (MAX)	SIZE (WxDxH)	WEIGHT (LBS)	REMARKS
IDU-1	PKA-AL12NL	WALL MOUNT	12.2 Btuh	0.0 Btuh	385	35-1/2" x 9-1/2" X 12"	28	1
IDU-2	PKA-AL12NL	WALL MOUNT	12.2 Btuh	0.0 Btuh	385	35-1/2" x 9-1/2" X 12"	28	1
IDU-3	SLZ-AF12NL	CEILING CASSETTE	12.0 Btuh	15.0 Btuh	335	22-1/2" x 22-1/2" x 10"	31	1

NOTES:

1 PROVIDE WITH CONDENSATE PUMP

OUTDOOR UNIT

BASED ON MITSUBISHI

MARK	MODEL	COOLING CAPACITY	HEATING CAPACITY	TYPE	SEER2	SERVES	REFRIGERANT	VOLTAGE	PHASE	MOCP	SIZE (WxDxH)	WEIGHT (LBS)	REMARKS
ODU-1	PUY-AK12NL	12200.0 Btuh	N/A	COOLING ONLY	21.1	IDU-1	R-454B	208 V	1	27 A	35-11/32" x 9-11/32" x 11-25/32"	99	
ODU-2	PUY-AK12NL	12200.0 Btuh	N/A	COOLING ONLY	21.1	IDU-2	R-454B	208 V	1	27 A	35-11/32" x 9-11/32" x 11-25/32"	99	
ODU-3	SUZ-AA12NLHZ	12000.0 Btuh	15000.0 Btuh	HEAT PUMP	16.8	IDU-3	R-454B	208 V	1	42 A	33" x 13" x 34-5/8"	115	

A3

PUMPS

BASED ON BELL & GOSSETT

				MOTOR DATA						
MARK	MODEL	FLOW RATE (GPM)	HEAD (FT)	HP	RPM	VOLTAGE	PHASE	SYSTEM	LOCATION	REMARKS
P-1	ECOCIRC XL 55-45	22	15	0.196	2902	208	1	AHU-1 CIRC	MECHANICAL MEZZANINE	
P-2	ECOCIRC XL 55-45	22	15	0.196	2902	208	1	AHU-1 CIRC	MECHANICAL MEZZANINE	
P-3	ECOCIRC XL 55-45	22	15	0.196	2902	208	1	AHU-1 CIRC	MECHANICAL MEZZANINE	
P-4	ECOCIRC XL 55-45	22	15	0.196	2902	208	1	AHU-1 CIRC	MECHANICAL MEZZANINE	
P-5	ECOCIRC XL 55-45	23	20	0.267	3248	208	1	AHU-5 CIRC	MECHANICAL MEZZANINE	

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PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

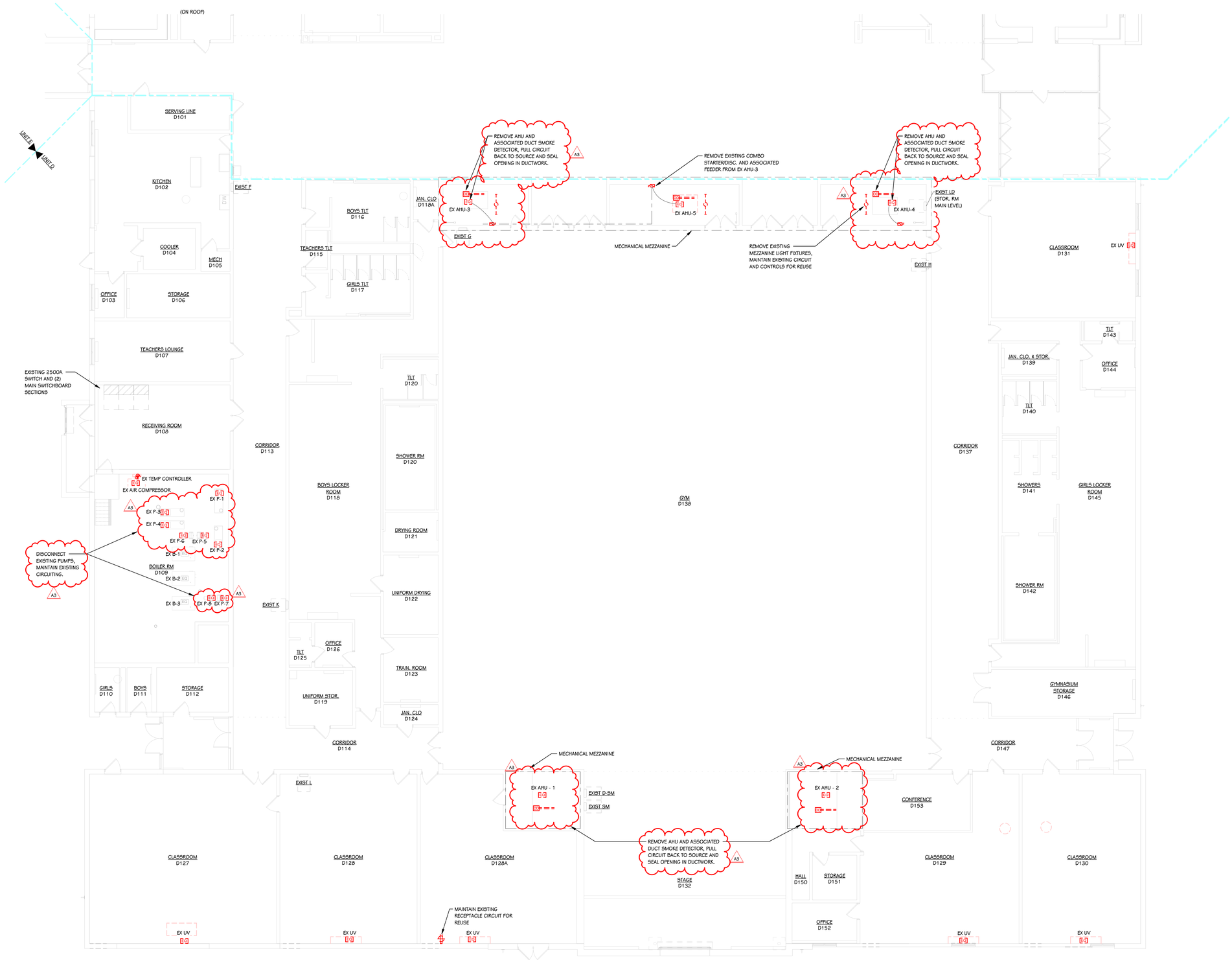
OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
MECHANICAL SCHEDULES AND DETAILS

DATE
JANUARY 16, 2026

SHEET NUMBER
M 502
21-201.061



FIRST FLOOR ELECTRICAL DEMOLITION PLAN - UNIT D

1/8" = 1'-0"

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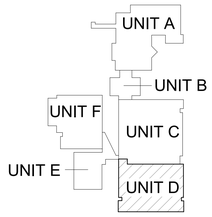
EDWARDSBURG HIGH SCHOOL



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KEY PLAN
SCALE: NO SCALE

PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

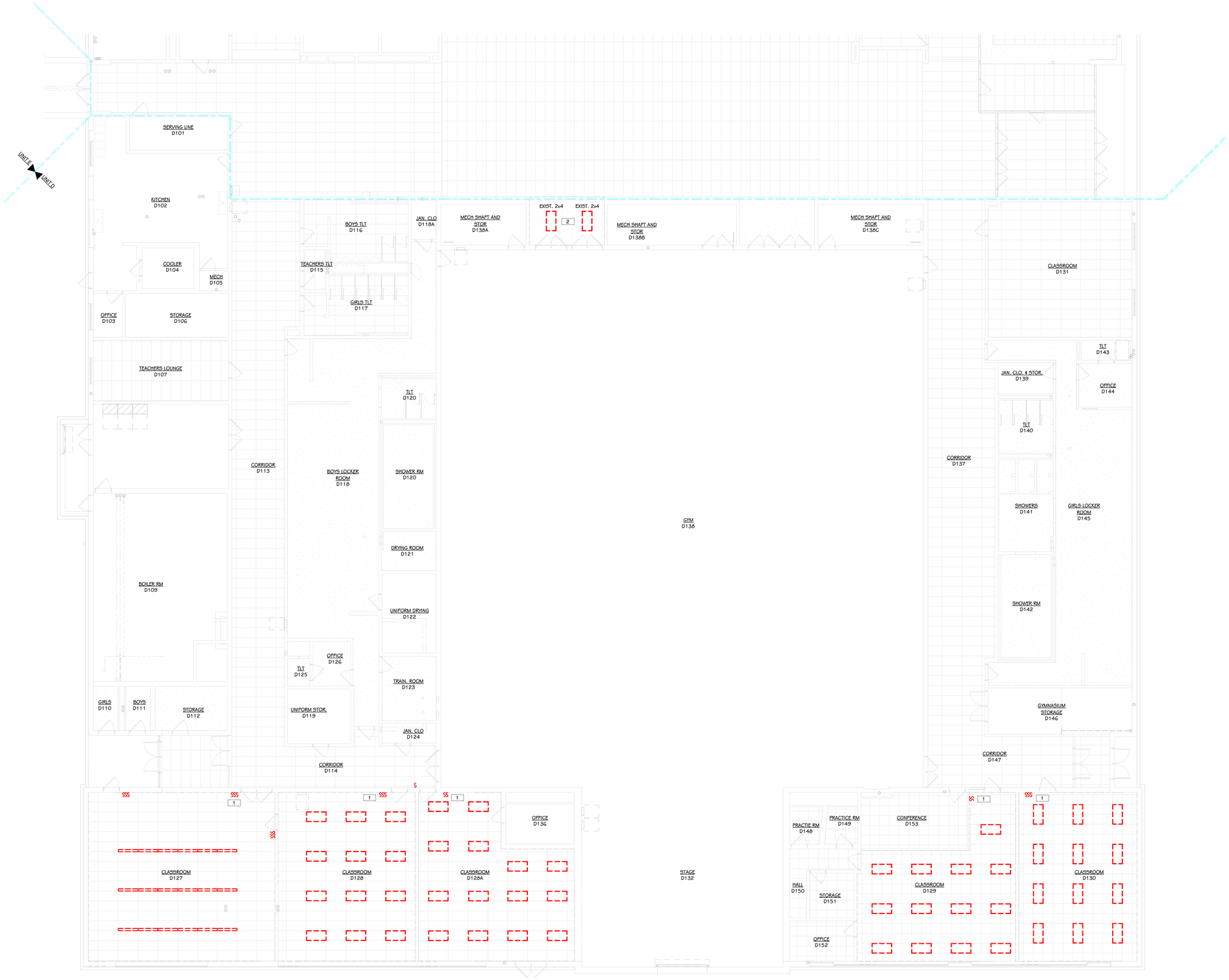
Edwardsburg, Michigan

SHEET TITLE
FIRST FLOOR ELECTRICAL DEMOLITION PLAN - UNIT D

DATE
JANUARY 16, 2026

SHEET NUMBER
ED 101D
21-201.061

KEYED NOTES - ELECTRICAL - DEMOLITION - LIGHTING	
1	MAINTAIN EXISTING LIGHTING CIRCUIT IN THIS AREA.
2	DISCONNECT FIXTURES AND REINSTALL PER DRAWING E 200D, MAINTAIN EXISTING CIRCUIT.



FIRST FLOOR DEMOLITION LIGHTING PLAN - UNIT D

1/8" = 1'-0"

A3

BASE BID: REMOVE LIGHT FIXTURES AS SHOWN AND SALVAGE FOR REINSTALLATION IN THE SAME LOCATIONS IN THE NEW CEILING.

ALTERNATE #2: REFER TO DRAWING E 201D AND E 420 FOR NEW LIGHT FIXTURES, CONTROLS, DETAILS, AND SCHEDULES.

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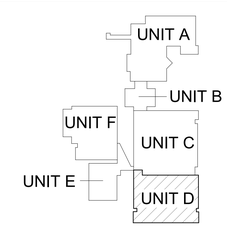
EDWARDSBURG HIGH SCHOOL



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KEY PLAN

SCALE: NO SCALE

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ADDENDUM 02	02/06/2026

PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
FIRST FLOOR LIGHTING DEMOLITION PLAN - UNIT D

DATE
JANUARY 16, 2026

SHEET NUMBER
ED 201D
21-201.061

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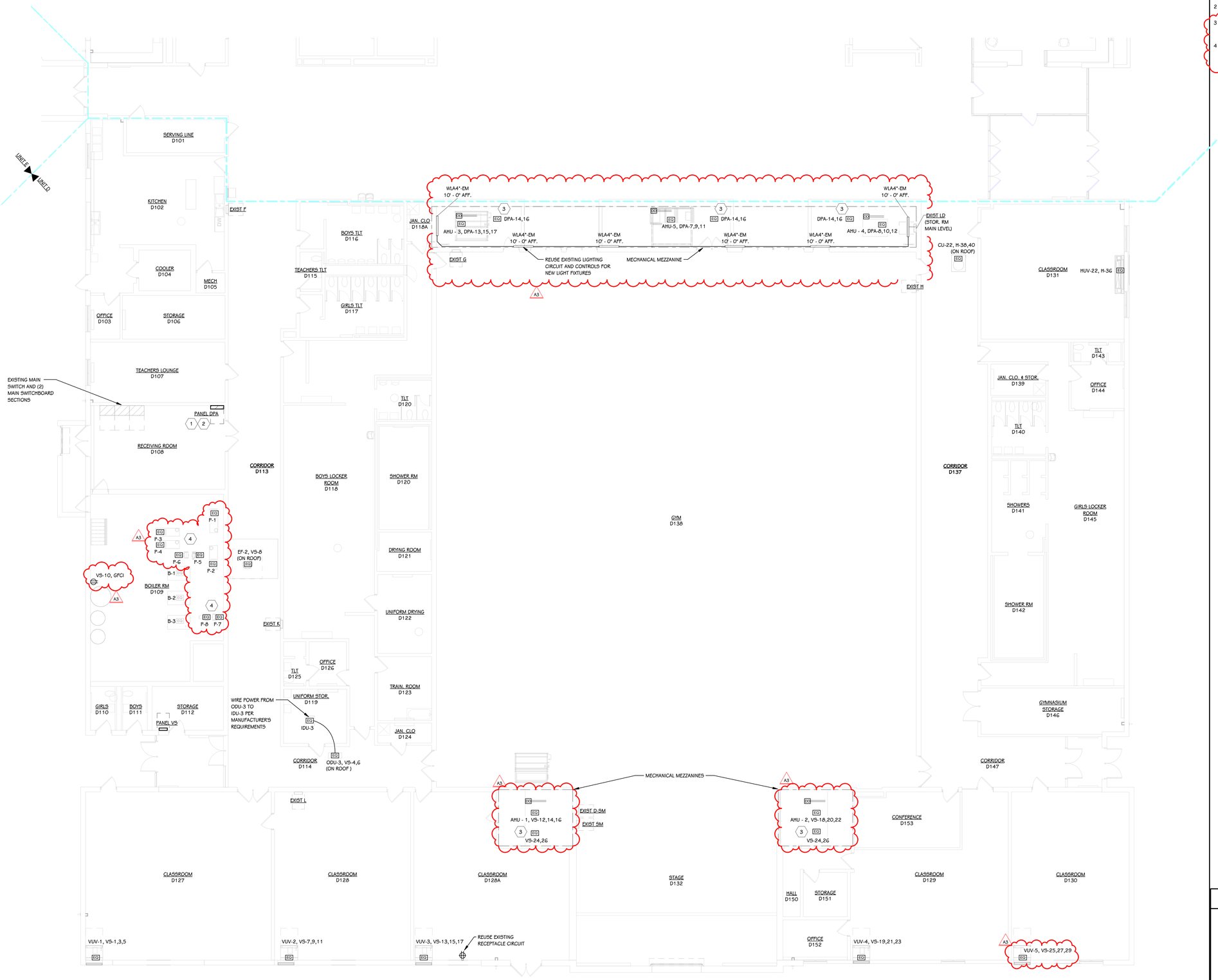

FIRST FLOOR POWER PLAN - UNIT D

1/8" = 1'-0"

KEYED NOTES - ELECTRICAL - POWER

1. PROVIDE NEW 3P225A CIRCUIT BREAKER IN NEW PANEL "DPA" FOR NEW "VUV-5" PANEL.
2. PROVIDE NEW 3P400A CIRCUIT BREAKER IN NEW PANEL "DPA" FOR NEW "VUV-N" PANEL.
3. PROVIDE NEW 2P15A CIRCUIT FOR PUMP ASSOCIATED WITH THE AHU, CIRCUIT AS SHOWN.
4. RECONNECT NEW PUMPS AND ASSOCIATED VFD'S TO EXISTING CIRCUIT, NEW PUMPS TO BE SAME VOLTAGE AND HORSEPOWER AS THE PUMPS BEING REPLACED. VFD'S SUPPLIED BY OTHERS, WIRED BY THE E.C.

A3

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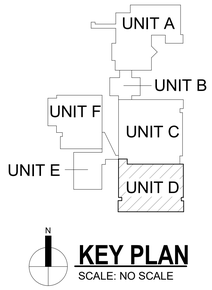
ADDENDUM 02	02/06/2026

EDWARDSBURG HIGH SCHOOL



KEY PLAN
SCALE: NO SCALE

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PROJECT TITLE
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OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
FIRST FLOOR POWER PLAN - UNIT D

DATE
JANUARY 16, 2026

SHEET NUMBER
E 101D
21-201.061

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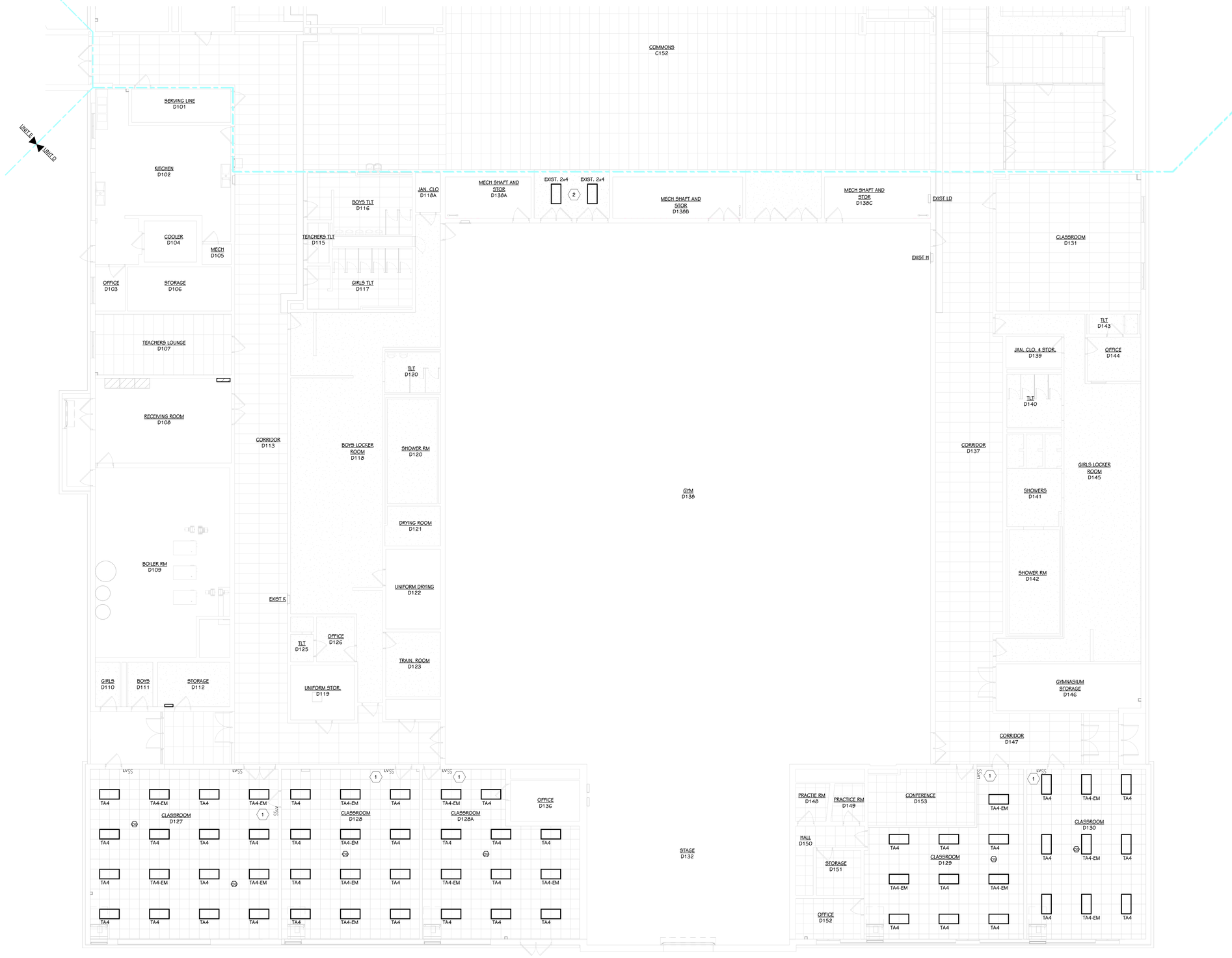
KEYED NOTES - ELECTRICAL - LIGHTING

1. CONNECT NEW LIGHTING TO THE EXISTING LIGHTING CIRCUIT IN THIS AREA.
2. LOCATION FOR FIXTURES TO BE REINSTALLED PER DRAWING ED 200D. RECONNECT TO THE EXISTING LIGHTING CIRCUIT AND CONTROLS.

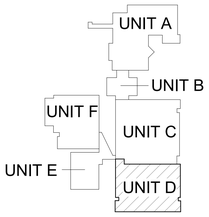
A3



FIRST FLOOR LIGHTING PLAN - UNIT D - ALTERNATE #2

1/8" = 1'-0"

EDWARDSBURG HIGH SCHOOL



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KEY PLAN

SCALE: NO SCALE

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ADDENDUM 02	02/06/2026

PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
FIRST FLOOR LIGHTING PLAN - UNIT D - ALTERNATE #2

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DATE
JANUARY 16, 2026

SHEET NUMBER
E 201D
21-201.061

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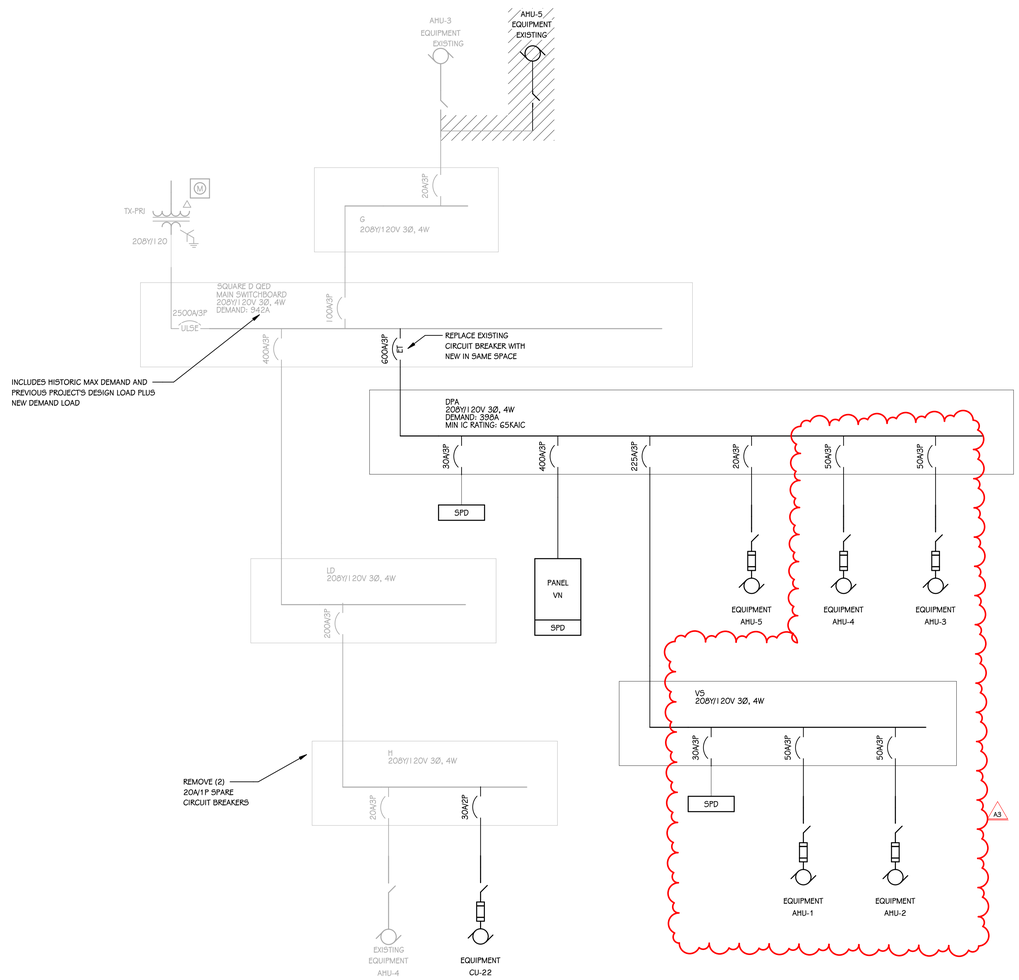

PARTIAL ELECTRICAL ONE LINE

SCALE: NONE

NOTE:
REFER TO PANEL FEEDER SCHEDULE FOR EACH PANEL, TRANSFORMER AND ATS FEEDER SIZE.

REFER TO MECHANICAL EQUIPMENT SCHEDULE FOR EACH EQUIPMENT FEEDER SIZE.

DISCONNECT SIZES TO BE NEXT NOMINAL SIZE UP FROM FEEDER BREAKER SIZE.

BRANCH PANEL SPD SCHEDULE

VOLTAGE	PANEL AMPS	RSE2 SPD MODEL	SURGE RATING	PROTECTION MODES	BREAKER AMPS
208/120V Wye	Up to 400A	RSE-2-120-3Y-A-05-E-F-S	50kA/Mode	L-N, L-G, N-G	30A
208/120V Wye	400A-2000A	RSE-2-120-3Y-A-10-E-F-S	100kA/Mode	L-N, L-G, N-G	60A
480/277V Wye	Up to 400A	RSE-2-277-3Y-A-05-E-F-S	50kA/Mode	L-N, L-G, N-G	30A
480/277V Wye	400A-2000A	RSE-2-277-3Y-A-10-E-F-S	100kA/Mode	L-N, L-G, N-G	60A

*FOR CASCADED PROTECTION DIRECTLY DOWNSTREAM OF SERVICE ENTRANCE AND ALL SUB PANELS. ALL SPD DEVICES TO HAVE TIME STAMP EVENT MONITORING. MOUNT DEVICES WITHIN 10' OF PANEL/SWITCHBOARD BUS.

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PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
ELECTRICAL ONE-LINE DIAGRAM

DATE
JANUARY 16, 2026

SHEET NUMBER
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21-201.061

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PANELBOARD "PANEL VN" LOAD SCHEDULE

PANEL: VN
LOCATION: OFFICE C119B / FIRST FLOOR
ADDED ACCESSORIES: SPD

MOUNTING: SURFACE
AMPS: 400 A MLO
FEED-THRU LUGS...

VOLTAGE: 208/120V, 3PH, 4W
FED FROM: DPA
A.I.C. VALUE: ERROR CALCULATING SSC

	CIRCUIT DESCRIPTION	TRIP (A)	POLES	A		B		C		POLES	TRIP (A)	CIRCUIT DESCRIPTION	
1	HVAC - HUV-1	15	1	840	840					1	15	HVAC - HUV-2	2
3	HVAC - HUV-3	15	1			840	840			1	15	HVAC - HUV-4	4
5	HVAC - HUV-5	15	1					840	840	1	15	HVAC - HUV-6	6
7	HVAC - HUV-7	15	1	840	840					1	15	HVAC - HUV-8	8
9	HVAC - HUV-9	15	1			840	840			1	15	HVAC - HUV-10	10
11	HVAC - HUV-11	15	1					840	840	1	15	HVAC - HUV-12	12
13	HVAC - HUV-13	15	1	840	840					1	15	HVAC - HUV-14	14
15	HVAC - HUV-15	15	1			840	840			1	15	HVAC - HUV-16	16
17	HVAC - HUV-17	15	1					840	840	1	15	HVAC - HUV-18	18
19	HVAC - HUV-19	15	1	840	840					1	15	HVAC - HUV-20	20
21	HVAC - HUV-21	15	1			840	456			1	15	HVAC - EF-1	22
23	HVAC - IDU-1	30	2					1664	1664	2	30	HVAC - IDU-2	24
25	--	--	--	1664	1664					--	--	--	26
27	HVAC - CU-1	30	2			1404	1404			2	30	HVAC - CU-4	28
29	--	--	--					1404	1404	--	--	--	30
31	HVAC - CU-3	30	2	1404	1404					2	30	HVAC - CU-6	32
33	--	--	--			1404	1404			--	--	--	34
35	HVAC - CU-5	30	2					1404	1404	2	30	HVAC - CU-8	36
37	--	--	--	1404	1404					--	--	--	38
39	HVAC - CU-7	30	2			1404	1404			2	30	HVAC - CU-12	40
41	--	--	--					1404	1404	--	--	--	42
43	HVAC - CU-9	30	2	1404	1404					2	30	HVAC - CU-14	44
45	--	--	--			1404	1404			--	--	--	46
47	HVAC - CU-11	30	2					1404	1404	2	30	HVAC - CU-16	48
49	--	--	--	1404	1404					--	--	--	50
51	HVAC - CU-13	30	2			1404	1404			2	30	HVAC - CU-18	52
53	--	--	--					1404	1404	--	--	--	54
55	HVAC - CU-15	30	2	1404	0					2	30	SPARE	56
57	--	--	--			1404	0			--	--	--	58
59	HVAC - CU-17	30	2					1404	1404	2	30	HVAC - CU-20	60
61	--	--	--	1404	1404					--	--	--	62
63	HVAC - CU-19	30	2			1404	0			2	30	SPARE	64
65	--	--	--					1404	0	--	--	--	66
67	HVAC - CU-21	30	2	1404	0					2	30	SPARE	68
69	--	--	--			1404	0			--	--	--	70
71	SPACE	--	1					--	--	1	--	SPACE	72
73	SPACE	--	1	--	--					1	--	SPACE	74
75	SPACE	--	1			--	--			1	--	SPACE	76
77	SPACE	--	1					--	--	1	--	SPACE	78
79	SPACE	--	1	--	--					1	--	SPACE	80
81	HVAC LOW-VOLTAGE XFMR	20	1			790	790			1	20	HVAC LOW-VOLTAGE XFMR	82
83	SPACE	--	1					--	--	1	--	SPACE	84
		TOTAL LOAD:		26896 VA		26168 VA		26620 VA					
	ADDITIONAL FEED THRU LUGS LOAD (IF APPLICABLE):			0 VA		0 VA		0 VA					
		TOTAL AMPS:		225 A		218 A		222 A					

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
HVAC -	78104 VA	100.00%	78104 VA		
Spare	1580 VA	100.00%	1580 VA	**TOTAL CONNECTED LOAD:**	79684 VA
				TOTAL ESTIMATED DEMAND:	79684 VA
				TOTAL CONNECTED LOAD (A):	221 A
				TOTAL ESTIMATED DEMAND...	221 A

NOTES:

PROVIDE SPD BREAKER PER ONELINE SCHEDULE. RECEPTACLE DEMAND FACTOR = FIRST 10kVA X 100% + 50% OF REMAINDER

PANELBOARD "PANEL VS" LOAD SCHEDULE

PANEL: VS
LOCATION: STORAGE D112 / FIRST FLOOR
ADDED ACCESSORIES: SPD

MOUNTING: SURFACE
AMPS: 225 A MLO
FEED-THRU LUGS...

VOLTAGE: 208/120V, 3PH, 4W
FED FROM: DPA
A.I.C. VALUE: ERROR CALCULATING SSC

	CIRCUIT DESCRIPTION	TRIP (A)	POLES	A (VA)		B (VA)		C (VA)		POLES	TRIP (A)	CIRCUIT DESCRIPTION	
1	HVAC - VUV-1	25	3	2042	790					1	20	HVAC LOW-VOLTAGE XFMR	2
3	--	--	--			2042	2496			2	30	HVAC - IDU-3	4
5	--	--	--					2042	2496	--	--	--	6
7	HVAC - VUV-2	25	3	2042	456					1	15	HVAC - EF-2	8
9	--	--	--			2042	180			1	20	RECEPTACLE - BOILER RM D109	10
11	--	--	--					2042	4443	3	50	HVAC - AHU - 1	12
13	HVAC - VUV-3	25	3	2042	4443					--	--	--	14
15	--	--	--			2042	4443			--	--	--	16
17	--	--	--					2042	4443	3	50	HVAC - AHU - 2	18
19	HVAC - VUV-4	25	3	2042	4443					--	--	--	20
21	--	--	--			2042	4443			--	--	--	22
23	--	--	--					2042	333	2	15	HVAC - AHU-1 & 2 PUMPS	24
25	HVAC - VUV-5	25	3	2042	333					--	--	--	26
27	--	--	--			2042	--			1	--	SPACE	28
29	--	--	--					2042	--	1	--	SPACE	30
31	SPARE	30	3	0	0					2	30	SPARE	32
33	--	--	--			0	0			--	--	--	34
35	--	--	--					0	--	1	--	SPACE	36
37	SPARE	30	3	0	0					1	20	SPARE	38
39	--	--	--			0	0			1	20	SPARE	40
41	--	--	--					0	0	1	20	SPARE	42
		TOTAL LOAD:		20673 VA		21770 VA		21923 VA					
	ADDITIONAL FEED THRU LUGS LOAD (IF APPLICABLE):			0 VA		0 VA		0 VA					
		TOTAL AMPS:		172 A		183 A		184 A					

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
HVAC -	62731 VA	100.00%	62731 VA		
RECEPTACLE -	180 VA	100.00%	180 VA	**TOTAL CONNECTED LOAD:**	64367 VA
Spare	1456 VA	100.00%	1456 VA	**TOTAL ESTIMATED DEMAND:**	64367 VA
				TOTAL CONNECTED LOAD (A):	179 A
				TOTAL ESTIMATED DEMAND...	179 A

NOTES:

PROVIDE SPD BREAKER PER ONELINE SCHEDULE. RECEPTACLE DEMAND FACTOR = FIRST 10kVA X 100% + 50% OF REMAINDER

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ELECTRICAL HVAC FEEDER SCHEDULE

DESCRIPTION	FED FROM	DISCONNECT MEANS	CURRENT (FLA)	DEMAND (FLA)	BREAKER/POLES	FEEDER # OF SETS	FEEDER WIRE	FEEDER GROUND	FEEDER EMT	NOTES
208 V										
HVAC - AHU - 1	V5	FUSED DISCONNECT SWITCH	37 A	37 A	50 A/3	1 SET	3 #6	#10 GND.	1"	
HVAC - AHU - 2	V5	FUSED DISCONNECT SWITCH	37 A	37 A	50 A/3	1 SET	3 #6	#10 GND.	1"	
HVAC - AHU - 3	DPA	FUSED DISCONNECT SWITCH	37 A	37 A	50 A/3	1 SET	3 #6	#10 GND.	1"	
HVAC - AHU - 4	DPA	FUSED DISCONNECT SWITCH	37 A	37 A	50 A/3	1 SET	3 #6	#10 GND.	1"	
HVAC - AHU-5	DPA	FUSED DISCONNECT SWITCH	10 A	10 A	20 A/3	1 SET	3 #12	#12 GND.	3/4"	
HVAC - VUV-1	V5	INTEGRAL NON-FUSED DISCONNECT SWITCH	17 A	17 A	25 A/3	1 SET	3 #10	#10 GND.	3/4"	
HVAC - VUV-2	V5	INTEGRAL NON-FUSED DISCONNECT SWITCH	17 A	17 A	25 A/3	1 SET	3 #10	#10 GND.	3/4"	
HVAC - VUV-3	V5	INTEGRAL NON-FUSED DISCONNECT SWITCH	17 A	17 A	25 A/3	1 SET	3 #10	#10 GND.	3/4"	
HVAC - VUV-4	V5	INTEGRAL NON-FUSED DISCONNECT SWITCH	17 A	17 A	25 A/3	1 SET	3 #8	#10 GND.	3/4"	
HVAC - VUV-5	V5	INTEGRAL NON-FUSED DISCONNECT SWITCH	17 A	17 A	25 A/3	1 SET	3 #6	#8 GND.	1"	
208 V										
HVAC - CU-1	VN	NEMA 3R FUSED DISCONNECT	14 A	14 A	30 A/2	1 SET	2 #10	#10 GND.	3/4"	
HVAC - CU-3	VN	NEMA 3R FUSED DISCONNECT	14 A	14 A	30 A/2	1 SET	2 #10	#10 GND.	3/4"	
HVAC - CU-4	VN	NEMA 3R FUSED DISCONNECT	14 A	14 A	30 A/2	1 SET	2 #10	#10 GND.	3/4"	
HVAC - CU-5	VN	NEMA 3R FUSED DISCONNECT	14 A	14 A	30 A/2	1 SET	2 #10	#10 GND.	3/4"	
HVAC - CU-6	VN	NEMA 3R FUSED DISCONNECT	14 A	14 A	30 A/2	1 SET	2 #10	#10 GND.	3/4"	
HVAC - CU-7	VN	NEMA 3R FUSED DISCONNECT	14 A	14 A	30 A/2	1 SET	2 #10	#10 GND.	3/4"	
HVAC - CU-8	VN	NEMA 3R FUSED DISCONNECT	14 A	14 A	30 A/2	1 SET	2 #10	#10 GND.	3/4"	
HVAC - CU-9	VN	NEMA 3R FUSED DISCONNECT	14 A	14 A	30 A/2	1 SET	2 #10	#10 GND.	3/4"	
HVAC - CU-11	VN	NEMA 3R FUSED DISCONNECT	14 A	14 A	30 A/2	1 SET	2 #10	#10 GND.	3/4"	
HVAC - CU-12	VN	NEMA 3R FUSED DISCONNECT	14 A	14 A	30 A/2	1 SET	2 #10	#10 GND.	3/4"	
HVAC - CU-13	VN	NEMA 3R FUSED DISCONNECT	14 A	14 A	30 A/2	1 SET	2 #10	#10 GND.	3/4"	
HVAC - CU-14	VN	NEMA 3R FUSED DISCONNECT	14 A	14 A	30 A/2	1 SET	2 #10	#10 GND.	3/4"	
HVAC - CU-15	VN	NEMA 3R FUSED DISCONNECT	14 A	14 A	30 A/2	1 SET	2 #10	#10 GND.	3/4"	
HVAC - CU-16	VN	NEMA 3R FUSED DISCONNECT	14 A	14 A	30 A/2	1 SET	2 #10	#10 GND.	3/4"	
HVAC - CU-17	VN	NEMA 3R FUSED DISCONNECT	14 A	14 A	30 A/2	1 SET	2 #10	#10 GND.	3/4"	
HVAC - CU-18	VN	NEMA 3R FUSED DISCONNECT	14 A	14 A	30 A/2	1 SET	2 #8	#10 GND.	3/4"	
HVAC - CU-19	VN	NEMA 3R FUSED DISCONNECT	14 A	14 A	30 A/2	1 SET	2 #8	#10 GND.	3/4"	
HVAC - CU-20	VN	NEMA 3R FUSED DISCONNECT	14 A	14 A	30 A/2	1 SET	2 #10	#10 GND.	3/4"	
HVAC - CU-21	VN	NEMA 3R FUSED DISCONNECT	14 A	14 A	30 A/2	1 SET	2 #10	#10 GND.	3/4"	
HVAC - CU-22	H	NEMA 3R FUSED DISCONNECT	14 A	14 A	30 A/2	1 SET	2 #10	#10 GND.	3/4"	
HVAC - IDU-1	VN	NEMA 3R FUSED DISCONNECT	16 A	16 A	30 A/2	1 SET	2 #10	#10 GND.	3/4"	1
HVAC - IDU-2	VN	NEMA 3R FUSED DISCONNECT	16 A	16 A	30 A/2	1 SET	2 #10	#10 GND.	3/4"	1
HVAC - IDU-3	V5	NEMA 3R FUSED DISCONNECT	24 A	24 A	30 A/2	1 SET	3 #10	#10 GND.	3/4"	1

NOTES:

GENERAL: CONDUIT SIZES BASED ON EMT AND COPPER CONDUCTORS UNLESS OTHERWISE NOTED. UPSIZE AS REQUIRED WHERE PVC OR GALVANIZED IS USED OR REQUIRED PER SPECIFICATIONS.

1 PROVIDE CONNECTION TO ROOFTOP EQUIPMENT AND INTERCONNECT BETWEEN OUTSIDE UNIT AND INTERIOR UNIT. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE RAINTIGHT DISCONNECT ON EXTERIOR UNIT.

ELECTRICAL PANEL FEEDER SCHEDULE

DESCRIPTION	FED FROM	CURRENT (FLA)	DEMAND (FLA)	BREAKER / POLES	FEEDER # OF SETS	FEEDER WIRE	FEEDER GROUND	FEEDER EMT	ACCUM VOLT DROP %	NOTES
208 V										
DPA	MAIN SWITCHBOARD	484 A	482 A	600 A / 3	2 SETS	4 #350 KCMIL	#1 GND.	3"	0.0%	
VN	DPA	221 A	221 A	400 A / 3	1 SET	4 #600 KCMIL	#3 GND.	4"	0.0%	
V5	DPA	179 A	177 A	225 A / 3	1 SET	4 #4/0	#4 GND.	2 1/2"	0.0%	

NOTES:

GENERAL: CONDUIT SIZES BASED ON EMT. UPSIZE AS REQUIRED WHERE PVC OR GALVANIZED IS USED OR REQUIRED PER SPECIFICATIONS.

1 CONDUIT SIZES BASED ON EMT AND COPPER CONDUCTORS (UNLESS OTHERWISE INDICATED WITH AN "AL" FOR ALUMINUM). UPSIZE AS REQUIRED WHERE PVC OR GALVANIZED IS USED OR REQUIRED PER SPECIFICATIONS.

2 G.E.C. = GROUNDING ELECTRODE CONDUCTOR FOR SEPARATELY DERIVED SYSTEM (PER SET, USE EQUIVALENT CMIL AND GEC FROM 250.66)

3 GND. = EQUIPMENT GROUNDING CONDUCTOR (E.G.C.)

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PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
ELECTRICAL CONNECTION SCHEDULES

DATE
JANUARY 16, 2026

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E 402
21-201.061

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LIGHT FIXTURE SCHEDULE

SERIES	DESCRIPTION	MOUNTING	COLOR TEMP	WATTS	MANUFACTURER	NOTES
TA4	RECESSED TROFFER, 4' - 0" LONG	RECESSED	4000K	30 VA	LITHONIA LIGHTING: 2GTL4 40LM GZ1 LP840	1, 2
WLA	WALL MOUNT LED LINEAR, 4' - 0" LONG	WALL	4000K	38 VA	LITHONIA LIGHTING: CSS L48 4000LM MVOLT 40K 80CRI	1, 2

TYPE WLA FIXTURE TO BE PART OF THE BASE BID.

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* ALL LED FIXTURES TO HAVE WARRANTY TO MEET OR EXCEED WARRANTY INCLUDED IN BASIS OF DESIGN. FIXTURES LISTED AS EQUALS SHALL MEET DELIVERED LUMENS, CRI, EFFICACY AND OPTIONS OF THAT SPECIFIED. REFER TO SPECIFICATIONS 265100 AND 265600 FOR ADDITIONAL REQUIREMENTS.

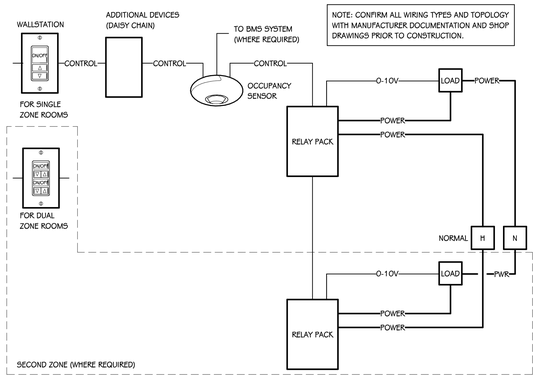
* FIELD COORDINATE AND FIELD MEASURE FOR CUSTOM LENGTH FIXTURES, LENGTHS PROVIDED ARE ROUNDED AND DEPEND ON FIELD CONDITIONS.

1 THE MOUNTING DESCRIPTION IS GENERAL. REFER TO SHOP DRAWINGS AND MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR SPECIFIC MOUNTING DETAILS.

2 PROVIDE A 10W INTEGRAL BATTERY BACKUP FOR FIXTURES LABELED AS "-EM".

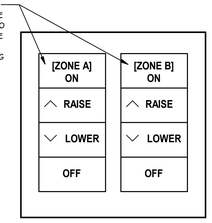
LIGHTING CONTROL SCHEDULE

ROOM #	ROOM NAME	AREA	ALLOWANCES (2019 ASHRAE)		ACTUAL LIGHTING POWER		OCCUPANCY SENSOR		MANUAL CONTROL	
			LPD	WATTS	LPD	WATTS	AUTO ON	AUTO OFF	SWITCH REQUIRED	DIMMER
D130	CLASSROOM	814	0.71 W/ft²	578 VA	0.33 W/ft²	270 VA	50%	100% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
D129	CLASSROOM	823	0.71 W/ft²	585 VA	0.36 W/ft²	300 VA	50%	100% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
D128	CLASSROOM	943	0.71 W/ft²	669 VA	0.38 W/ft²	360 VA	50%	100% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
D127	CLASSROOM	1285	0.90 W/ft²	1157 VA	0.37 W/ft²	480 VA	50%	100% AFTER 20 MINS	YES	WITHIN A DAYLIGHT ZONE
FIRST FLOOR		3865		2989 VA		1410 VA				
Grand total		3865		2989 VA		1410 VA				



1 / E 420 OCCUPANCY SENSOR WIRING DIAGRAM
12" = 1'-0"

ZONE A TO CONTROL THE LIGHT FIXTURES ALONG THE TEACHING WALL, ZONE B TO CONTROL THE REST OF THE CLASSROOM LIGHTING, COORDINATE ZONE NAMING WITH OWNER.



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2 / E 420 DUAL ZONE DIMMING CONTROLLER
12" = 1'-0"

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PROJECT TITLE
EDWARDSBURG HIGH SCHOOL - MECHANICAL UPGRADES

OWNER
EDWARDSBURG PUBLIC SCHOOLS

Edwardsburg, Michigan

SHEET TITLE
LIGHTING SCHEDULES AND DETAILS - ALTERNATE #2

A3

DATE
JANUARY 16, 2026

SHEET NUMBER
E 420
21-201.061

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	00 63 25	Substitution During Construction Request Form
	00 70 00	Amended General Conditions
	00 83 00	Schedule of Project Construction Wages

DIVISION 1 - GENERAL REQUIREMENTS

Section	01 12 00	Multiple Contract Summary
	01 21 00	Allowances
	01 23 00	Alternates
	01 23 00a	Alternates
	01 25 00	Contract Modification Procedures
	01 28 00	Schedule of Values
	01 29 00	Application for Payment
	01 31 00	Project Meetings
	01 32 00	Schedules and Reports
	01 33 00	Submittal Procedures
	01 40 00	Quality Requirements
	01 45 10	Testing Laboratory Services
	01 50 50	Temporary Facilities and Controls

01 51 10 Temporary Electricity, Lighting and Warning Systems
01 51 30 Temporary Heating, Ventilation and Cooling
01 51 50 Temporary Water
01 51 60 Temporary Sanitary Facilities
01 51 80 Temporary Fire Protection
01 52 10 Construction Aids and Temporary Enclosures
01 52 60 Rubbish Container
01 53 10 Fences (Temporary Security)
01 53 30 Barricades
01 54 60 Environment Protection
01 54 80 Utility Protection
01 55 00 Access Roads and Parking Areas
01 56 20 Dust Control
01 56 30 Water Control
01 56 90 Housekeeping and Safety
01 57 60 Project Signs
01 59 10 Project Office
01 59 20 Offices and Sheds
01 60 00 Product Requirements
01 71 50 Final Cleaning
01 72 00 Field Engineering
01 72 50 Work Layout
01 73 10 Cutting and Patching
01 77 00 Contract Closeout
01 91 13 General Commissioning Requirements

DIVISION 02 — EXISTING CONDITIONS

02 41 19 Selective Demolition

DIVISION 04 — MASONRY

04 20 00 Unit Masonry

DIVISION 05 — METALS

05 12 00 Structural Metals Framing
05 50 00 Metal Fabrications

DIVISION 06 — WOOD, PLASTICS, AND COMPOSITES

06 10 00 Rough Carpentry sf0
06 16 00 Sheathing sf0

DIVISION 07 — THERMAL AND MOISTURE PROTECTION

07 01 50.19	Preparation For Reroofing
07 21 00	Thermal Insulation
07 25 00	Weather Barriers
07 27 15	Nonbituminous Self-Adhering Sheet Air Barriers Sf0
07 54 16	Ketone Ethylene Ester - Kee Roofing
07 72 00	Roof Accessories
07 84 13	Penetration Firestopping
07 84 43	Joint Firestopping
07 92 00	Joint Sealants

DIVISION 08 — OPENINGS

08 11 13	Hollow Metal Doors And Frames sf2
08 14 16	Flush Wood Doors sf0
08 31 13	Access Doors And Frames
08 91 19	Fixed Louvers sf0

DIVISION 09 — FINISHES

09 22 16	Non-Structural Metal Framing
09 29 00	Gypsum Board
09 51 13	Acoustical Panel Ceilings
09 65 00	Resilient Flooring
09 65 13	Resilient Base And Accessories
09 91 23	Interior Painting

DIVISION 22 — PLUMBING

22 05 00	Common Work Results For Plumbing
22 05 29	Hangers And Supports For Plumbing Piping And Equipment
22 05 53	Identification For Plumbing Piping And Equipment
22 07 19	Plumbing Piping Insulation
22 10 05	Plumbing Piping

DIVISION 23 — HEATING VENTILATING AND AIR CONDITIONING

23 05 00	Common Work Results For HVAC
23 05 13	Common Motor Requirements For HVAC Equipment
23 05 19	Meters And Gages For HVAC Piping
23 05 23	General Duty Valves For HVAC Piping
23 05 29	Hangers And Supports For HVAC Piping And Equipment
23 05 48	Vibration And Seismic Controls For HVAC Piping And Equipment
23 05 53	Identification For HVAC Piping And Equipment
23 05 93	Testing, Adjusting, And Balancing For HVAC

23 07 00 HVAC Insulation
23 08 00 Commissioning Of HVAC
23 09 00 Instrumentation And Control For HVAC
23 11 23 Facility Natural Gas Piping
23 21 13 Hydronic Piping
23 21 23 Hydronic Pumps
23 23 00 Refrigerant Piping
23 25 00 HVAC Water Treatment
23 31 13 Metal Ducts
23 31 15 HVAC Air-Distribution System Cleaning
23 33 00 Air Duct Accessories
23 34 16 Centrifugal HVAC Fans
23 37 13 Diffusers, Registers, And Grilles
23 37 23 HVAC Gravity Ventilators
23 52 16 Condensing Boilers (Crest Aerco Fire Tube)
23 62 00 Packaged Compressor And Condenser Units
23 73 13 Modular Indoor Central-Station Air-Handling Units
23 74 13 Packaged, Outdoor, Central-Station Air-Handling Units
23 81 26 Split System Air Conditioners
23 82 21 Self Contained Vertical Unit Ventilators
23 82 23 Unit Ventilators

DIVISION 26 — ELECTRICAL

26 00 10 Supplemental Requirements For Electrical
26 05 00 Common Work Results For Electrical
26 05 05 Selective Demolition For Electrical
26 05 19 Low-Voltage Electrical Power Conductors And Cables
26 05 26 Grounding And Bonding For Electrical Systems
26 05 29 Hangers And Supports For Electrical Systems
26 05 33 Raceways And Boxes For Electrical Systems
26 05 44 Sleeves And Sleeve Seals For Electrical Raceways And Cabling
26 05 53 Identification For Electrical Systems
26 05 83 Wiring Connections
26 24 16 Panelboards
26 27 26 Wiring Devices
26 28 13 Fuses
26 28 16 Enclosed Switches And Circuit Breakers
26 29 13 Enclosed Controllers
26 51 00 Interior Lighting
26 56 00 Exterior Lighting

DIVISION 28 — ELECTRONIC SAFETY AND SECURITY

28 46 00 Fire Detection

END OF SECTION 00 00 20

SECTION 00 43 50 - SUBCONTRACTORS AND PRODUCTS LIST

PART 1 - GENERAL

1.01 DESCRIPTION

A. The two (2) low responsive Bidders in each Bid Category shall furnish electronically, the following Subcontractors and Products List to the Construction Manager within **two (2) working days (48 hrs.)** of bid opening, unless submitted with Bid. . The blanks appropriate to the Bid Category(ies) on which they bid shall be completed.

1. The Owner and Architect shall have the right to select any material or equipment named in the Specifications for any particular item where the Bidder either fails to list same or lists more than one name for the item in question.
2. It is intended that this list will show the manufacturer and supplier of major items of work that will be subcontracted and to whom.

1.02 INSTRUCTIONS FOR SUBCONTRACTORS AND PRODUCTS LISTS

A. Each Bidder shall submit a copy of his list of subcontractors and manufacturers of products and equipment proposed for work indicated as required above.

B. The list shall be submitted on forms provided and shall be completely executed. "As Specified" or "With Equipment" type of terminology will not be accepted.

C. Under "Subcontractor", insert the name of the firm which the Bidder proposes to have perform the respective work. If work will be done by the Prime Bidder and no subcontract will be awarded, state "By Own Forces".

D. Submission does not constitute acceptance for use of listed manufacturers' products. Materials and subcontractors are subject to the provisions of the General Conditions and "Standard of Product Acceptability" and must be formally reviewed and adjudged acceptable by the Architect/Engineer.

E. Engineer, Architect and Owner reserve the right to reject submissions of materials, work, or subcontractors that do not, in their opinion, meet the requirements of Drawings, Specifications or job conditions.

F. Materials and subcontractors used for work on the Project shall be in accordance with accepted material list.

1. The list is intended to assure use of materials and vendors acceptably equivalent to those specified and is not a substitution sheet or complete listing of required materials or services.

2. Substitutions for listed items will not be allowed, except when termed acceptable, in writing by the Architect/Engineer, provided that substitution will result in a cost savings to the Owner , determined by the Owner to be a better product,or is made necessary due to unavailability of listed item. Unavailability shall be confirmed in writing by manufacturer named on accepted list.

1.03 CIVIL AND ARCHITECTURAL WORK SUBCONTRACTORS AND PRODUCTS LIST

BID CATEGORY NO. 01 GENERAL TRADES

NAME OF BIDDER_____

The undersigned hereby submits the following Subcontractors and Products List which becomes a part of the undersigned Contract proposal. Subcontractor purchased material, equipment, and labor shall be under the direct management and control of the Prime Contractor. If a dual listing of manufacturers and subcontractors is herein made, it is understood the Architect/Engineer (not the Contractor) will select the manufacturer or subcontractor of his choice. State the XBE Designation.

CIVIL AND ARCHITECTURAL WORK

Section	Description	Cost $$$	Subcontractor	Manufacturer
01 21 00	Allowances			
01 51 60	Temporary Sanitary Facilities			
01 51 80	Temporary Fire Protection			
01 52 10	Construction Aids and Temporary Enclosures			
01 52 60	Rubbish Container			
01 53 10	Fences (Temporary Security)			
01 53 30	Barricades			
01 55 00	Access Roads and Parking Areas			
01 56 20	Dust Control			
01 57 60	Project Signs			
01 72 00	Field Engineering			

Section	Description	Cost $$$	Subcontractor	Manufacturer
02 41 19	Selective Demolition			
04 20 00	Unit Masonry			
05 12 00	*Structural Metals Framing*			
05 50 00	*Metal Fabrications*			
06 10 00	Rough Carpentry sf0			
06 16 00	Sheathing sf0			
07 21 00	Thermal Insulation			
07 25 00	Weather Barriers			
07 27 15	Nonbituminous Self-Adhering Sheet Air Barriers Sf0			
07 84 13	Penetration Firestopping			
07 84 43	Joint Firestopping			
07 92 00	Joint Sealants			
08 11 13	Hollow Metal Doors And Frames sf2			
08 14 16	Flush Wood Doors sf0			
08 31 13	Access Doors And Frames			
09 22 16	Non-Structural Metal Framing			
09 29 00	Gypsum Board			
09 51 13	Acoustical Panel Ceilings			
09 65 00	Resilient Flooring			
09 65 13	Resilient Base And Accessories			
09 91 23	Interior Painting			

Name of Bidder:	Date:
Address:	
City/State/Zip:	
Telephone:	
By:	

1.04 MECHANICAL WORK SUBCONTRACTORS AND PRODUCTS LIST

BID CATEGORY NO. 02 PLUMBING

NAME OF BIDDER_____

The undersigned hereby submits the following Subcontractors and Products List which becomes a part of the undersigned Contract proposal. Subcontractor purchased material, equipment, and labor shall be under the direct management and control of the Prime Contractor. If dual listing of manufacturers or subcontractors is herein made, it is understood the Architect/Engineer (not the Contractor) will select the manufacturer or subcontractor of his choice.

MECHANICAL WORK

Section	Description	Cost $$$	Subcontractor	Manufacturer
01 21 00	Allowances			
01 51 50	Temporary Water			
01 72 00	Field Engineering			
01 91 13	General Commissioning Requirements			
02 41 19	Selective Demolition			
07 84 13	Penetration Firestopping			
07 84 43	Joint Firestopping			
07 92 00	Joint Sealants			
22 05 00	Common Work Results For Plumbing			
22 05 29	Hangers And Supports For Plumbing Piping And Equipment			
22 05 53	Identification For Plumbing Piping And Equipment			
22 07 19	Plumbing Piping Insulation			
22 10 05	Plumbing Piping			

Section	Description	Cost $$$	Subcontractor	Manufacturer
23 08 00	Commissioning Of HVAC			

Plumbing Fixtures:	Manufacturer:
a)_____	_____
b)_____	_____
c)_____	_____
d)_____	_____
e)_____	_____
f)_____	_____
g)_____	_____
h)_____	_____
i) _____	_____
j)_____	_____
k)_____	_____
l)_____	_____

Name of Bidder:	Date:
Address:	
City/State/Zip:	
Telephone:	
By:	

BID CATEGORY NO. 03 MECHANICAL

NAME OF BIDDER_____

The undersigned hereby submits the following Subcontractors and Products List which becomes a part of the undersigned Contract proposal. Subcontractor purchased material, equipment, and labor shall be under the direct management and control of the Prime Contractor. If dual listing of manufacturers or subcontractors is herein made, it is understood the Architect/Engineer (not the Contractor) will select the manufacturer or subcontractor of his choice.

MECHANICAL WORK

Section	**Description**	**Cost $$$**	**Subcontractor**	**Manufacturer**
01 21 00	Allowances			
01 51 30	Temporary Heating, Ventilation and Cooling			
01 72 00	Field Engineering			
01 91 13	General Commissioning Requirements			
02 41 19	Selective Demolition			
07 01 50.19	Preparation For Reroofing			
07 54 16	Ketone Ethylene Ester - Kee Roofing			
07 72 00	Roof Accessories			
07 84 13	Penetration Firestopping			
07 84 43	Joint Firestopping			
07 92 00	Joint Sealants			
08 91 19	Fixed Louvers sf0			
23 05 00	Common Work Results For HVAC			
23 05 13	Common Motor Requirements For HVAC Equipment			

Section	Description	Cost $$$	Subcontractor	Manufacturer
23 05 19	Meters And Gages For HVAC Piping			
23 05 23	General Duty Valves For HVAC Piping			
23 05 29	Hangers And Supports For HVAC Piping And Equipment			
23 05 48	Vibration And Seismic Controls For HVAC Piping And Equipment			
23 05 53	Identification For HVAC Piping And Equipment			
23 05 93	Testing, Adjusting, And Balancing For HVAC			
23 07 00	HVAC Insulation			
23 08 00	Commissioning Of HVAC			
23 09 00	Instrumentation And Control For HVAC			
23 11 23	Facility Natural Gas Piping			
23 21 13	Hydronic Piping			
23 21 23	Hydronic Pumps			
23 23 00	Refrigerant Piping			
23 25 00	HVAC Water Treatment			
23 31 13	Metal Ducts			
23 31 15	HVAC Air-Distribution System Cleaning			
23 33 00	Air Duct Accessories			
23 34 16	Centrifugal HVAC Fans			

Section	Description	Cost $$$	Subcontractor	Manufacturer
23 37 13	Diffusers, Registers, And Grilles			
23 37 23	HVAC Gravity Ventilators			
23 52 16	Condensing Boilers (Crest Aerco Fire Tube)			
23 62 00	Packaged Compressor And Condenser Units			
23 73 13	Modular Indoor Central-Station Air-Handling Units			
23 74 13	Packaged, Outdoor, Central-Station Air-Handling Units			
23 81 26	Split System Air Conditioners			
23 82 21	Self Contained Vertical Unit Ventilators			
23 82 23	Unit Ventilators			

Plumbing Fixtures:	Manufacturer:
a)_____	_____
b)_____	_____
c)_____	_____
d)_____	_____
e)_____	_____
f)_____	_____
g)_____	_____
h)_____	_____

i) _____ _____

j)_____ _____

k)_____ _____

l)_____ _____

Name of Bidder:	Date:
Address:	
City/State/Zip:	
Telephone:	
By:	

1.05 ELECTRICAL WORK SUBCONTRACTORS AND PRODUCTS LIST

BID CATEGORY NO. 04 ELECTRICAL

NAME OF BIDDER_____

The undersigned hereby submits the following Subcontractors and Products List which becomes a part of the undersigned Contract proposal. Subcontractor purchased material, equipment, and labor shall be under the direct management and control of the Prime Contractor. If dual listing of manufacturers or subcontractors is herein made, it is understood the Architect/Engineer (not the Contractor) will select the manufacturer or subcontractor of his choice.

ELECTRICAL WORK

Section	Description	Cost $$$	Subcontractor	Manufacturer
01 21 00	Allowances			
01 51 10	Temporary Electricity, Lighting and Warning Systems			
01 72 00	Field Engineering			
01 91 13	General Commissioning Requirements			
02 41 19	Selective Demolition			
07 84 13	Penetration Firestopping			
07 84 43	Joint Firestopping			
07 92 00	Joint Sealants			
23 08 00	Commissioning Of HVAC			
26 00 10	Supplemental Requirements For Electrical			
26 05 00	Common Work Results For Electrical			

Section	**Description**	**Cost $$$**	**Subcontractor**	**Manufacturer**
26 05 05	Selective Demolition For Electrical			
26 05 19	Low-Voltage Electrical Power Conductors And Cables			
26 05 26	Grounding And Bonding For Electrical Systems			
26 05 29	Hangers And Supports For Electrical Systems			
26 05 33	Raceways And Boxes For Electrical Systems			
26 05 44	Sleeves And Sleeve Seals For Electrical Raceways And Cabling			
26 05 53	Identification For Electrical Systems			
26 05 83	Wiring Connections			
26 24 16	Panelboards			
26 27 26	Wiring Devices			
26 28 13	Fuses			
26 28 16	Enclosed Switches And Circuit Breakers			
26 29 13	Enclosed Controllers			
26 51 00	Interior Lighting			
26 56 00	Exterior Lighting			
28 46 00	*Fire Detection*			

Name of Bidder:	Date:
Address:	
City/State/Zip:	
Telephone:	
By:	

END OF SECTION 00 43 50

SECTION 01 12 00 - MULTIPLE CONTRACT SUMMARY

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Prime Contract, including amended General Conditions and other Division 1 Specification Sections, apply to Work of this Section.

1.02 SUMMARY

A. The intent of this Section is to indicate the Work required by the Contractors and to provide information regarding the duties, responsibilities, and cooperation required by the Contractors, with similar requirements for the subcontractors and suppliers.

B. Owners right to maintain current operations

C. Occupancy requirements

D. Work by Owner

E. Permits, fees, and notices

F. Labor and materials

G. Verifications of existing dimensions

H. Project security

I. Coordination of work

J. Time of commencement and completion

K. Schedule of contract responsibilities

1.03 WORK UNDER SEPARATE CONTRACTS

A. Prime Contracts are defined to include the following contracts described in the Schedule of Contract Responsibilities included hereinafter; and each is recognized to be a major part of the project, with Work to be performed concurrently and in close coordination with Work of other Prime Contracts.

B. The "Contract Documents," as defined in the General Conditions, include "the Drawings." Although Drawings are grouped and identified by classification of the Work, Contractors shall be responsible for their Work as specified herein and as

indicated on the Drawings. Although the majority of the Drawings are "to scale," Contractors are directed to use indicated dimensions for determining material quantities and for other reasons. No additional monies will be allowed due to Contractors using "scaling instruments" to determine material quantities or for other reasons.

C. Separate prime contracts will be awarded as per the **"Schedule of Contract Responsibilities"** (see Part 3 – Execution). Contractors shall include Work required by the Specifications and Drawings for each contract area defined in the Schedule.

D. Work for the complete construction of the Project will be under multiple prime contracts with the Owner. The Construction Manager will manage the construction of the Project.

E. Each Contractor shall be responsible for demolition and disposal of existing items relative to his Contract.

1.04 ADMINISTRATIVE RESPONSIBILITIES OF PRIME CONTRACTORS AND CM

A. The Construction Manager shall be responsible for the maintenance of the Construction Schedule and management of every phase of the Work.
   1. Each Contractor shall read the Specifications and Drawings for other separate Contracts for fixed equipment and the like to be incorporated or attached or built in to the Work; and familiarize himself with the requirements and responsibilities of other Contracts to enable the required coordination and supervision.
   2. Each Contractor shall also familiarize himself with other items to be incorporated into the Work including equipment and Work by the Owner.
   3. Each Contractor shall cooperate with the Construction Manager in notifying him when the Work is at a stage to require the services of other Contractors and shall notify the Construction Manager in the event that such other Contractors do not carry out their responsibilities in connection with such notification.

B. Contractors shall cooperate with and assist the Construction Manager in the preparation of construction progress and procedures, schedule of product deliveries, and their effect on the overall project progress and completion. Other Contractors shall cooperate in getting their Work and the Work of their subcontractors completed according to the schedule as prepared and maintained by the Construction Manager. Each Contractor shall immediately notify the Construction Manager of a delay in delivery of products or the scheduled date of completion that may affect the total progress of construction.

C. The Owner will furnish the topographical survey, either as a part of these Drawings or separately, giving the general topographical lines existing at the site and the property lines.

D. Contractors required to make connections to existing utilities, especially sewerage where gravity flow occurs, shall verify grades and locations at points of such connections and shall notify the Construction Manager of circumstances which would adversely affect the proper flow or connection to such facilities.

1.05 PRIME CONTRACTORS USE OF PREMISES

A. Use of the Site: Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.

1. Owner Occupancy: Allow for Owner occupancy and use by the public.
2. Driveways and Entrances: Keep driveways and entrances serving the premises clear and available to the Owner, the Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.

B. Use of the Existing Building: Maintain the existing building in a weathertight condition throughout the construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period.

1.06 OWNERS RIGHT TO MAINTAIN OPERATIONS

A. During the course of this Project, normal and customary functions and operations must be maintained. The Contract Documents are intended to define a strict separation between the school activities of students and staff from the activities of the construction project.

B. The Construction Manager, Architect, and Owner will not tolerate any visible or audible actions initiated or responded to by any employees of Contractors on this Project toward any students, teachers, or staff members at the school system. Violators shall be promptly removed from the site.

C. The Owner intends to instruct students, teachers, and staff to refrain from communications with Contractor's personnel working on this Project. All communication with Owner and staff shall be through the Construction Manager.

D. Contractors must expend their best effort toward protection of the health, safety, and welfare of occupants on the Owner's property during the course of Work on this Project.

E. Contractors and Subcontractors shall be subject to such rules and regulations for the conduct of the Work as the Owner may establish. Employees shall be properly and completely clothed while working. Bare torsos, legs and feet will not be allowed. Possession or consumption of alcoholic beverages or drugs, tobacco or other noxious behavior on the site is strictly prohibited. Violators shall be promptly removed from the site. Smoking is not permitted on school property or within school buildings.

1.07 OCCUPANCY REQUIREMENTS

A. Full Owner Occupancy: The Owner will occupy the site and existing building during the entire construction period. Cooperate with the Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with the Owner's operations.

B. Partial Owner Occupancy: The Owner reserves the right to occupy and to place and install equipment in completed areas of the building prior to Substantial Completion, provided such occupancy does not interfere with completion of the Work. Such placing of equipment and partial occupancy shall not constitute acceptance of the total Work.

1. The Construction Manager will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied prior to Owner occupancy.
2. Party which obtained general building permit shall obtain a Certificate of Occupancy from local building officials prior to Owner occupancy.
3. Prior to partial Owner occupancy, mechanical and electrical systems shall be fully operational. Required inspections and tests shall have been successfully completed. Upon occupancy, the Owner will operate and maintain mechanical and electrical systems serving occupied portions of the building.
4. Upon occupancy, the Owner will assume responsibility for maintenance and custodial service for occupied portions of the building.

1.08 WORK BY OWNER

A. The Owner intends to complete the following items of Work outside the provisions of these Contract Documents. Contractors shall not restrict or interfere with the Owner's right to the Project to accomplish this Work.

1. Equipment and furniture except as scheduled and specified under Divisions 11 and 12 and shown on the Drawings.

2. Items which may be deleted from Contracts for Work as required by the Contract Documents.
3. Existing school maintenance work.
4. The purchase and supplying of certain materials as noted in the Project Manual.
5. The Owner, under separate contract, shall provide removal of identified asbestos containing materials from the existing structure. The asbestos report is available through the Construction Manager upon request.
6. (List other items as may be applicable).

1.09 PERMITS, FEES, AND NOTICES

A. The Construction Manager will secure the general building permit for the Owner. Each Contractor shall secure and pay for other permits, governmental fees, and licenses necessary for the proper execution and completion of the Contractors Work. Fees to relocate utilities on Owner's property shall be included in the bid of the Contractor doing the relocation.
   1. The Owner shall pay for the cost of the Building Permit.
   2. State filing fees for plan approval are the responsibility of the Owner and will be paid by the Owner.

B. Utility Tie-Ins: Shall be arranged with local utility company and other involved parties for minimum interruption of service.

C. Shutdowns of existing systems shall be limited to minimum time required and scheduled with other involved parties. Provide 2 days written notice of shutdown to Construction Manager and Owner.

D. Inspections of installed work shall be performed by the governing authority as arranged for by the Contractor. Work shall not be covered until approved.

E. Each Contractor shall give notices and comply with laws, ordinances, rules, regulations, and orders of public authorities bearing on the performance of his Work. If a Contractor observes that the Contract Documents are at variance therewith, he shall promptly notify the Construction Manager in writing, and necessary changes shall be adjusted by appropriate notification. If a Contractor performs Work knowing it to be contrary to such laws, ordinances, rules, and regulations, and without such notice to the Construction Manager, he shall assume full responsibility therefore and shall bear the costs attributable thereto.

1.10 LABOR AND MATERIALS

A. Unless otherwise specifically noted, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for the proper execution and completion of his Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

B. Each Contractor shall enforce strict discipline and good order among his employees or other persons carrying out Work of his Contract and shall not permit employment of unfit person or persons or anyone not skilled in the task assigned to them.

C. Prime Contractors must furnish a letter to the Construction Manager, stating that Contractor shall not assign any of its employees, agents or other individuals to perform any services in the District's facilities or program sites if that individual:
1. Is listed on the Michigan Sex Offender Registry, www.mipsor.state.mi.us.
2. Is listed on the Federal Sex Offender Registry www.nsopw.gov.
3. Has not passed a 5-50 drug screen, testing negative for the following drugs:
   a. Amphetamines
   b. Methamphetamines
   c. Cocaine
   d. Codeine
   e. Methadone
   f. Morphine
   g. Phencyclidine (PCP)
   h. Marijuana

D. ID Stickers will be issued by The Skillman Corporation upon receipt of verification from the Contractor that the employee/subcontractor employee or independent contractor has a satisfactory record to work on the Project. Stickers will be numbered and numbers assigned to each worker to be worn on their hardhat. It is the Contractor's responsibility to maintain a record of contractor's name assigned each number and provide to The Construction Manager upon request.

E. Consistent with Michigan law, possession or consumption of drugs on school property will promptly be reported to the local police. Consumption of alcoholic beverages or tobacco or other noxious behavior on school owned property is strictly prohibited. Violators shall be promptly removed from the site. Smoking is not permitted on school property or within school buildings.

1.11 CUTTING AND PATCHING

A. Refer to Section 01 73 10 – Cutting and Patching, for provisions on this subject.

1.12 VERIFICATIONS OF EXISTING DIMENSIONS

A. When verification of existing dimensions is required, the Contractor requiring said verification for the construction or fabrication of his material shall be the Contractor responsible for the procurement of the field information.

1.13 PROJECT SECURITY

A. Each Prime Contractor shall take all reasonable precautions to prevent injury, damage or loss to people and property in, on and adjacent to the project. This shall include not only their own work or property but that of other contractors and the Owner.

B. If deemed necessary by The Construction Manager a project wide security program may be developed for the purpose of preventing damage or loss at the project site or property adjacent thereto. Once accepted by the Owner, contractors shall comply.

1.14 SCHEDULE OF CONTRACT RESPONSIBILITIES - SCOPE

A. Contractors shall submit their proposals based on the work included under each contract area as listed herein. Include Work necessary for a complete project, as shown on the Drawings and called for in the Specifications.

B. Questions concerning the phasing or "Schedule of Contract Responsibilities" should be directed to the Construction Manager, who will be the interpreter and be responsible for this Schedule of Contract Responsibilities and Contract Breakdown, prior to submitting proposals and during construction.

C. The requirements of Division 1 are a part of the Work of each and every contract area. The Contractor for any one contract area shall be familiar with the Work and requirements of all other contract areas.

D. Certain Specification Sections describe Work to be performed under several contract areas. (Example: 06 10 00 - Rough Carpentry.) Provide Work of this nature as required for each contract area whether or not enumerated in the Schedule of Contract Responsibilities.

E. The following contract areas are broken down by Specifications Section conforming basically to the CSI format.

F. The Drawings and Specifications as furnished for each of the Contracts is for the convenience of the Contractor in preparing a proposal for this Project. However, each Contractor is responsible to review the complete set of Drawings and Specifications to assure that Work required to be installed to complete his phase of the Work is included in his proposal. This "Schedule of Contract Responsibilities" is a definition of the work as it is to be bid in separate contracts. Where a specific item of Work is not defined, but is normally inherent to a trade, or is included in the scope of the applicable technical revision, it will be the responsibility of that Contractor to include the Work in his proposal.

G. This "Schedule of Contract Responsibilities" is to aid each Contractor in defining the Scope of Work to be included in his proposal. However, omissions from this "Schedule of Responsibilities" do not relieve the Contractor from including in his

proposal that Work which will be required to complete his Contract. Each Contractor should read the "Schedule of Contract Responsibilities" completely to familiarize himself with the Work of other Contractors that may have Work in adjacent areas and to coordinate the interfacing problems that may occur as the work is assembled and constructed.

H. Where specific Work is to be completed under a particular phase of the Project and the Work is wholly or partially completed by other trades because of the type of work involved or jurisdictional trade agreements, the Contractor will be responsible to subcontract the Work as necessary to complete the Work included in his Contract. No delay in the Work will be allowed due to the failure of the Contractor to subcontract related work required by jurisdictional trade agreements.

1.15 COORDINATION OF WORK

A. Each Contractor is responsible to coordinate his Work with the Work of other trades and other Contractors and requirements of the school system. The Contractor must make space allowances for Work of other Contractors, provide necessary openings where indicated or implied by the Drawings and Specifications. Each Contractor is responsible to protect his own Work.

1.16 TIME OF COMMENCEMENT AND COMPLETION

A. The Contractor shall commence work within ten (10) days after being notified in writing to proceed and shall complete the Work within the time limitations established in the Form of Agreement.
   1. It is anticipated that construction will start within **100 DAYS** calendar days after receipt of bids.
   2. Construction shall be complete within **555 DAYS** consecutive calendar days, or earlier, after Notice to Proceed.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.01 SCHEDULE OF CONTRACT RESPONSIBILITIES

3.02 GENERAL REQUIREMENTS

A. PROVIDED BY OWNER THROUGH THE CONSTRUCTION MANAGER

Section	01 32 00	Schedules and Reports
Section	01 45 00S	Masonry Inspection Report
Section	01 45 10	Testing Laboratory Services
Section	01 59 10	Project Office
Section	01 71 50	Final Cleaning

B. PROVIDED BY ALL CONTRACTORS AS APPLICABLE

Section	01 12 00	Multiple Contract Summary
Section	01 2 300	Alternates
Section	01 25 00	Contract Modification Procedures
Section	01 28 00	Schedule of Values
Section	01 29 00	Applications for Payment
Section	01 31 00	Project Meetings
Section	01 32 00	Schedules and Reports
Section	01 33 00	Submittal Procedures
Section	01 45 10	Testing Laboratory Services (Paragraph 1.05)
Section	01 50 50	Temporary Facilities and Controls
Section	01 54 60	Environment Protection
Section	01 54 80	Utility Protection
Section	01 56 30	Water Control
Section	01 56 90	Housekeeping & Safety
Section	01 59 20	Offices and Sheds
Section	01 60 00	Product Requirements
Section	01 72 50	Work Layout
Section	01 73 10	Cutting and Patching
Section	01 77 00	Contract Closeout

All Contractors shall provide their Superintendents with radios capable of handling multiple channels and compatible with radios used by the Construction Manager.

Autodesk Build does not require users to purchase a license. **Contractors** will be invited to the project and required to use this tool. **Autodesk Build** will be used as the **Current Set** and **As-Built Record Drawings.** Additionally, it will be used to track **Issues** for **Safety**, **QA/QC**, **Non-Compliance Issues**, **Work Completion List** and **Punch List**.

C. PROVIDED BY DESIGNATED CONTRACTORS

Section	01 21 00	Allowances
Section	01 51 10	Temporary Electricity, Lighting and Warning Systems
Section	01 51 30	Temporary Heating, Ventilation and Cooling
Section	01 51 50	Temporary Water
Section	01 51 60	Temporary Sanitary Facilities
Section	01 51 80	Temporary Fire Protection
Section	01 52 10	Construction Aids and Temporary Enclosures
Section	01 52 60	Rubbish Container
Section	01 53 10	Fences (Temporary Security)
Section	01 53 30	Barricades
Section	01 55 00	Access Roads and Parking Areas
Section	01 56 20	Dust Control
Section	01 57 60	Project Signs
Section	01 72 00	Field Engineering

3.03 BID CATEGORIES

A. BID CATEGORY NO. 1 – GENERAL TRADES

General Requirements in Paragraph 3.02.B above.

Section	01 21 00	Allowances
Section	01 51 60	Temporary Sanitary Facilities
Section	01 51 80	Temporary Fire Protection
Section	01 52 10	Construction Aids and Temporary Enclosures
Section	01 52 60	Rubbish Container
Section	01 53 10	Fences (Temporary Security)
Section	01 53 30	Barricades
Section	01 55 00	Access Roads and Parking Areas
Section	01 56 20	Dust Control
Section	01 57 60	Project Signs
Section	01 72 00	Field Engineering
Section	02 41 19	Selective Demolition
Section	04 20 00	Unit Masonry
Section	*05 12 00*	*Structural Metals Framing*
Section	*05 50 00*	*Metal Fabrications*
Section	06 10 00	Rough Carpentry sf0
Section	06 16 00	Sheathing sf0
Section	07 21 00	Thermal Insulation
Section	07 25 00	Weather Barriers
Section	07 27 15	Nonbituminous Self-Adhering Sheet Air Barriers Sf0
Section	07 84 13	Penetration Firestopping
Section	07 84 43	Joint Firestopping
Section	07 92 00	Joint Sealants
Section	08 11 13	Hollow Metal Doors And Frames sf2
Section	08 14 16	Flush Wood Doors sf0
Section	08 31 13	Access Doors And Frames
Section	09 22 16	Non-Structural Metal Framing
Section	09 29 00	Gypsum Board
Section	09 51 13	Acoustical Panel Ceilings
Section	09 65 00	Resilient Flooring
Section	09 65 13	Resilient Base And Accessories
Section	09 91 23	Interior Painting

B. BID CATEGORY NO. 2 - PLUMBING

General Requirements in Paragraph 3.02.B above.

Section	01 21 00	Allowances
Section	01 51 50	Temporary Water
Section	01 72 00	Field Engineering
Section	01 91 13	General Commissioning Requirements
Section	02 41 19	Selective Demolition
Section	07 84 13	Penetration Firestopping

Section	07 84 43	Joint Firestopping
Section	07 92 00	Joint Sealants
Section	22 05 00	Common Work Results For Plumbing
Section	22 05 29	Hangers And Supports For Plumbing Piping And Equipment
Section	22 05 53	Identification For Plumbing Piping And Equipment
Section	22 07 19	Plumbing Piping Insulation
Section	22 10 05	Plumbing Piping
Section	23 08 00	Commissioning Of HVAC

C. BID CATEGORY NO. 3 - MECHANICAL

General Requirements in Paragraph 3.02.B above.

Section	01 21 00	Allowances
Section	01 51 30	Temporary Heating, Ventilation and Cooling
Section	01 72 00	Field Engineering
Section	01 91 13	General Commissioning Requirements
Section	02 41 19	Selective Demolition
Section	07 01 50.19	Preparation For Reroofing
Section	07 54 16	Ketone Ethylene Ester - Kee Roofing
Section	07 72 00	Roof Accessories
Section	07 84 13	Penetration Firestopping
Section	07 84 43	Joint Firestopping
Section	07 92 00	Joint Sealants
Section	08 91 19	Fixed Louvers sf0
Section	23 05 00	Common Work Results For HVAC
Section	23 05 13	Common Motor Requirements For HVAC Equipment
Section	23 05 19	Meters And Gages For HVAC Piping
Section	23 05 23	General Duty Valves For HVAC Piping
Section	23 05 29	Hangers And Supports For HVAC Piping And Equipment
Section	23 05 48	Vibration And Seismic Controls For HVAC Piping And Equipment
Section	23 05 53	Identification For HVAC Piping And Equipment
Section	23 05 93	Testing, Adjusting, And Balancing For HVAC
Section	23 07 00	HVAC Insulation
Section	23 08 00	Commissioning Of HVAC
Section	23 09 00	Instrumentation And Control For HVAC
Section	23 11 23	Facility Natural Gas Piping
Section	23 21 13	Hydronic Piping
Section	23 21 23	Hydronic Pumps
Section	23 23 00	Refrigerant Piping
Section	23 25 00	HVAC Water Treatment
Section	23 31 13	Metal Ducts
Section	23 31 15	HVAC Air-Distribution System Cleaning
Section	23 33 00	Air Duct Accessories

Section	23 34 16	Centrifugal HVAC Fans
Section	23 37 13	Diffusers, Registers, And Grilles
Section	23 37 23	HVAC Gravity Ventilators
Section	23 52 16	Condensing Boilers (Crest Aerco Fire Tube)
Section	23 62 00	Packaged Compressor And Condenser Units
Section	23 73 13	Modular Indoor Central-Station Air-Handling Units
Section	23 74 13	Packaged, Outdoor, Central-Station Air-Handling Units
Section	23 81 26	Split System Air Conditioners
Section	23 82 21	Self Contained Vertical Unit Ventilators
Section	23 82 23	Unit Ventilators

D. BID CATEGORY NO. 4 - ELECTRICAL

General Requirements in Paragraph 3.02.B above.

Section	01 21 00	Allowances
Section	01 51 10	Temporary Electricity, Lighting and Warning Systems
Section	01 72 00	Field Engineering
Section	01 91 13	General Commissioning Requirements
Section	02 41 19	Selective Demolition
Section	07 84 13	Penetration Firestopping
Section	07 84 43	Joint Firestopping
Section	07 92 00	Joint Sealants
Section	23 08 00	Commissioning Of HVAC
Section	26 00 10	Supplemental Requirements For Electrical
Section	26 05 00	Common Work Results For Electrical
Section	26 05 05	Selective Demolition For Electrical
Section	26 05 19	Low-Voltage Electrical Power Conductors And Cables
Section	26 05 26	Grounding And Bonding For Electrical Systems
Section	26 05 29	Hangers And Supports For Electrical Systems
Section	26 05 33	Raceways And Boxes For Electrical Systems
Section	26 05 44	Sleeves And Sleeve Seals For Electrical Raceways And Cabling
Section	26 05 53	Identification For Electrical Systems
Section	26 05 83	Wiring Connections
Section	26 24 16	Panelboards
Section	26 27 26	Wiring Devices
Section	26 28 13	Fuses
Section	26 28 16	Enclosed Switches And Circuit Breakers
Section	26 29 13	Enclosed Controllers
Section	26 51 00	Interior Lighting
Section	26 56 00	Exterior Lighting
Section	*28 46 00*	*Fire Detection*

END OF SECTION 01 12 00

SECTION 01 23 00 - ALTERNATES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including amended General Conditions and other Division 1 Specification Sections, apply to work of this Section.

1.02 PURPOSE

A. The Bids for the Alternates described herein are required in order for the Owner to obtain information necessary for the proper consideration of the Project in its entirety.

1.03 ALTERNATES

A. Definitions: Alternates are defined as alternate products, materials, equipment, installations or systems for the Work, which may, at Owner's option and under terms established by Instructions to Bidders, be selected and recorded in the Owner-Contractor Agreement to either supplement or displace corresponding basic requirements of Contract Documents. Alternates may or may not substantially change scope and general character of the Work; and must not be confused with "allowances", "unit prices", "change orders", "substitutions", and other similar provisions.

1.04 SCHEDULE OF ALTERNATES

B. **MIDDLE SCHOOL ALTERNATE NO. 02**: State the cost to provide new light fixtures and controls in-lieu-of salvaging per base bid.

D. **HIGH SCHOOL ALTERNATE NO. 04:** State the cost to provide new light fixtures and controls in-lieu-of salvaging per base bid.

PART 2 - PRODUCTS, PART 3 - EXECUTION (Not Used)

END OF SECTION 01 23 00

EPS MS/HS HVAC Reno - Pre-Bid RFI Log

Date - 01/29/2026

RFI #	Company Submitting RFI	Date Received	RFI Description	RFI Response
1	The Skillman Corp.	1/29/2026	How will the new water tank in the MS Boiler Room fit into a 3' door opening. Please confirm.	**TP: Upcoming addendum will will modify the drawings to show multiple, smaller storage tanks piped together in parallel.**
2	The Skillman Corp.	1/29/2026	Please provide a Temperature Controls specification.	**TP: Refer to specification section 23 0900 - Instrumentation and Control For HVAC. -DJS**
3	The Skillman Corp.	1/29/2026	General Note #11 on sheet MG001 calls for all existing closed systems to be isolated. Please clarify on the drawings where this will be required.	**TP: The Middle School has one boiler system (new boilers). The High School has two separate boiler systems: one serving Units B, C, and D, and a second system serving Units E and F.** **All systems shall be isolated and flushed with clean water until the discharge water quality matches the incoming supply water quality.**
4	The Skillman Corp.	1/29/2026	Please provide a fire alarm specification for the new duct detectors.	**TP: Specification section will be added in upcoming addendum.**

5	The Skillman Corp.	1/29/2026	There are six old dampers in the HS Gym that need to be replaced. Please advise.	**TP: Louvers on east & west wall will be replaced (4 total). Added in upcoming Addendum #3**
6	The Skillman Corporation	2/4/2026	Add electrical demo note to ED101D to reflect AD201 ceiling demo. - Remove light fixtures and salvage for reinstallation in new ceiling.Pull back circuit wiring to allow AHU access to mezzanine.	**TP: A note clarifying base bid and alternate will be added in the upcoming Addendum #3.**
7	Ideal Consolidated	2/5/2026	Is the roof under warranty with anyone so we know who to contact to do the work since all roof work has been added to the mechanical bid category.	TSC: Yes, please reach out to Hoekstra Roofing: Beau Byerly Project Estimator Email: beau@hoekstraroofing.com Mobile: (616) 914-7112

8	Precision Controls Systems	2/5/2026	Can Precision Controls Systems be added to the Temperature Controls Specification?	TP: Precision Controls System may bid as voluntary alternate only. Will not be added to specification.
9	DA Dodd	2/11/2026	There a couple pieces of equipment that are scheduled to be installed in existing mechanical rooms that will not fit through a standard door. Are there going to be provisions under the General Trades Package to provide openings and repair after new equipment is installed?	TP: In addendum 3 a door at the MS will be modified to handle new equipment. Water tanks at the MS will be sized smaller to fit through opening. Other equipment has been accounted for. If other equipment is not accounted for please send RFI.
10	DA Dodd	2/11/2026	At the High School, Sheet M 201D, Note 7 states to remove existing motors on eight (8) existing pumps and replace with VFD-compatible motors and variable frequency drives. Can existing pump motors be verified and distributed for horsepower and voltage to provide correct motors and VFD's? Note, single phase motors cannot be compatible with VFD's per the Bell & Gossett rep that I spoke with.	TP: In addendum 3, notes on Sheet M 201D revised showing existing pump information.

11	DA Dodd	2/11/2026	Can a schedule of new variable frequency drives be created and put into the Mechanical Schedule drawings for pricing, since mechanical package will be responsible to supply?	TP: In addendum 3, notes on Sheet M 201D revised showing existing pump information.
12	Herrman & Goetz	2/12/2026	Detail 1 on Sheet M504 shows the condensing unit to be installed on a slip sheet and composite pad. Section 3.2 of specification 23 6200 states to install roof mounted condensing untis on equipment curbs rails with isolators. Please clarify the intent for condensing unit installation. If condensing units need to be install on curbs rails, this will significantly increase the scope of roofing work.	TP: Instal per detail on M504. In addendum 3 spec section 23 6200 revised to include mounting requirements for condensing units 5 tons and smaller.

13	Herrman & Goetz	2/12/2026	There are two instances of CU-01 on sheet M101C at the High School. I am guessing the second one show near classroom C114 is not required since HUV-02 is heating only? Please confirm.	TP: CU tags for clarification revised in addendum 3. HUV-02 serving C114 is heating only.
14	Herrman & Goetz	2/12/2026	Please verify that High School AHU-05 is heating only. No cooling is indicated.	TP: Correct, AHU-05 is heating only.
15	Herrman & Goetz	2/12/2026	Is new valving required for new HUVs (shutoff valves, strainer, balance valve) or shall the units be reconnected to existing valving at the HS?	TP: New valves required for new HUVs. Per detail 4 on sheet M503.
16	Herrman & Goetz	2/12/2026	Several, if not all the classrooms with unit ventilators to be removed have finned tube enclosures along the entire length of the wall that are not shown on the drawing. Are these enclosures to be removed by the mechanica bid category as well?	TP: Correct to be removed by mechanical bid category. Similar fin tube removal scope shown on sheet MD101B Keynote 2.
17	Herrman & Goetz	2/12/2026	The HS plumbing drawings shows one point of reconnection to the existing cold/hot water riser in the chase for the restrooms. Has it been verified that there is one set of risers in the chase rather than the water piping being fed to the fixtures individually from below?	TP: This tie point is based on the existing drawings. On site verification needed to determine actual risers located in the chase.
18	Herrman & Goetz	2/12/2026	What is the existing gas pressure in the MS mechanical room? Does each boiler require a dedicated gas regulator?	TP: To be confirmed. Pressure range within 11"-14" W.C.
19	Herrman & Goetz	2/12/2026	Sheet M301 shows 12" flue and 10" combustion air for the boilers for the MS. Both the AERCO BMK5000 and Lochinvar 5000MBH models have a 14" flue (12" flue for low gas pressure) and 14" combustion air. Please confirm combustion air and flue sizes for the boilers.	TP: Basis of design is AERCO BMK5000N, which has different venting requirements than the BMK5000. AERCO is the district standard and is specified as a flat spec; Lochinvar is not an approved manufacturer. Provide venting and combustion air in accordance with AERCO BMK5000N requirements.
20	Skillman	2/13/2026	Should note #11 on the Middle School Plumbing Drawing P101 regarding sink controls/temperatures be removed and only applicable to the High School project?	TP: Note removed.

21	Pearson	2/13/2026	Addendum #1 assigns the supply of the steel lintels and roof support to the general trades contractor. Will a specification for the work item be issued?	TP: Addendum 03 will have spec section 05 1200 and 05 5000 included
22	Pearson	2/13/2026	There is a specification section for 072500 Weather barrier and 072715 self adhered Air barrier. What differentiates the use of which product and where is this applicable?	TP: 072500 weather barrier can be disregarded and 072715 self adhered air barrier can be supplied at exterior masonry walls that are being touched
23	Skillman	2/13/2026	Sat the MS, the ceilings called to be demoed in the Cafeteria D108 and one classroom A228 with existing ceiling fans. There is no note to remove and reinstall. Please advise.	TP: Ceiling fans within cafeteria D108 are to be removed and reinstalled. Ceiling fan within A228 are demolished.
24	EMC	2/13/2026	Please advise no scope in corridor D105 or classrooms D130- D133. These areas are not accounted for on any D or E pages.	TP: There is no electrical scope in Corridor D105 or Classrooms D130-133.
25	Skillman	2/16/2026	At the HS, please provide drawings or notes that indicate tunnell access points.	TP: Tunnel access points, per existing drawings I am seeing one in C113, C109, C103, D131, D130, D109