ADDENDUM
NO. 2

December 22, 2022

LOY NORRIX HIGH SCHOOL HVAC IMPROVEMENTS
606 East Kilgore Road
Kalamazoo, MI, 49001

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 November 22, 2022, 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 2-1 through ADD 2-3, dated December 22, 2022, TowerPinkster Addendum 2 dated December 16, 2022, and Reissued Drawings.

A. SPECIFICATION SECTION 00 31 00 – BID FORM *(REISSUED)*

1. Added the following:

BREAKDOWN OF BASE-BID (FOR ACCOUNTING PURPOSES ONLY)

Bid Category No. 7 CONTROLS to provide cost included in Base-Bid for 'UNIT A' SCOPE OF WORK:

Cost DOLLARS ($_____)

Bid Category No. 7 CONTROLS to provide cost included in Base-Bid for 'UNIT B' SCOPE OF WORK:

Cost DOLLARS ($_____)

B. **SPECIFICATION SECTION 01 12 00 – MULTIPLE CONTRACT SUMMARY *(NOT REISSUED)***

1. Part 3.03 Bid Categories

C. Bid Category 3 Mechanical – Unit A Only

Add the following Clarifications:

Clarification No. 7. Bid Category No. 4 Mechanical Unit B scope will terminate at the valves and piping coming from south side Unit B right before connecting with Unit A piping; reference Sheet M200D2. Valves present on piping coming from Unit B will be provided by Bid Category 4 Mechanical Contractor.

Clarification No. 8. Demolition scope of Bid Category No. 4 Mechanical Unit B is similar to above Clarification No. 7, extent of demolition is up to the intersection points with Unit A piping.

D. Bid Category 4 Mechanical – Unit B only

Add the following Clarifications:

Clarification No. 7. Bid Category No. 4 Mechanical Unit B scope will terminate at the valves and piping coming from south side Unit B right before connecting with Unit A piping, reference Sheet M200D2. Valves present on piping coming from Unit B will be provided by Bid Category 4 Mechanical Contractor.

Clarification No. 8. Demolition scope of Bid Category No. 4 Mechanical Unit B is similar to above Clarification No. 7, extent of demolition is up to the intersection points with Unit A piping.

E. Bid Category No. 7 – Controls

Add the following:

1. Revised scope to include entire project scope Units A & B and Mechanical Room in Unit D1.

G. DELETED BID CATEGORY NO. 8 – CONTROLS UNIT B.

1. This scope has been moved to Bid Category No. 7.

C. SPECIFICATION SECTION 01 21 00 – CONTRACT ALLOWANCES *(NOT REISSUED)*

Delete the following:

1. Deleted Bid Category No. 8 – Controls Unit B.

(Amended for KPS)

CONTRACTOR'S BID FOR PUBLIC WORKS

Loy Norrix High School HVAC Improvements

Kalamazoo Public Schools

Kalamazoo County

PART I

(To be completed for all bids)
(Please type or print)

BIDDER (firm) _____

Address _____ P.O. Box _____

City/State/Zip _____
Telephone Number _____ Email Address: _____
Person to contact regarding this Bid: _____
Pursuant to notices given, the undersigned offers to furnish labor and materials necessary to complete the construction work for:

_____
Insert Bid Category No.(s) and Name(s)

of public works project, **Loy Norrix High School HVAC Improvements**, in accordance with Plans and Specifications prepared by **TowerPinkster**, **242 E. Kalamazoo Avenue, Suite 100, Kalamazoo, MI 49007**, as follows:

BASE BID

For the sum of _____
(sum in words)

_____DOLLARS ($_____)
(sum in figures)

The undersigned acknowledges receipt of the following Addenda:

Receipt of Addenda No.(s)_____

PROPOSAL TIME

Bidder agrees that this Bid shall remain in force for a period of sixty (60) consecutive calendar days from the due date, and Bids may be accepted or rejected during this period. Bids not accepted within said sixty (60) consecutive calendar days shall be deemed rejected.

Attended pre-bid conference YES _____ NO

Has visited the jobsite YES _____ NO

The Bidder must attach to this bid, the sworn and notarized affidavit (attached at the end of this Bid Form) disclosing any familial relationship between the Owner or an employee of the bidder and any member of the District's Board or the Superintendent of the District.

The Bidder has reviewed the Guideline Schedule in Section 01 32 00 and the intent of the schedule can be met. _____ YES _____ NO

The Skillman Corporation's diversity initiative is to create a program to encourage, assist and measure the active participation of Minority- Owned, Women-Owned, Veteran – Owned and Disabled Individual-Owned Businesses. The Program is to ensure that MWVDBEs are provided full and equal opportunity to participate in all Skillman Corporation's Projects.

Bidder has included:

DBE: YES _____% NO _____
MBE: YES _____% NO _____
WBE: YES _____% NO _____
VBE: YES _____% NO _____

The undersigned further agrees to furnish a bond or certified check with this Bid for an amount specified in the Notice to Bidders. If Alternate Bids apply, submit a proposal for each in accordance with the Plans and Specifications.

ALTERNATE BIDS

A blank entry or an entry of "No Bid", "N/A", or similar entry on any Alternate will cause the bid to be rejected as non-responsive only if that Alternate is selected. If no change in the bid amount is required, indicate "No Change".

****MARK "ADD" OR "DEDUCT" FOR EACH ALTERNATE****

Alternate Bid No. 1 – Building Automation System Training: Building automation system training specified in Section 23 09 00 "Instrumentation and Control for HVAC.

Change the Base Bid the sum of _____
(sum in words)

_____ DOLLARS ($_____) ADD DEDUCT
(sum in figures)

Alternate Bid No. 2 – Transformer Replacement: Replace Existing Transformer T-11 with new larger Transformer and new Low-Voltage Switch Gear.

Change the Base Bid the sum of _____
(sum in words)

_____ DOLLARS ($_____) ADD DEDUCT
(sum in figures)

<u>BREAKDOWN OF BASE-BID (FOR ACCOUNTING PURPOSES ONLY)</u>

<u>Bid Category No. 7 CONTROLS to provide cost included in Base-Bid for 'UNIT A' SCOPE OF WORK:</u>

Cost DOLLARS ($_____)

<u>Bid Category No. 7 CONTROLS to provide cost included in Base-Bid for 'UNIT B' SCOPE OF WORK:</u>

Cost DOLLARS ($_____)

NON-COLLUSION AFFIDAVIT

The undersigned Bidder or agent, being duly sworn on oath, says that he has not, nor has any other member, representative, or agent of the firm, company, corporation or partnership represented by him, entered into any combination, collusion or agreement with any person relative to the price to be bid by anyone at such letting nor to prevent any person from bidding nor to induce anyone to refrain from bidding, and that this Bid is made without reference to any other bid and without any agreement, understanding or combination with any other person in reference to such bidding.

He further says that no person or persons, firms, or corporations has, have, or will receive directly or indirectly, any rebate, fee, gift, commission, or thing of value on account of such sale.

OATH AND AFFIRMATION

I affirm under the penalties of perjury that the foregoing facts and information are true and correct to the best of my knowledge and belief.

Dated at _____this _____ day of _____, 20___.

_____
(Name of Organization)

By _____
(Title of Person Signing)

ACKNOWLEDGEMENT

STATE OF_____)
) SS:
COUNTY OF _____)

_____ being duly sworn, deposes and says that

he is _____of the above _____
(Title) (Name of Organization)

and that the statements contained in the foregoing Bid, certification and Affidavit are true and correct.

Subscribed and sworn to before me this _____ day of _____ , 20 ___ .

_____
Notary Public

My Commission Expires:_____

County of Residence: _____

PART II

(Complete sections I, II, and III for all state and local public works projects)

These statements to be submitted under oath by each bidder with and as a part of his bid. (Attach additional pages for each section as needed.)

SECTION I EXPERIENCE QUESTIONNAIRE

1. What public works projects has your organization completed?

Contract Amount	Class of Work	When Completed	Name and Address of Owner

2. What public works projects has your organization now in process of construction:

Contract Amount	Class of Work	When Completed	Name and Address of Owner

3. Have you ever failed to complete any work awarded to you?_____If so, where and why?_____

_____

_____

4. List references from private firms for which you have performed work.

_____

_____

_____

SECTION II PLAN AND EQUIPMENT QUESTIONNAIRE

1. Explain your plan or layout for performing proposed Work.

2. If you intend to sublet any portion of the Work, state the name and address of each subcontractor, equipment to be used by the subcontractor, and whether you expect to require a bond.

3. What equipment do you intend to use for the proposed Project?

4. Have you made contracts or received offers for all materials within prices used in preparing your proposal? _____ yes _____ no.

SECTION III OATH AND AFFIRMATION

I hereby affirm under the penalties of perjury that the facts and information contained in the foregoing Bid for public works are true and correct to the best of my knowledge and belief.

IN TESTIMONY WHEREOF, The Bidder has hereunto set his hand this

_____ day of _____ , 20 _____ .

Bidder:_____

IN TESTIMONY WHEREOF, The Bidder (a firm) have hereunto set their hands this

_____ day of _____, 20_____.

Firm Name: _____

By:_____

Individual names:_____

IN TESTIMONY WHEREOF, The Bidder (a corporation) has caused this proposal to be signed by its President and Secretary and affixed its corporate seal this_____ day of _____ , 20 _____.
Name of Corporation:

President: _____
Secretary:_____

ACKNOWLEDGEMENT

STATE OF_____)
) SS:
COUNTY OF_____)

_____ being duly sworn, deposes and says that

he is _____ of the above _____
(Title) (Name of Organization)

and that the answers to the questions in the foregoing questionnaires and all statements therein contained are true and correct.

Subscribed and sworn to before me this_____ day of _____, 20 ___.

_____
Notary Public

My Commission Expires: _____
County of Residence: _____

KALAMAZOO PUBLIC SCHOOLS
FAMILIAL STATEMENT OF DISCLOSURE

***** Failure to return this notarized statement/signature with the bid will result in bid disqualification *****

Kalamazoo Public Schools
600 Vine Street
Kalamazoo, MI 49008

Dear Ladies and Gentlemen:

I/We, the undersigned, acknowledge by this sworn and notarized statement disclosing any familial relationship (or lack of a relationship) that exists between the Owner or any employee of the bidder and any member of the Board of Education of the Kalamazoo Public Schools or the Superintendent of the School District. The District shall not accept a bid that does not include a sworn and notarized disclosure statement.

○ We have prior familial knowledge of parties' involved (Attached clarification).

○ We have no prior familial knowledge of parties involved.

_____
Signature

_____
Company Name

_____
Notary Public

_____County, Michigan

My Commission Expires:_____

CERTIFICATION OF COMPLIANCE – IRAN ECONOMIC SANCTIONS ACT
Michigan Public Act No. 517 of 2012

The undersigned, the owner, or authorized officer of the below-named company (the "Company"), pursuant to the compliance certification requirement provided in the **Kalamazoo Public School's** Request For Proposal (the "RFP"), hereby certifies, represents, and warrants that the Company (which includes its officers, directors and employees) is not an "Iran Linked Business" within the meaning of the Iran Economic Sanctions Act, Michigan Public Act No. 517 of 2012 (the "Act"), and that in the event the Company is awarded a contract by the **Kalamazoo Public School** as a result of the aforementioned RFP, the Company is not and will not become an "Iran Linked Business" at any time during the course of performing any services under the contract.

The Company further acknowledges that any person who is found to have submitted a false certification is responsible for a civil penalty of not more than $250,000.00 or two (2) times the amount of the contract or proposed contract for which the false certification was made, whichever is greater, the cost of the **Kalamazoo Public School's** investigation, and reasonable attorney fees, in addition to the fine. Moreover, any person who submitted a false certification shall be ineligible to bid on a request for proposal for three (3) years from the date that it is determined that the person has submitted the false certification.

BIDDER:

_____

By: _____

Its: _____

STATE OF MICHIGAN)
)ss.
COUNTY OF _____)

This instrument was acknowledged before me on the _____ day of _____, 20__, by _____.

_____
, Notary Public

_____ County, Michigan

My Commission Expires: _____

Acting in the County of: _____

END OF SECTION 00 31 00

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ADDENDUM NO. 2

DATE OF ISSUANCE:	**December 16th, 2022**
PROJECT:	**Loy Norrix High School -Mechanical Improvements** **606 East Kilgore Road** **Kalamazoo, MI 49001**
OWNER:	**Kalamazoo Public Schools**
ARCHITECT'S PROJECT NO.:	**21-807.00**
ORIGINAL BID ISSUE DATE:	**November 22nd, 2022**

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 **Two** pages of text and the following documents:

- Bidding Documents: **NA**
- Contract Conditions: **NA**
- Specification Sections: **NA**
- Drawings: **All previously issued drawings**

CHANGES TO DRAWINGS

ADD-2 Item No. D-1 - Project Scope Change

Refer to Sheet(s): Re-Issued all previously issued drawings.

Project Scope Change:

- All drawings are reissued. Disregard ALL previously issued drawings.
- Unless noted otherwise all Unit D1, Unit D2, Unit K, and Unit M both lower level and level 1 scope has been eliminated.
- Unless noted otherwise project scope is in Unit A and Unit B only. Re-issued drawings indicate relevant project scope for Unit A or Unit B, any irrelevant drawing content has been labeled as such or is striked out.

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- Project scope in Unit A and Unit B Shall be bid separately. Contractors can bid both Unit A and Unit B, but shall submit separate bids for Unit A and Unit B. Unit A and Unit B will be run as separate projects by Skillman. Refer to Skillman published addendum for more information.
- No changes to the specification. Originally issued specification (11/22/2022) applies to Unit A and Unit B projects.

END OF ADDENDUM.

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Kalamazoo Public Schools

Every child, every opportunity, every time!

LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

CONSTRUCTION DOCUMENTS

Addendum No. 2

KPS Loy Norrix 21,807.00
December 16, 2022

DESIGN TEAM

ARCHITECT/ENGINEER

TowerPinkster
Architecture · Engineering · Interiors

242 E KALAMAZOO AVE, SUITE 200
KALAMAZOO, MICHIGAN 49007
PHONE: 269.343.6133
FAX: 269.343.6633

CONSTRUCTION MANAGER

SKILLMAN

8120 MOORSBRIDGE RD
KALAMAZOO, MICHIGAN 49024
PHONE: 269.650.5757

SITE ADDRESS

KALAMAZOO PUBLIC SCHOOLS
LOY NORRIX HIGH SCHOOL
606 EAST KILGORE ROAD
KALAMAZOO, MI 49001

REFERENCE CODES

BUILDING:	2015 MICHIGAN BUILDING CODE AND 2012 NFPA 101 LIFE SAFETY CODE
BUILDING:	2015 MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS
ENERGY:	2015 MICHIGAN ENERGY CODE
PLUMBING:	2018 MICHIGAN PLUMBING CODE
MECHANICAL:	2015 MICHIGAN MECHANICAL CODE
FUEL GAS:	(IFGC) 2015 INTERNATIONAL FUEL GAS CODE
ELECTRICAL:	2017 NATIONAL ELECTRICAL CODE WITH MICHIGAN AMENDMENTS
BARRIER-FREE:	2015 MICHIGAN BUILDING CODE AND 2009 ICC & C A117.1
USE GROUP:	E
CONSTRUCTION TYPE:	2B
AUTOMATIC SPRINKLERS:	PARTIALLY SPRINKLED

PROJECT AREA

EXISTING LOWER FLOOR:	150,676 SQ. FT
EXISTING 1ST FLOOR:	217,760 SQ. FT
TOTAL SQ. FT.:	368,436 SQ. FT

RENOVATION AREA SUMMARY:	
TOTAL RENOVATION SF. FT.:	144,053 SQ. FT
TOTAL UNMODIFIED BUILDING AREA:	224,383 SQ. FT
TOTAL SQ. FT.:	368,436 SQ. FT

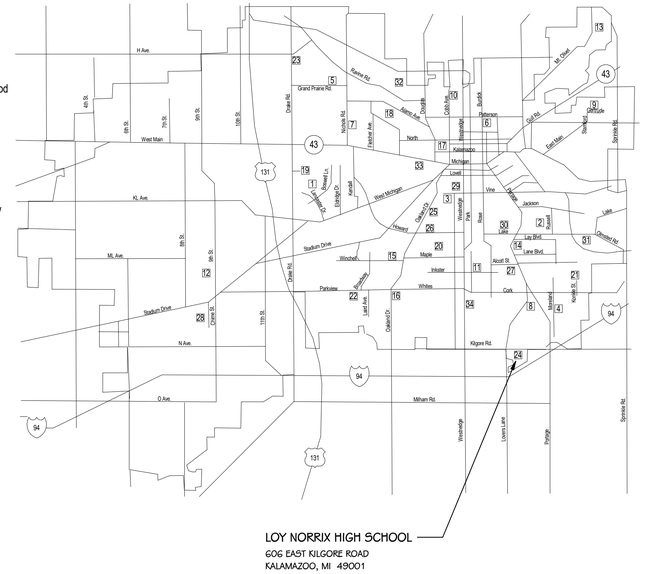
DISTRICT MAP

Elementary Schools
1. Arcadia
2. Edison Environmental Science Academy
3. El Sol
4. Greenwood
5. Indian Prairie
6. Lincoln International Studies School
7. Martin Luther King in Westwood
8. Milwood
9. Northeastern
10. Northglade Montessori Magnet School
11. Parkwood-Upjohn
12. Prairie Ridge
13. Spring Valley Center for Exploration
14. Washington Writers' Academy
15. Winchell
16. Woods Lake : A Magnet Center for the Arts
17. Woodward School for Technology and Research

Middle Schools
18. Hillside
19. Linden Grove
20. Maple Street Magnet School for the Arts
21. Milwood Magnet School: A Center for Math, Science, and Technology
22. Oakwood - Alternative Learning Program

High Schools
23. Kalamazoo Central
24. Loy Norrix
25. Phoenix

Facilities and Programs
26. Administration Building
27. Alcott Street Stockroom
28. Chime
29. Community Education Center
30. Lake Street Barns
31. Lakewood
32. Transportation
33. West Main School
34. South Westnedge School



KALAMAZOO PUBLIC SCHOOLS DISTRICT MAP
SCALE: NONE

TowerPinkster
Architecture · Engineering · Interiors

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TOWERPINKSTER.COM
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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

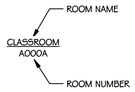
DATE
NOVEMBER 22, 2022

SHEET TITLE
COVER SHEET

SHEET NUMBER
G 001
21-807.00

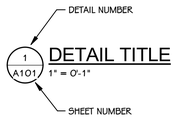
TYPICAL SYMBOLS & REFERENCES

ROOM IDENTIFICATION TAG

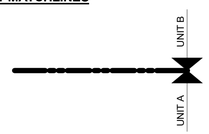


NOTE:
ROOM NAMES AND NUMBERS ON PLANS ARE FOR CONSTRUCTION PURPOSES ONLY. COORDINATE WITH OWNER REGARDING PROPOSED NUMBERS FOR ALL SIGNAGE, SCHEDULE AND PANEL DESIGNATIONS.

DETAIL TITLE

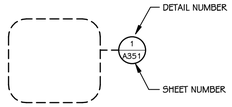


UNIT MATCHLINES

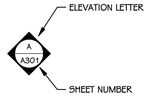


TYPICAL NOTATION SYMBOLS

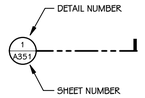
CALLOUT REFERENCE BUBBLE



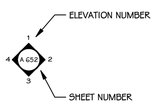
EXTERIOR ELEVATION REFERENCE BUBBLE



DETAIL REFERENCE BUBBLE



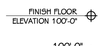
INTERIOR ELEVATION REFERENCE BUBBLE



BUILDING SECTION REFERENCE BUBBLE

ELEVATION AND SECTION REFERENCE TOOLS

ELEVATION TAG - EXISTING



ELEVATION TAG FOR EXTERIOR ELEVATIONS AND BUILDING SECTIONS

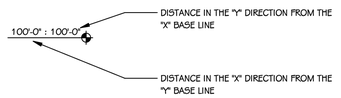
ELEVATION TAG FOR FLOOR PLANS AND REFLECTED CEILING PLANS

ELEVATION TAG - NEW

ELEVATION TAG FOR EXTERIOR ELEVATIONS AND BUILDING SECTIONS

ELEVATION TAG FOR FLOOR PLANS AND REFLECTED CEILING PLANS

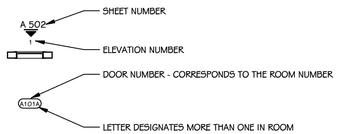
WORKING POINT LAYOUT TAG



DISTANCE IN THE "Y" DIRECTION FROM THE "X" BASE LINE

DISTANCE IN THE "X" DIRECTION FROM THE "Y" BASE LINE

BORROWED LIGHT AND DOOR IDENTIFICATION



SHEET NUMBER

ELEVATION NUMBER

DOOR NUMBER - CORRESPONDS TO THE ROOM NUMBER

LETTER DESIGNATES MORE THAN ONE IN ROOM

SYMBOLS

BARRIER-FREE

B1 REVISION IDENTIFIER (ADDENDUM AND BULLETIN)

00 COLUMN BUBBLE AND LINE

GENERAL NOTES - ARCHITECTURAL

1. THE OWNER RESERVES THE RIGHT TO REMOVE ANY ITEM FROM THE PROJECT PRIOR TO COMMENCEMENT OF CONTRACTED DEMOLITION WORK.
2. ALL EXISTING CONDITIONS SHOULD BE FIELD VERIFIED BEFORE WORK BEGINS.
3. DIMENSIONS GIVEN ARE ACTUAL AND ARE TO THE FACE OF MASONRY UNITS OR TO THE FACE OF STUD FRAMING, UNLESS NOTED OTHERWISE.
4. DETAILS SHOWN ILLUSTRATE DESIGN INTENT, NOT ALL POSSIBLE CONDITIONS. FOR CONDITIONS NOT SHOWN, USE DETAILS CLOSEST TO CONDITION IN QUESTION.
5. EXTEND ALL INTERIOR WALL PARTITIONS FROM FLOOR TO STRUCTURE/DECK ABOVE UNLESS NOTED OR DETAILED OTHERWISE.
6. WITHIN BUILDING INTERIOR PROVIDE BULLNOSE BLOCK IN CMU WALL ASSEMBLIES AT ALL EXPOSED OUTSIDE CORNERS, INCLUDING WINDOW AND DOOR JAMBS, UNLESS NOTED OR DETAILED OTHERWISE. PROVIDE SQUARE CORNERS AT ALL LOCATIONS FINISHED WITH TILE, REFER TO FINISH PLANS (A600 SHEETS) FOR LOCATIONS.
7. TOOTH-IN MASONRY AT NEW OPENINGS IN EXISTING WALLS.
8. TOOTH-IN NEW MASONRY INFILL INTO EXISTING OPENINGS AT ALL BULLNOSE BLOCK LOCATIONS.
9. STUD WALLS SPANNING OVER 12'-0" IN HEIGHT SHALL BE A MINIMUM OF 20 GAGE.
10. STUD WALL SUPPORTING WALL CABINETS SHALL BE A MINIMUM OF 20 GAGE.
11. DOORS ARE TO BE 4" FROM CORNER OF ROOM, UNLESS NOTED OR DIMENSIONED OTHERWISE.
12. FIRESTOP ALL INTERCONNECTIONS BETWEEN VERTICAL AND HORIZONTAL SPACES AND CONCEALED WALL SPACES AT CEILING, FLOOR AND ROOF LEVELS.
13. FIRESEAL ALL PENETRATIONS, SUCH AS, PIPES, DUCTS, CONDUITS, ETC. THROUGH FIRE AND/OR SMOKE RATED ASSEMBLIES.
14. FOR CONTROL JOINT (C.J.) LOCATIONS REFER TO EXTERIOR ELEVATIONS AND/OR FLOOR PLANS.
15. ALL OUTSIDE CORNERS OF COUNTERTOPS ARE TO HAVE A 1" RADIUS, UNLESS NOTED OTHERWISE.
16. VERIFY ALL CASEWORK DIMENSIONS IN FIELD.
17. PAINT ALL ELECTRICAL PANEL COVERS AND ACCESS PANELS TO MATCH ADJACENT FINISHES. USING OIL-BASED PAINT, NOT LATEX WALL PAINT.
18. PROVIDE WOOD BLOCKING IN WALLS THAT REQUIRE WALL MOUNTED EQUIPMENT OR ACCESSORIES. COORDINATE WITH EQUIPMENT OR ACCESSORY MANUFACTURER.
19. PROVIDE ALL ASSOCIATED CURBS FOR ROOF TOP EQUIPMENT AND MECHANICAL ROOF TOP UNITS. LARGE VOIDS BELOW THE AIR HANDLING UNITS SHALL BE FILLED WITH INSULATION AS SPECIFIED FOR NOISE CONTROL.
20. ALL EXISTING ROOF TOP PENETRATIONS BEING REMOVED REQUIRE ROOF PATCHING TO MATCH EXISTING ADJACENT.

GENERAL DEMOLITION NOTES

1. CONTRACTORS ARE REQUIRED TO INSPECT/REVIEW THE EXISTING BUILDING PRIOR TO RELATED DEMOLITION WORK. UNLESS NOTED OTHERWISE, REMOVAL OF ANY WALL, FLOOR OR CEILING INCLUDES ALL GENERAL MECHANICAL AND ELECTRICAL ITEMS WHICH ARE A PART OF, OR ATTACHED TO IT.
2. CONTRACTOR SHALL VERIFY ALL EXISTING JOB SITE CONDITIONS AND DIMENSIONS AND BE RESPONSIBLE FOR THE SAME. ADVISE CONSTRUCTION MANAGER OF ANY AND ALL DISCREPANCIES.
3. PATCH FLOORS, WALLS AND CEILINGS DAMAGED DURING CONSTRUCTION AND DEMOLITION AS REQUIRED. FINISH TO MATCH EXISTING.
4. ACCOMMODATE NEW CONSTRUCTION IF NOT INDICATED.
5. PROTECT ALL EXISTING FINISHES THROUGHOUT PROJECT.
6. REFER TO DEMOLITION ELEVATIONS, SECTIONS AND DETAILS FOR ADDITIONAL INFORMATION.
7. REFER TO STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL PLANS FOR ADDITIONAL DEMOLITION NOTES.
8. SALVAGE ALL UNISTRUT AND PROTECT FOR RE-USE IN NEW CONSTRUCTION, IF REQUIRED.
9. AT LOCATIONS OF REMOVED WALLS, ALL ASSOCIATED ITEMS ATTACHED TO THE WALL ARE TO BE REMOVED. SUCH AS: DOORS, WINDOWS, FRAMES, MARKERBOARDS, TACKBOARDS, TACK STRIPS, ETC.

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A 103 OVERALL ROOF PLAN
~~A 200K LOWER LEVEL REFLECTED CEILING PLAN - UNIT K~~
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~~MD 101C LEVEL 1 MECHANICAL DEMOLITION PLAN - UNIT C~~
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M 100B LOWER LEVEL SHEET METAL PLAN - UNIT B
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~~M 100K LOWER LEVEL SHEET METAL PLAN - UNIT K~~
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M 150 ROOF MECHANICAL PLAN - OVERALL
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~~M 150M ROOF MECHANICAL PLAN - UNIT M~~
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M 200D2 LOWER LEVEL HVAC PIPING PLAN - UNIT D2
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~~M 200M LOWER LEVEL HVAC PIPING PLAN - UNIT M~~
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M 201A LEVEL 1 HVAC PIPING PLAN - UNIT A
M 201B LEVEL 1 HVAC PIPING PLAN - UNIT B
~~M 201C LEVEL 1 HVAC PIPING PLAN - UNIT C~~
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~~ED 100D2 LOWER LEVEL ELECTRICAL DEMOLITION PLAN - UNIT D2~~
~~ED 100K LOWER LEVEL ELECTRICAL DEMOLITION PLAN - UNIT K~~
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ED 101A LEVEL 1 ELECTRICAL DEMOLITION PLAN - UNIT A
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~~ED 101C LEVEL 1 ELECTRICAL DEMOLITION PLAN - UNIT C~~
~~ED 101D2 LEVEL 1 ELECTRICAL DEMOLITION PLAN - UNIT D2~~
~~ED 101K LEVEL 1 ELECTRICAL DEMOLITION PLAN - UNIT K~~
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~~E 100C LOWER LEVEL POWER PLAN - UNIT C~~
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~~E 100K LOWER LEVEL POWER PLAN - UNIT K~~
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E 101A LEVEL 1 POWER PLAN - UNIT A
E 101B LEVEL 1 POWER PLAN - UNIT B
~~E 101C LEVEL 1 POWER PLAN - UNIT C~~
~~E 101D2 LEVEL 1 POWER PLAN - UNIT D2~~
~~E 101K LEVEL 1 POWER PLAN - UNIT K~~
~~E 101M LEVEL 1 POWER PLAN - UNIT M~~
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~~E 150C ELECTRICAL ROOF PLAN - UNIT C~~
~~E 150K ELECTRICAL ROOF PLAN - UNIT K~~
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~~E 200M LOWER LEVEL LIGHTING PLAN - UNIT M~~
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TD 101B LEVEL 1 TECHNOLOGY DEMOLITION PLAN - UNIT B
~~TD 101K LEVEL 1 TECHNOLOGY DEMOLITION PLAN - UNIT K~~
~~TD 101M LEVEL 1 TECHNOLOGY DEMOLITION PLAN - UNIT M~~

TECHNOLOGY
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~~T 100M LOWER LEVEL TECHNOLOGY PALN - UNIT M~~
T 101A LEVEL 1 TECHNOLOGY PLAN - UNIT A
T 101B LEVEL 1 TECHNOLOGY PLAN - UNIT B
~~T 101K LEVEL 1 TECHNOLOGY PLAN - UNIT K~~
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T 401 TECHNOLOGY DETAILS

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Addendum No. 2 December 16, 2022

ISSUED FOR	DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

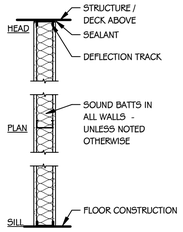
OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
DRAWING INDEX AND TYPICAL SYMBOLS

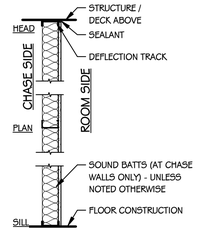
DATE
NOVEMBER 22, 2022

SHEET NUMBER
G 002
21-807.00



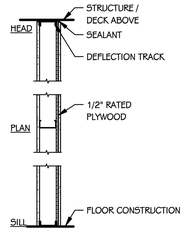
1X METAL STUDS @ 16" O.C. WITH 5/8" GYPSUM BOARD BOTH SIDES; (1 HOUR FIRE) U.L. ASSEMBLY U465 WHERE NOTED ON PLANS

METAL STUD WALL



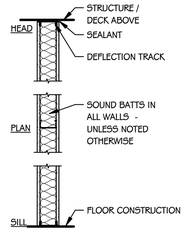
2X METAL STUDS @ 16" O.C. WITH 5/8" GYPSUM BOARD ON ROOM SIDE - BRACE WALL @ 4'-0" O.C. MAXIMUM.

METAL STUD CHASE WALL OR FURRING



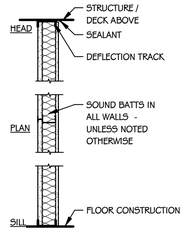
3X METAL STUDS @ 16" O.C. WITH 1/2" RATED PLYWOOD ONE SIDE AND 5/8" GYPSUM BOARD ON BOTH SIDES.

METAL STUD WALL WITH PLYWOOD BACKING



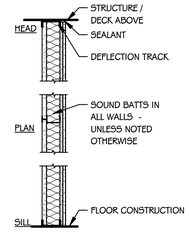
4X METAL STUDS @ 16" O.C. WITH 5/8" TYPE "X" GYPSUM BOARD BOTH SIDES TO DECK

STRUCTURAL METAL STUD WALL



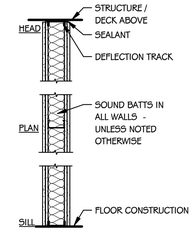
5X METAL CH STUDS @ 16" O.C. WITH 5/8" TYPE "X" GYPSUM BOARD ON ROOM SIDE AND 1" TYPE "X" GYPSUM BOARD PANEL ON CHASE SIDE

METAL STUD CHASE WALL (1 HOUR FIRE) U.L. ASSEMBLY U415



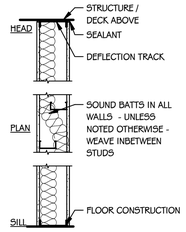
6X METAL CH STUDS @ 16" O.C. WITH (2) LAYERS 5/8" TYPE "X" GYPSUM BOARD ON ROOM SIDE AND 1" TYPE "X" GYPSUM BOARD PANEL ON CHASE SIDE

METAL STUD CHASE WALL (2 HOUR FIRE) U.L. ASSEMBLY U438



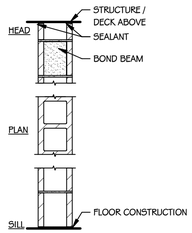
7X METAL STUDS @ 16" O.C. WITH (2) LAYERS 5/8" TYPE "X" GYPSUM BOARD BOTH SIDES

METAL STUD WALL (2 HOUR FIRE) U.L. ASSEMBLY U425



8 6" TOP AND BOTTOM TRACK WITH 3 5/8" METAL STUD FRAMING @ 16" O.C. (OFFSET) WITH 5/8" GYPSUM BOARD BOTH SIDES

METAL STUD SOUND WALL



9 4" CONCRETE MASONRY UNITS

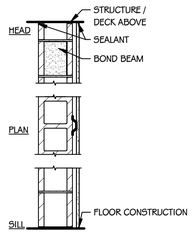
10 6" CONCRETE MASONRY UNITS

11 8" CONCRETE MASONRY UNITS

12 10" CONCRETE MASONRY UNITS

13 12" CONCRETE MASONRY UNITS

CMU WALL
U.L. ASSEMBLY - U905 (1 HOUR AND 2 HOUR)



9X 4" CONCRETE MASONRY UNITS WITH METAL FURRING AND 5/8" GYPSUM BOARD

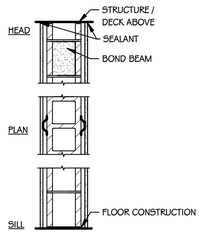
10X 6" CONCRETE MASONRY UNITS METAL FURRING AND 5/8" GYPSUM BOARD

11X 8" CONCRETE MASONRY UNITS WITH METAL FURRING AND 5/8" GYPSUM BOARD

12X 10" CONCRETE MASONRY UNITS WITH METAL FURRING AND 5/8" GYPSUM BOARD

13X 12" CONCRETE MASONRY UNITS WITH METAL FURRING AND 5/8" GYPSUM BOARD

CMU WALL WITH FURRING



99X 4" CONCRETE MASONRY UNITS WITH METAL FURRING AND 5/8" GYPSUM BOARD - BOTH SIDES

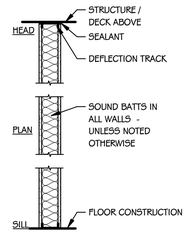
100X 6" CONCRETE MASONRY UNITS WITH METAL FURRING AND 5/8" GYPSUM BOARD - BOTH SIDES

110X 8" CONCRETE MASONRY UNITS WITH METAL FURRING AND 5/8" GYPSUM BOARD - BOTH SIDES

120X 10" CONCRETE MASONRY UNITS WITH METAL FURRING AND 5/8" GYPSUM BOARD - BOTH SIDES

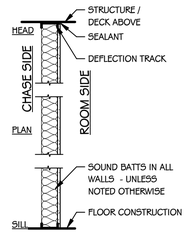
130X 12" CONCRETE MASONRY UNITS WITH METAL FURRING AND 5/8" GYPSUM BOARD - BOTH SIDES

CMU WALL WITH FURRING BOTH SIDES



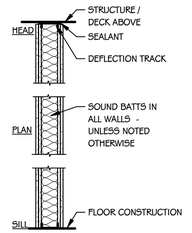
14X WOOD STUDS @ 16" O.C. WITH 5/8" GYPSUM BOARD BOTH SIDES; (1 HOUR FIRE) U.L. ASSEMBLY U465 WHERE NOTED ON PLANS

WOOD STUD WALL



15X WOOD STUDS @ 16" O.C. WITH 5/8" GYPSUM BOARD ON ROOM SIDE - BRACE WALL @ 4'-0" O.C. MAXIMUM.

WOOD STUD CHASE WALL



16X WOOD STUDS @ 16" O.C. WITH (2) LAYERS 5/8" TYPE "X" GYPSUM BOARD BOTH SIDES

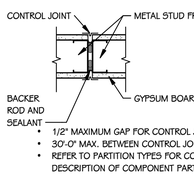
WOOD STUD WALL (2 HOUR FIRE) U.L. ASSEMBLY U425

INTERSECTION OF NON-RATED AT 1 HOUR RATED PARTITION

INTERSECTION OF NON-RATED AT 2 HOUR RATED PARTITION - U.L. ASSEMBLY U425

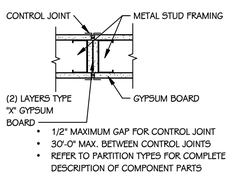
INTERSECTION OF NON-RATED AT 2 HOUR RATED PARTITION - U.L. ASSEMBLY U438

INTERSECTION OF CONCRETE/MASONRY AT 1 HOUR RATED PARTITION



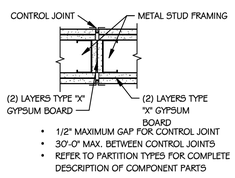
- 1/2" MAXIMUM GAP FOR CONTROL JOINT
- 30'-0" MAX. BETWEEN CONTROL JOINTS
- REFER TO PARTITION TYPES FOR COMPLETE DESCRIPTION OF COMPONENT PARTS

GYPSUM BOARD CONTROL JOINT NON-RATED PARTITION



- 1/2" MAXIMUM GAP FOR CONTROL JOINT
- 30'-0" MAX. BETWEEN CONTROL JOINTS
- REFER TO PARTITION TYPES FOR COMPLETE DESCRIPTION OF COMPONENT PARTS

GYPSUM BOARD CONTROL JOINT 1 HOUR RATED PARTITION

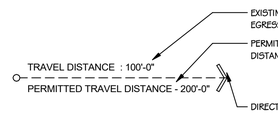


- 1/2" MAXIMUM GAP FOR CONTROL JOINT
- 30'-0" MAX. BETWEEN CONTROL JOINTS
- REFER TO PARTITION TYPES FOR COMPLETE DESCRIPTION OF COMPONENT PARTS

GYPSUM BOARD CONTROL JOINT 2 HOUR RATED PARTITION

CODE COMPLIANCE KEY

EGRESS SYMBOLS



FIRE SAFETY SYMBOLS

XFE EXISTING FIRE EXTINGUISHER

XFEC EXISTING FIRE EXTINGUISHER CABINET

FE FIRE EXTINGUISHER

FEC FIRE EXTINGUISHER CABINET

FIRE-RATING KEY

DESIGNATION	PARTITION RATING	PRIORITY
	3 HOUR	1
	2 HOUR FIRE/SMOKE	2
	2 HOUR	3
	1 HOUR FIRE/SMOKE	4
	1HOUR	5
	SMOKE RESISTANT	6

1. ALL PENETRATIONS THROUGH A FIRE OR SMOKE RATED PARTITION SHOULD BE SEALED WITH AN APPROVED U.L. RATED PRODUCT.
2. THE TOPS OF ALL FIRE RATED PARTITIONS SHALL BE SEALED TO THE CONTINUOUS STRUCTURE ABOVE WITH A U.L. RATED SYSTEM OR ASSEMBLY.
3. WOOD BLOCKING IN FIRE-RATED PARTITIONS SHALL BE NON-COMBUSTIBLE TREATED WOOD.
4. REFER TO SPECIFICATION U.L. RATING INFORMATION.
5. FIRE-RATED WALLS ENDING INTO AN ACOUSTICAL DECK MUST HAVE THE FLUTES FILLED, REFER TO 'TOP OF WALL DETAIL AT ACOUSTIC DECK' SHOWN ON THIS SHEET

   FOR MASONRY WALLS THE MASON SHALL FILL VOIDS WITH MORTAR OR GROUT. FOR STUD WALLS USE FIRE SAFING AND FIRE CAULK

GENERAL PARTITION NOTES

1. NOT ALL WALL TYPES MAY BE USED ON PROJECT.
2. REFER TO CODE COMPLIANCE PLANS FOR LOCATIONS OF SMOKE AND FIRE-RATED PARTITIONS.
3. ALL PARTITIONS EXTEND TO BOTTOM OF STRUCTURE, UNLESS NOTED OTHERWISE.
4. LINE OF STRUCTURE/DECK AS SHOWN AT THE HEAD CONDITION OF EACH PARTITION TYPE IS DIAGRAMMATIC ONLY AND DOES NOT INDICATE EXACT CONSTRUCTION CONDITIONS. TERMINATE RATED PARTITIONS AT UNDERSIDE OF STRUCTURAL DECK TO MAINTAIN RATING. PROVIDE APPROPRIATE FRAMING AND GYPSUM BOARD TO OFFSET AROUND STRUCTURE OR OTHER OBSTRUCTIONS, SUCH AS PIPING OR DUCTWORK.
5. PARTITIONS MAY TERMINATE AT STRUCTURAL MEMBERS WITH A RATING GREATER THAN OR EQUAL THE PARTITION, PROVIDED THAT RATING IS CONTINUOUS TO STRUCTURAL DECK ABOVE.
6. NON-RATED PARTITIONS THAT EXTEND TO STRUCTURE SHALL TERMINATE AT UNDERSIDE OF STRUCTURAL DECK TO MAINTAIN A CONTINUOUS PLANE OF GYPSUM BOARD AS A NOISE, SMOKE OR OTHER TYPE OF BARRIER.
7. ALL PARTITIONS EXTENDING TO STRUCTURE ABOVE SHALL TERMINATE WITH DEFLECTION TRACK - SEE TYPICAL DETAILS ON THIS SHEET.
8. ALL GYPSUM BOARD PARTITIONS NOT EXTENDING TO THE STRUCTURE MUST BE BRACED.
9. UL DESIGN NUMBERS REFER TO THE FIRE RESISTANCE DIRECTORY; UNDERWRITERS LABORATORY, LATEST EDITION.
10. MISCELLANEOUS NON-RATED CHASES TO BE 5/8" GYPSUM BOARD ON 3 5/8" METAL STUD FRAMING AT 16" O.C., UNLESS NOTED OTHERWISE.
11. MISCELLANEOUS FURRING AROUND COLUMNS TO BE 5/8" GYPSUM BOARD ON 1 1/2" STUDS, UNLESS NOTED OTHERWISE.
12. FIRE-RATED PARTITIONS TO HAVE FIRE-STOPPING SEALANTS AT HEAD, SILL JUNCTURE WITH DISSIMILAR MATERIALS, ETC. AND AROUND ALL PENETRATIONS AND OPENINGS.
13. CONSTRUCT ALL PARTITIONS WITH SOUND ATTENUATION BATTS WITH THE FOLLOWING SOUND BATT THICKNESS: 2 1/2" OR LESS METAL STUD - 1 1/2" THICKNESS, 3 5/8" OR LARGER METAL STUD - 3" THICKNESS. UNLESS NOTED OTHERWISE.

METAL STUD/FURRING, CH STUD AND WOOD STUD KEY 1X

METAL STUD/FURRING

DESIGNATION	SIZE
A	GYPSUM BOARD DIRECT APPLIED TO CMU
B	7/8"
C	1 1/2"
D	1 5/8"
E	2 1/2"
F	3 1/2"
G	3 5/8"
H	4"
J	5 1/2"
K	6"
L	8"
M	10"
N	12"
P	(OPEN)
Q	(OPEN)

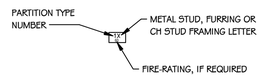
CH STUD

DESIGNATION	SIZE
R	2 1/2"
S	4"
T	6"

WOOD STUD

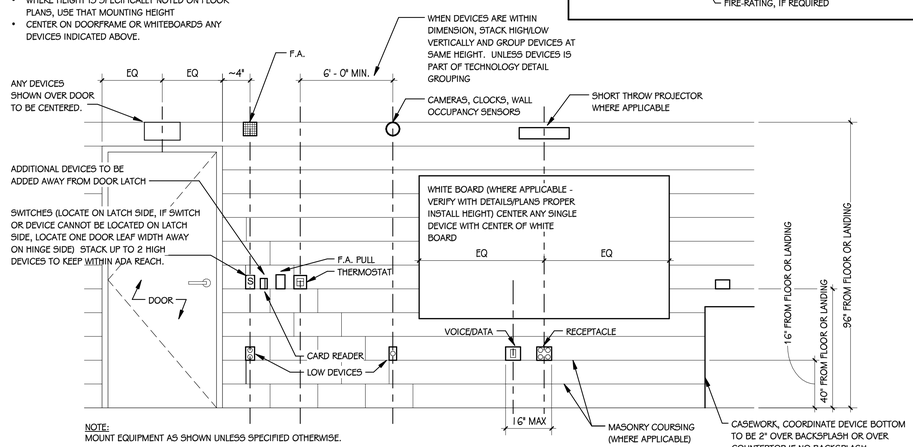
DESIGNATION	SIZE
U	2"x4"
V	2"x6"
W	2"x8"

PARTITION TYPE TAG (REFER TO FLOOR PLANS)



ALIGNMENT NOTES

- ALIGN AND LOCATE CLOSE TOGETHER ANY DEVICES INSTALLED WITHIN 6' HORIZONTALLY.
- CENTER ALL DEVICES WHERE INDICATED ON COLUMN WRAP OR BUMP OUT. STACK AND ALIGN VERTICALLY.
- INSTALL DEVICES AT HEIGHTS INDICATED IN SYMBOL LEGEND UNLESS STACKING PER THIS DETAIL.
- WHERE HEIGHT IS SPECIFICALLY NOTED ON FLOOR PLANS, USE THAT MOUNTING HEIGHT
- CENTER ON DOORFRAME OR WHITEBOARDS ANY DEVICES INDICATED ABOVE.



NOTE:
MOUNT EQUIPMENT AS SHOWN UNLESS SPECIFIED OTHERWISE.

DEVICE ALIGNMENT GUIDELINES

SCALE: NONE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

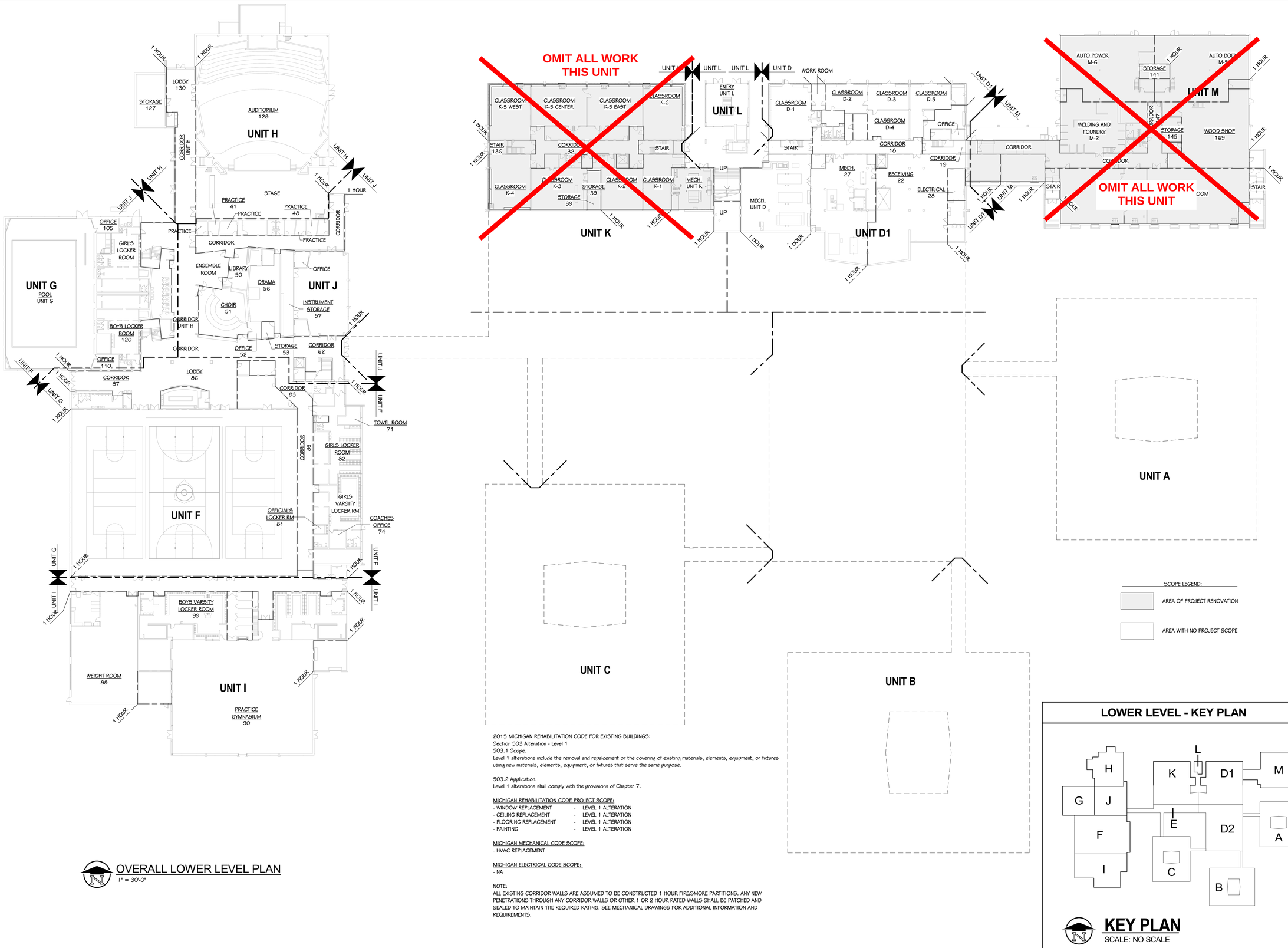
OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
INTERIOR PARTITION TYPES

DATE
NOVEMBER 22, 2022

SHEET NUMBER
G 003
21-807.00



OVERALL LOWER LEVEL PLAN

1" = 30'-0"

2015 MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS:
Section 503 Alteration - Level 1
503.1 Scope.
Level 1 alterations include the removal and replacement or the covering of existing materials, elements, equipment, or fixtures using new materials, elements, equipment, or fixtures that serve the same purpose.

503.2 Application.
Level 1 alterations shall comply with the provisions of Chapter 7.

MICHIGAN REHABILITATION CODE PROJECT SCOPE:
- WINDOW REPLACEMENT - LEVEL 1 ALTERATION
- CEILING REPLACEMENT - LEVEL 1 ALTERATION
- FLOORING REPLACEMENT - LEVEL 1 ALTERATION
- PAINTING - LEVEL 1 ALTERATION

MICHIGAN MECHANICAL CODE SCOPE:
- HVAC REPLACEMENT

MICHIGAN ELECTRICAL CODE SCOPE:
- NA

NOTE:
ALL EXISTING CORRIDOR WALLS ARE ASSUMED TO BE CONSTRUCTED 1 HOUR FIRE/SMOKE PARTITIONS. ANY NEW PENETRATIONS THROUGH ANY CORRIDOR WALLS OR OTHER 1 OR 2 HOUR RATED WALLS SHALL BE PATCHED AND SEALED TO MAINTAIN THE REQUIRED RATING. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

SCOPE LEGEND:
- AREA OF PROJECT RENOVATION
- AREA WITH NO PROJECT SCOPE

LOWER LEVEL - KEY PLAN

KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

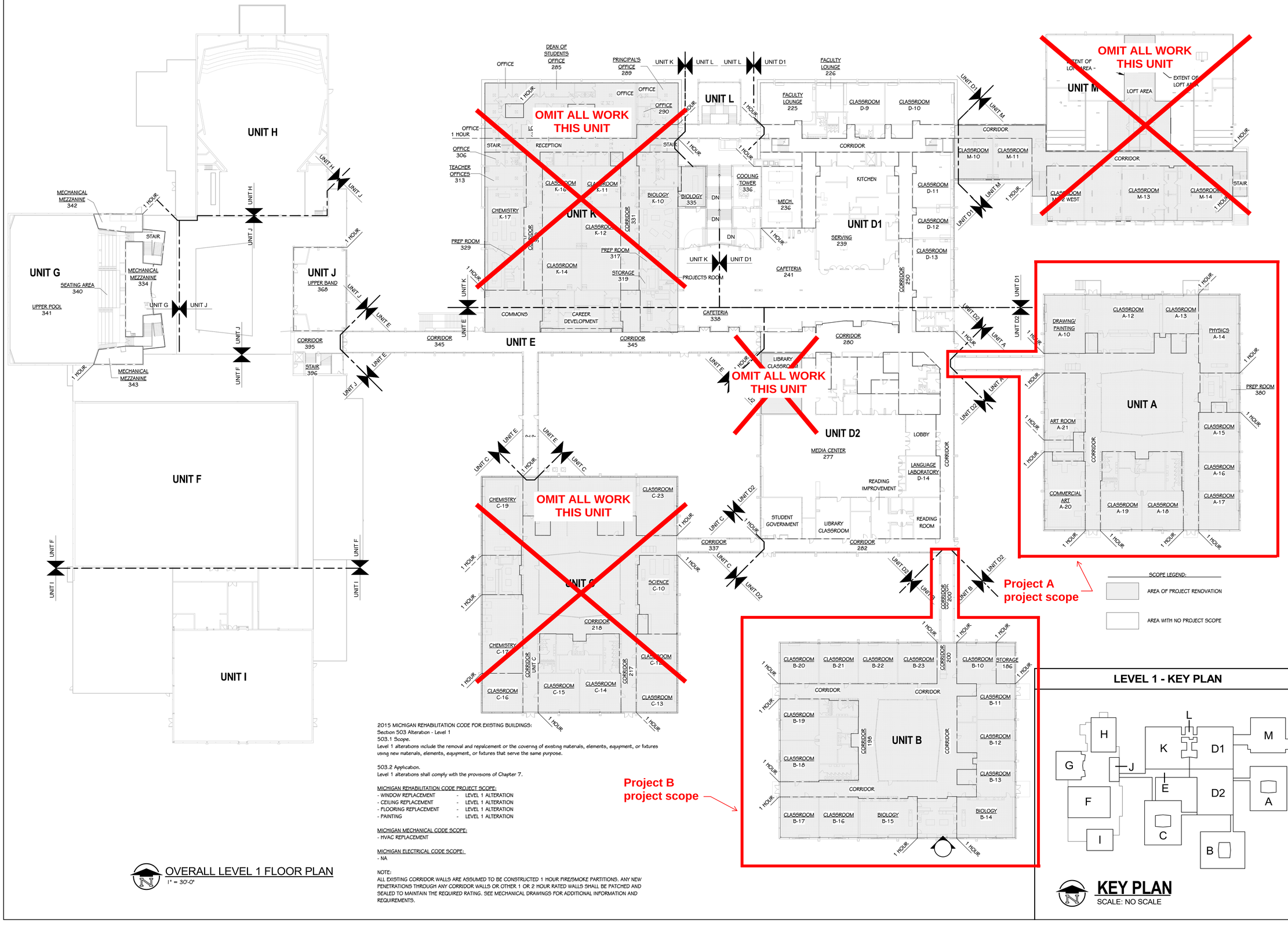
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

DATE
NOVEMBER 22, 2022

SHEET TITLE
OVERALL LOWER LEVEL FLOOR PLAN

SHEET NUMBER
G 100
21-807.00



OVERALL LEVEL 1 FLOOR PLAN

1" = 30'-0"

2015 MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS:
Section 503 Alteration - Level 1
503.1 Scope.
Level 1 alterations include the removal and repalcement or the covering of existing materials, elements, equipment, or fixtures using new materials, elements, equipment, or fixtures that serve the same purpose.

503.2 Application.
Level 1 alterations shall comply with the provisions of Chapter 7.

MICHIGAN REHABILITATION CODE PROJECT SCOPE:

- WINDOW REPLACEMENT	-	LEVEL 1 ALTERATION
- CEILING REPLACEMENT	-	LEVEL 1 ALTERATION
- FLOORING REPLACEMENT	-	LEVEL 1 ALTERATION
- PAINTING	-	LEVEL 1 ALTERATION

MICHIGAN MECHANICAL CODE SCOPE:
- HVAC REPLACEMENT

MICHIGAN ELECTRICAL CODE SCOPE:
- NA

NOTE:
ALL EXISTING CORRIDOR WALLS ARE ASSUMED TO BE CONSTRUCTED 1 HOUR FIRE/SMOKE PARTITIONS. ANY NEW PENETRATIONS THROUGH ANY CORRIDOR WALLS OR OTHER 1 OR 2 HOUR RATED WALLS SHALL BE PATCHED AND SEALED TO MAINTAIN THE REQUIRED RATING. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

LEVEL 1 - KEY PLAN

KEY PLAN

SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
OVERALL FIRST FLOOR PLAN

DATE
NOVEMBER 22, 2022

SHEET NUMBER
G101
21-807.00

OVERALL SITE AERIAL PLAN

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PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
OVERALL SITE AERIAL PLAN

DATE
NOVEMBER 22, 2022

SHEET NUMBER
G 102
21-807.00

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. THIS PROJECT REQUIRES A SIGNIFICANT AMOUNT OF DRILLING INTO THE EXISTING REINFORCED CONCRETE STRUCTURE. THE CONTRACTOR WILL NOT RECEIVE ADDITIONAL PAYMENT FOR DIFFICULTIES ENCOUNTERED IN DRILLING DUE TO HARDNESS OF MATERIALS, HITTING OF EXISTING REINFORCING, ETC.. ALL COSTS ASSOCIATED WITH REDRILLING OF HOLES DUE TO HITTING EXISTING REINFORCING STEEL SHALL BE BORNE BY THE CONTRACTOR. THIS INCLUDES FILLING UNNECESSARY AND UNUSED HOLES WITH EPOXY GROUT. DO NOT CUT REINFORCING STEEL DURING CONCRETE DRILLING OR CORING OPERATIONS. LOCATE REINFORCING WITH A PACHOMETER OR OTHER NON-DESTRUCTIVE TESTING DEVICE PRIOR TO DRILLING OR CORING OPERATIONS.

4. 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.

5. EXISTING SURFACE PREPARATION:
   INTENTIONALLY ROUGHEN EXISTING CONCRETE SURFACES WHERE NEW CONCRETE IS BEING PLACED AGAINST THE EXISTING CONCRETE AND CONNECTED BY DRILLING AND EPOXY GROUTING. THE ENTIRE COMMON SURFACE WHERE THE EXISTING CONCRETE ABUTS THE NEW SHALL BE COATED WITH AN EPOXY BONDING AGENT. FOLLOW ALL ADDITIONAL REQUIREMENTS OF SURFACE PREPARATION AS REQUIRED BY THE BONDING AGENT MANUFACTURER.

STRUCTURAL DESIGN CRITERIA

1. GOVERNING CODE — MICHIGAN BUILDING CODE (MBC), 2015 EDITION
2. BUILDING RISK CATEGORY — III
3. MATERIAL STRENGTHS

   STRUCTURAL STEEL:

   ASTM A992 (F_y = 50 KSI) - ROLLED STEEL SHAPES UNLESS NOTED ON THE DRAWINGS.
   ASTM A36 (F_y = 36 KSI) - ROLLED STEEL PLATES, CHANNELS, ANGLES, BARS, AND RODS AS NOTED ON THE DRAWINGS.
   ASTM A500, GRADE C - RECTANGULAR AND ROUND HSS

   REINFORCING STEEL:

   ASTM A615, GRADE 60

   CONCRETE:

   4000 PSI FOR ALL CONCRETE UNLESS SPECIFICALLY NOTED OTHERWISE.

   MASONRY:

   2000 PSI FOR CONCRETE MASONRY

4. DEAD LOADS

TOTAL ROOF DEAD LOAD	25 PSF

5. LIVE LOADS

ROOF	20 PSF
CLASSROOMS	40 PSF
MECHANICAL ROOMS / MEZZANINES	150 PSF

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

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

GROUND SNOW LOAD (P_g)	30 PSF
FLAT ROOF SNOW LOAD (P_f)	23 PSF + DRIFT
SNOW EXPOSURE FACTOR (C_e)	1.0
SNOW THERMAL FACTOR (C_t)	1.0
SNOW LOAD IMPORTANCE FACTOR	1.1

7. WIND LOAD DESIGN PARAMETERS ARE AS FOLLOWS:

BASIC WIND SPEED (V), (3 SECOND GUST)	120 MPH
WIND EXPOSURE CATEGORY	B
INTERNAL PRESSURE COEFFICIENT	±0.18

8. 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	+10.5 / -25.9	+10.5 / -43.4	+10.5 / -65.4
25	+9.7 / -25.0	+9.7 / -37.3	+9.7 / -50.5
50	+9.0 / -24.3	+9.0 / -32.7	+9.0 / -39.3
100	+8.3 / -23.7	+8.3 / -28.1	+8.3 / -28.1
500	+8.3 / -23.7	+8.3 / -28.1	+8.3 / -28.1

WALL PRESSURES (PSF)

AREA	INTERIOR ZONE	EDGE ZONE
10	+23.7 / -25.7	+23.7 / -31.6
25	+22.3 / -24.3	+22.3 / -28.8
50	+21.3 / -23.2	+21.3 / -26.7
100	+20.2 / -22.2	+20.2 / -24.6
500	+17.8 / -19.7	+17.8 / -19.7

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)	8.8 %
(S_1)	5.0 %
DESIGN SPECTRAL RESPONSE ACCELERATION	
(S_{DS})	9.4 %
(S_{D1})	8.0 %
SEISMIC DESIGN CATEGORY	B
SEISMIC IMPORTANCE FACTOR (I_e)	1.25
SEISMIC LATERAL FORCE RESISTING SYSTEM - ORDINARY REINFORCED MASONRY SHEAR WALLS	
RESPONSE MODIFICATION FACTOR (R)	2
DEFLECTION AMPLIFICATION FACTOR (C_d)	1.75
SEISMIC DESIGN METHOD	EQUIVALENT LATERAL FORCE PROCEDURE
SEISMIC RESPONSE COEFFICIENT (C_s)	0.05

CAST-IN-PLACE CONCRETE

1. CAST-IN-PLACE CONCRETE WORK SHALL CONFORM TO THE PROJECT MANUAL AND AMERICAN CONCRETE INSTITUTE CODES AND STANDARDS, INCLUDING, BUT NOT LIMITED TO, ACI 301, ACI 315, AND ACI 318.

2. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185 DELIVERED IN FLAT SHEETS.

3. THE CONTRACTOR SHALL REVIEW ALL DRAWINGS FOR SIZE AND LOCATION OF ALL EMBEDDED ITEMS, SLEEVES, SLAB DEPRESSIONS, OPENINGS, ETC. REQUIRED BY OTHER TRADES. RECONCILE THEIR EXACT SIZES AND LOCATIONS BEFORE PROCEEDING WITH THE WORK. ALL ITEMS SHALL BE FURNISHED AND INSTALLED PRIOR TO PLACEMENT OF CONCRETE. SECURE THE APPROVAL OF THE STRUCTURAL ENGINEER PRIOR TO PLACING OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS. DO NOT CORE DRILL THROUGH BEAMS, JOISTS, GIRDERS, OR WALLS. NO CONDUIT SHALL BE PLACED IN CONCRETE SLABS OR BEAMS UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS.

4. BACKFILL AGAINST WALLS SHALL NOT BE PLACED UNTIL THE FLOOR CONSTRUCTION AT THE FIRST FLOOR HAS BEEN COMPLETED TO BRACE THE WALL. AT THE CONTRACTOR'S OPTION, WALLS MAY BE BRACED AND BACKFILL INSTALLED. ANY SUCH BRACING SHALL BE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL REMAIN IN PLACE UNTIL THE FIRST FLOOR IS COMPLETED AND CONTINUOUSLY CONNECTED TO THE WALL.

5. WHERE BAR LENGTHS ARE GIVEN ON THE DRAWINGS, THE LENGTH OF ANY HOOK, IF REQUIRED, IS NOT INCLUDED. USE STANDARD 90° BAR HOOK UNO.

6. PROVIDE HORIZONTAL CONTROL/CONSTRUCTION JOINTS IN SLABS AND VERTICAL CONTROL/CONSTRUCTION IN WALLS AS SHOWN ON THE DRAWINGS. ALL BEAMS, SPANDRELS, AND SLABS SHALL BE CAST MONOLITHICALLY, EXCEPT FOR REQUIRED CONTROL/CONSTRUCTION JOINTS SHOWN ON THE DRAWINGS. CONTRACTOR SHALL SUBMIT ALTERNATE AND ADDITIONAL CONSTRUCTION JOINT LOCATIONS AND DETAILS TO THE A/E FOR APPROVAL PRIOR TO CONSTRUCTION. AT LEAST 48 HOURS SHALL ELAPSE BETWEEN CASTING OF ADJOINING UNITS. REINFORCEMENT SHALL BE CONTINOUS ACROSS CONSTRUCTION JOINTS UNLESS DETAILED OTHERWISE ON THE DRAWINGS. SUBMIT ALL CONSTRUCTION JOINT LOCATIONS WITH THE REINFORCING SHOP DRAWINGS.

7. WHERE CONSTRUCTION JOINTS ARE REQUIRED BUT ARE NOT INDICIATED ON THE DRAWINGS, THEY SHALL BE LOCATED AT THE MID-SPAN OF BEAMS, SLABS AND WALLS, AND SHALL BE SUBJECT TO REVIEW BY THE AE. UNO OR SHOWING ON THE DRAWINGS, PROVIDE A CONTINUOUS SHEAR KEY IN SLABS AND WALLS, AND A MINIMUM OF (2) CONTINOUS HORIZONTAL KEYS IN BEAMS AND EACH JOIST. THE MINIMUM KEY SIZE SHALL BE 1-1/2" DEEP X 1/3 THE DEPTH OR WIDTH OF THE MEMBER. AT COMPOSITE CONCRETE SLABS ON STEEL DECK, SUPPORTED BY STEEL BEAMS AND GIRDERS, CONSTRUCTION JOINTS PARALLEL TO BEAMS SHALL BE PLACED MID-WAY BETWEEN BEAMS NEAREST TO THE COLUMN CENTERLINE AND CONSTRUCTION JOINTS PARALLEL TO GIRDERS SHALL BE PLACED 4 TO 6 FEET FROM THE GIRDER CENTERLINE. AT NON-COMPOSITE CONCRETE SLABS ON STEEL DECK, SUPPORTED BY STEEL BEAMS AND GIRDERS, CONSTRUCTION JOINTS SHALL BE PLACED AT MID-SPAN OF DECK AND MID-WAY BETWEEN GIRDERS. REFERENCE ACI 302 FOR GUIDELINES AND ADDITIONAL INFORMATION.

8. THE CONTRACTOR SHALL PROVIDE 3/4" CHAMFERS ON ALL EXPOSED CORNERS OF COLUMNS, BEAMS, AND WALLS UNO INDICATED ON THE ARCHITECTURAL DRAWINGS. MINIMUM CLEARANCES FOR REINFORCING STEEL SHALL CONFORM WITH THE TYPICAL REINFORCING BAR CLEARANCE TABLE.

9. THE HARDENED CONCRETE OF HORIZONTAL CONSTRUCTION JOINTS SHALL BE DAMPENED AND THEN THOROUGHLY COVERED WITH A COAT OF CEMENT GROUT OF SIMILAR PROPORTIONS TO THE MORTAR IN THE CONCRETE. THE FRESH CONCRETE SHALL BE PLACED BEFORE THE GROUT HAS ATTAINED ITS INITIAL SET.

10. THE HARDENED CONCRETE OF CONSTRUCTION JOINTS SHALL BE THOROUGHLY COATED WITH A BONDING AGENT (SIKA ARMATEC 110 OR EQUAL).

11. WELDING OF REINFORCING STEEL IS NOT PERMITTED.

12. COMPLY WITH THE ARCHITECTURAL DRAWINGS FOR LOCATION AND EXTENT OF SPECIAL FINISHES OR TREATMENTS TO EXPOSED CONCRETE.

13. PROVIDE 6XG-W1.4XW1.4 WELDED WIRE FABRIC IN ALL TOPPING SLABS, UNO.

14. LAP WELDED WIRE FABRIC 1 SPACE (2 CROSS WIRES) + 2" AT ALL EDGES AND ENDS OF SHEETS.

15. REINFORCING BAR LAP SPLICES AND ANCHORAGE LENGTHS SHALL CONFORM WITH "MINIMUM LAP SPLICE AND ANCHORAGE DIMENSION TABLE"

STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL CONFORM TO THE AISC "SPECIFICATION FOR DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".

2. THE STRUCTURE WAS DESIGNED USING THE LRFD APPROACH PER THE AISC "STEEL CONSTRUCTION MANUAL"

3. WELDED CONNECTIONS SHALL CONFORM TO THE AWS D1.1.

4. ALL STRUCTURAL STEEL, BOLTS, ETC., SHALL BE DOMESTICALLY PRODUCED.

5. BOLTS AND BOLTED CONNECTIONS SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS" AS APPROVED BY THE COUNCIL ON RIVETED AND BOLTED JOINTS, UNO. USE BEARING-TYPE BOLTS WITH THREADS INCLUDED IN THE SHEAR PLANE. ANCHOR BOLTS SHALL CONFORM TO ASTM F-1554, GRADE 36, OR AS SPECIFIED ON THE DRAWINGS.

6. WELDING ELECTRODES SHALL BE E70XX (LOW HYDROGEN) OR BETTER, FOR WELDING SYMBOLS WITH NO LENGTH DIMENSION GIVEN, THE WELDING SHALL BE CONTINUOUS BETWEEN ABRUPT CHANGES IN DIRECTION. WELDS NOT OTHERWISE NOTED SHALL BE 1/4" IN SIZE.

7. IN GENERAL, IT IS THE INTENT OF THESE PLANS AND SPECIFICATIONS THAT ALL SHOP CONNECTIONS BE WELDED AND ALL FIELD CONNECTIONS BE BOLTED EXCEPT WHERE NOTED OTHERWISE.

8. ALL BOLTS SHALL BE TIGHTENED TO A "SNUG-TIGHT" CONDITION, UNO. BOLTS IN MOMENT CONNECTIONS SHALL BE DESIGNED "SLIP-CRITICAL" WITH A CLASS "A" FAYING SURFACE.

9. UNLESS NOTED OTHERWISE, TYPICAL BEAM SHEAR CONNECTIONS SHALL BE DETAILED WITH STANDARD DOUBLE ANGLE OR SHEAR PLATE CONNECTIONS, USING A325 BOLTS.

   NON-COMPOSITE BEAM CONNECTIONS SHALL BE DESIGNED TO DEVELOP 55% OF THE TOTAL LOAD CAPACITY DERIVED FROM THE AISC STEEL CONSTRUCTION MANUAL MAXIMUM UNIFORM LOAD TABLES.

   COMPOSITE BEAMS SUPPORT A REACTION 'RC'=MULTIPLIER x 'R' (AS DEFINED ABOVE):
   RC = 1.50 x R (FOR BEAM DEPTH GREATER THAN 21")
   RC = 2.00 x R (FOR BEAM DEPTH GREATER THAN 14" BUT LESS THAN OR EQUAL TO 21")
   RC = 2.25 x R (FOR BEAM DEPTH GREATER THAN 8" BUT LESS THAN OR EQUAL TO 14")

10. PROVIDE A NON-METALLIC, NON-SHRINK GROUT UNDER ALL COLUMN BASE PLATES AND BEAM BEARINGS.

11. ALL STEEL EXPOSED TO WEATHER, EXPOSED TO EARTH, EXPOSED TO VIEW OUTSIDE THE BUILDING ENVELOPE, OR DENOTED ON THE DRAWINGS TO BE GALVANIZED, SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION. GALVANIZING SHALL BE REMOVED PER AWS D-19.0, "WELDING ZINC-COATED STEEL", PRIOR TO FIELD WELDING. WELDS SHALL BE TOUCHED-UP WITH TWO COATS OF ZINC-RICH PAINT BRUSH APPLIED USING ZRC GALVANIZING COMPOUND OR EQUAL. PROVIDE VENT/DRAINAGE HOLES IN HSS MEMBERS (MINIMUM 3/4 DIAMETER, BOTTOM SIDE OF HORIZONTAL MEMBERS, WITHIN 2" OF BASE FOR VERTICAL MEMBERS) PRIOR TO GALVANIZING.

12. ALL STEEL WITHIN UNCONDITIONED AREAS OUTSIDE THE BUILDING ENVELOPE (E.G. EXTERIOR SOFFITS, CANOPIES, ETC) BUT NOT EXPOSED TO VIEW SHALL BE PRIMED AND PAINTED UNLESS NOTED OTHERWISE.

13. THE FABRICATOR SHALL SUPPLY LOOSE LINTEL ANGLES OVER ALL MASONRY OPENINGS AND RECESSES UNLESS OTHERWISE NOTED. REFER TO LINTEL SCHEDULE FOR SIZING LINTELS NOT SCHEDULED ON THE DRAWINGS.

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

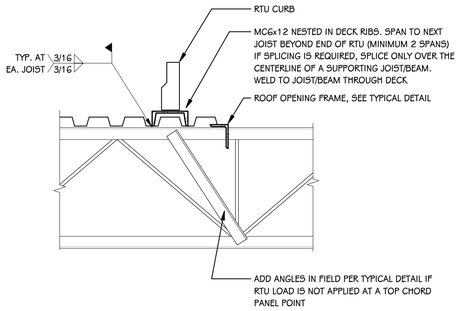
OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

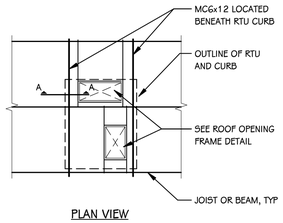
SHEET TITLE
GENERAL NOTES

DATE
NOVEMBER 22, 2022

SHEET NUMBER
S 001
21-807.00



SECTION A-A

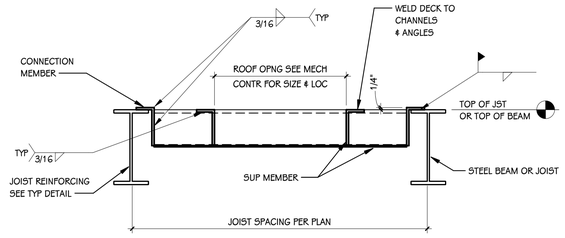


PLAN VIEW

TYPICAL RTU SUPPORT
SCALE: NONE

NOTES:

1. SEE 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

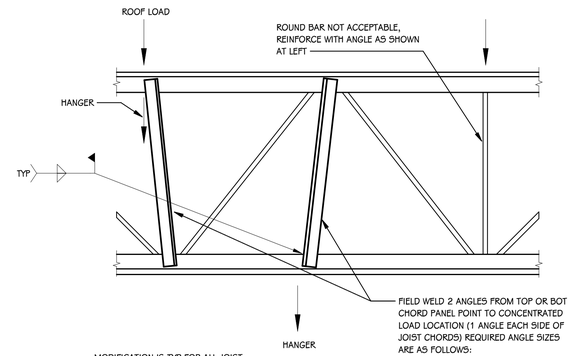


NOTE: ALL WELDING TO JOIST SHALL BE DONE WITH CARE SO AS NOT TO IMPAIR JOIST.

JOIST SPACING	SUPPORTING MEMBER	CONNECTING MEMBER
MAX 6'-0"	L3x3x1/4	L3x3x1/4x0'-6"
MAX 6'-0"	L5x3x1/4 LLV	L5x3x1/4 LLV x 6"
GREATER THAN 6'-0"	L5x3x1/4 LLV	L5x3x1/4 LLV x 6"
GREATER THAN 6'-0"	C6x8.2	BENT PLATE 8x3x1/4 (LLV) x 8"

1. COORDINATE LOCATION & SIZE OF OPENINGS WITH MECHANICAL CONTRACTOR.
2. ALL FRAMING LOCATED BELOW ROOF FRAMING IS TO BE PRIME PAINTED PER DIVISION 05 AND FINISH COAT PER DIVISION 09.

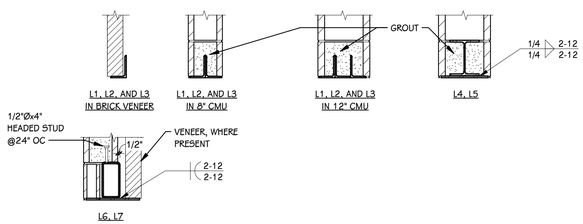
TYPICAL ROOF OPENING FRAME DETAIL
SCALE: NONE



MODIFICATION IS TYP FOR ALL JOIST SUPPORTING LOAD FROM TOP OR BOTTOM CHORD BETWEEN PANEL POINT. VERIFY LOC & # OF LOADS WITH ARCH, MECH, PLMB, ELEC DRAWINGS. ANGLES NOT REQ'D FOR CONCENTRATED LOADS LESS THAN 100 LBS.

JOIST DEPTH	ANGLE SIZE
8" TO 24"	L1 1/2x1 1/2x3/16
26" TO 48"	L2x2x3/16
52" TO 72"	L3x3x1/4

TYPICAL JOIST MODIFICATION AT CONCENTRATED LOADS
SCALE: NONE

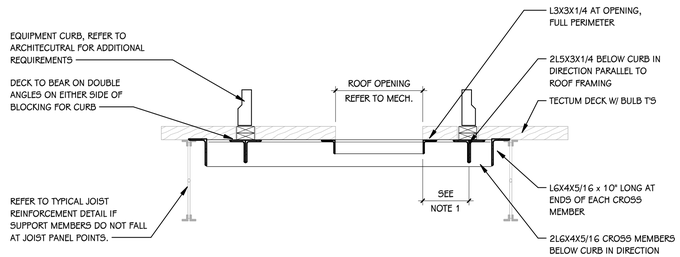


LINTEL TYPE	LINTEL SIZE	NOTES
L1	L3 1/2x3 1/2x5/16 PER 4" NOMINAL MASONRY THICKNESS	
L2	L5x3 1/2x5/16 (LLV) PER 4" NOMINAL MASONRY THICKNESS	
L3	L6x3 1/2x5/16 (LLV) PER 4" NOMINAL MASONRY THICKNESS	
L4	W8x24 WITH 5/16" BOTTOM PLATE	PROVIDE BEARING PLATE EACH END PER TYPICAL BEAM BEARING DETAIL
L5	W8x15 WITH 5/16" BOTTOM PLATE	PROVIDE BEARING PLATE EACH END PER TYPICAL BEAM BEARING DETAIL
L6	HSS8X4X5/16 WITH 5/16" BOTTOM PLATE	PROVIDE BEARING PLATE EACH END PER TYPICAL BEAM BEARING DETAIL
L7	HSS8X8X5/16 WITH 3/8" BOTTOM PLATE	PROVIDE BEARING PLATE EACH END PER TYPICAL BEAM BEARING DETAIL

NOTES:

1. THIS DETAIL AND SCHEDULE APPLIES TO OPENINGS WITHIN EXISTING MASONRY WALL CONSTRUCTION AND OPENINGS WITHIN BRICK VENEER, UNLESS NOTED OR DETAILED OTHERWISE.
2. ALL OPENINGS WIDER THAN 8" IN MASONRY WALLS REQUIRE LINTELS. NOT ALL LINTELS ARE SHOWN ON PLANS - REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR LOCATIONS AND SIZES OF OPENINGS.
3. 8" LINTEL BEARING REQUIRED, EACH END
4. ALL LINTELS WITHIN EXTERIOR WALLS SHALL BE GALVANIZED.
5. GROUT CMU SOLID BELOW LINTEL BEARING DOWN TO FOUNDATION.
6. FOR LINTEL TYPES L6 & L7, WHERE NO SECTION IS PROVIDED ON STRUCTURAL, COORDINATE WITH ARCHITECTURAL DETAILS AND WALL SECTIONS TO DETERMINE REQUIRED PLATE WIDTH AND POSITION OF LINTEL.
7. WHERE NO LINTEL DESIGNATION IS NOTED ON FRAMING PLANS, PROVIDE LINTEL AS FOLLOWS:
   - L1 FOR OPENINGS LESS THAN OR EQUAL TO 4' - 0" WIDE
   - L2 FOR OPENINGS LESS THAN OR EQUAL TO 5' - 8" WIDE
   - L3 FOR OPENINGS LESS THAN OR EQUAL TO 6' - 8" WIDE

STEEL LINTEL SCHEDULE
SCALE: NONE



NOTES:

1. IF DISTANCE BETWEEN EDGE OF OPENING AND RTU SUPPORT MEMBER IS LESS THAN 6", L3X3 ANGLE MAY BE ELIMINATED AND DECK FULLY REMOVED WITHIN THE PERIMETER OF THE SUPPORTING MEMBERS.
2. COORDINATE LOCATION AND SIZE OF OPENINGS WITH APPROVED MECHANICAL SHOP DRAWINGS.
3. ALL FRAMING LOCATED BELOW ROOF FRAMING IS TO BE PRIME PAINTED PER DIVISION 05 AND FINISH COAT PER DIVISION 09.

TYPICAL EQUIPMENT SUPPORT FRAME AT TECTUM DECK
SCALE: NONE

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LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

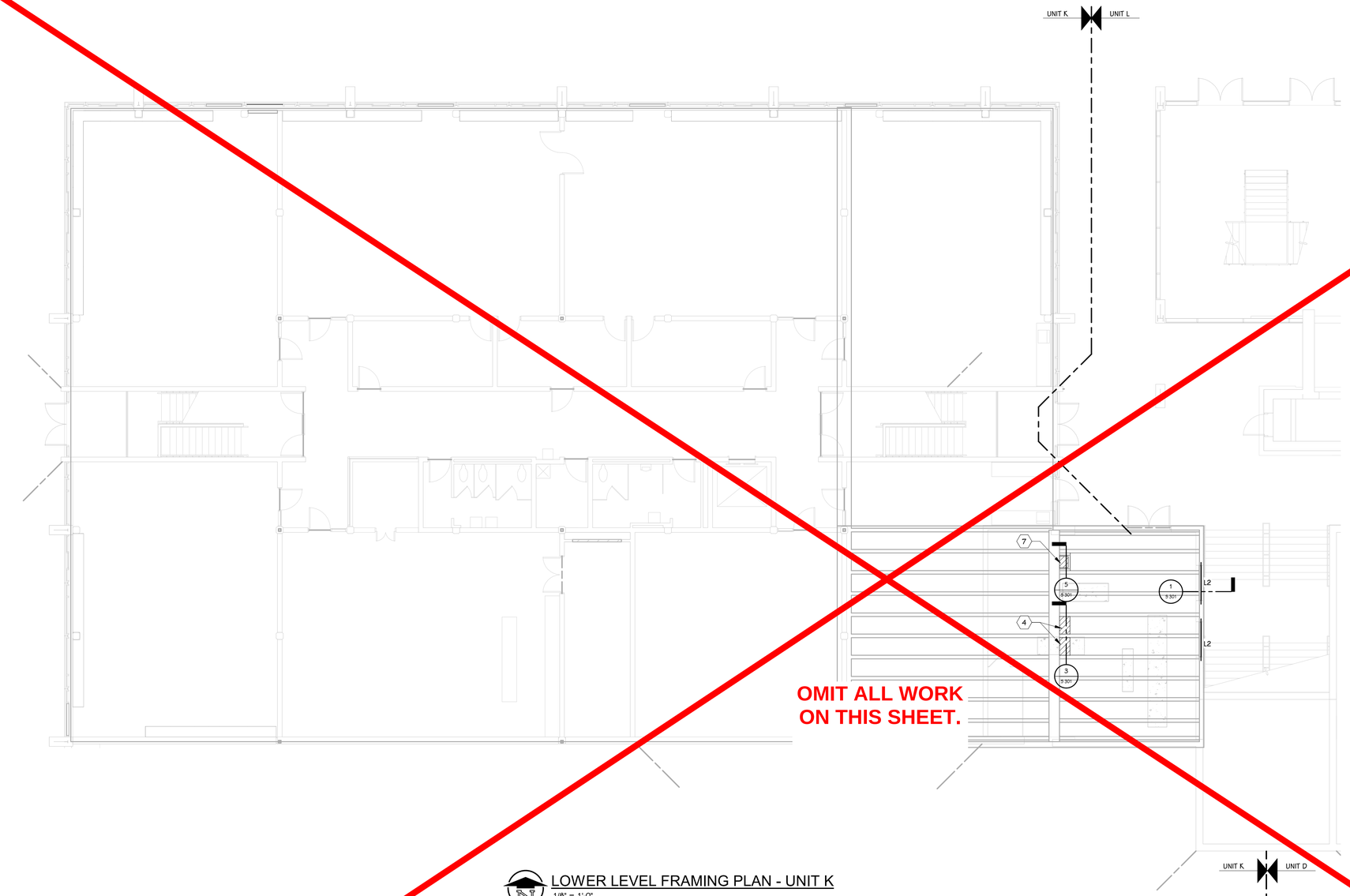
OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
TYPICAL DETAILS

DATE
NOVEMBER 22, 2022

SHEET NUMBER
S 002
21-807.00



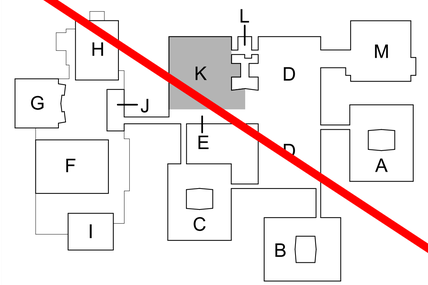
OMIT ALL WORK ON THIS SHEET.

LOWER LEVEL FRAMING PLAN - UNIT K
1/8" = 1'-0"

KEYED NOTES - FRAMING

1 PROVIDE CHANNELS BENEATH EACH MECHANICAL UNIT. REFER TO TYPICAL RTU SUPPORT DETAIL FOR MORE INFORMATION.
2 NEW JOISTS TO BE INSTALLED BETWEEN EXISTING. PROVIDE SPLICE IF REQUIRED FOR INSTALLATION. JOIST SUPPLIER TO DESIGN TOP CHORDS AS FULL UNBRACED BY METAL DECK.
3 PROVIDE SLOPED JOIST SEATS AS REQUIRED DUE TO SLOPED ROOF.
4 REMOVE CONCRETE SLAB BETWEEN CONCRETE JOISTS FOR MECHANICAL DUCT PENETRATIONS.
5 PROVIDE FRAMING BENEATH NEW MECHANICAL HOODS. REFER TO TYPICAL ROOF OPENING DETAIL FOR REQUIRED FRAMING.
6 AHU-M2 TO BE SUPPORTED FROM EXISTING HANGERS. VERIFY THAT A MINIMUM OF TWO BAR JOISTS ARE ENGAGED BY SUPPORT FRAMING.
7 REFER TO SECTIONS 4/S301 AND 5/S301 FOR ADDITIONAL STEEL REQUIRED FOR SLAB SUPPORT AT THIS PENETRATION.

KEY PLAN



KEY PLAN
SCALE: NO SCALE

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SCHOOL MECHANICAL
IMPROVEMENTS
PROJECT

OWNER
KALAMAZOO PUBLIC
SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
FLOOR FRAMING PLAN - UNIT K

DATE
NOVEMBER 22, 2022

SHEET NUMBER
S 201K
21-807.00

KEYED NOTES - FRAMING

1 PROVIDE CHANNELS BENEATH EACH MECHANICAL UNIT. REFER TO TYPICAL RTU SUPPORT DETAIL FOR MORE INFORMATION.
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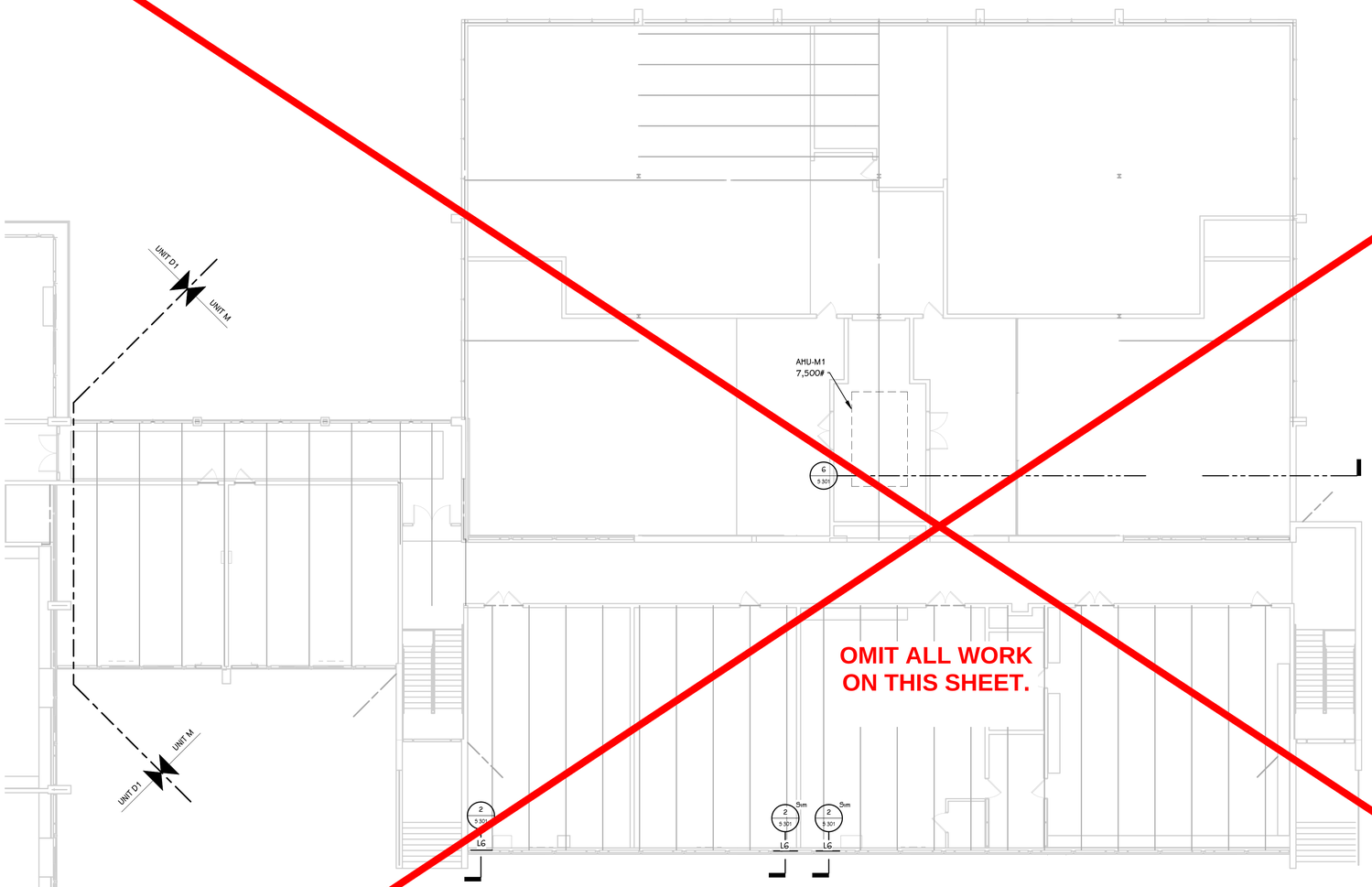

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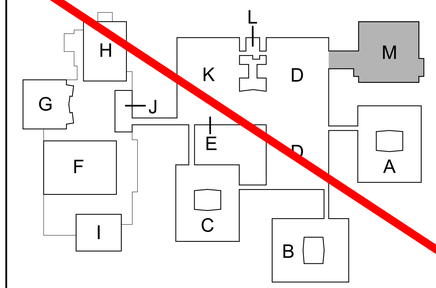
FLOOR FRAMING PLAN - UNIT M
3/32" = 1'-0"

KEY PLAN



KEY PLAN
SCALE: NO SCALE

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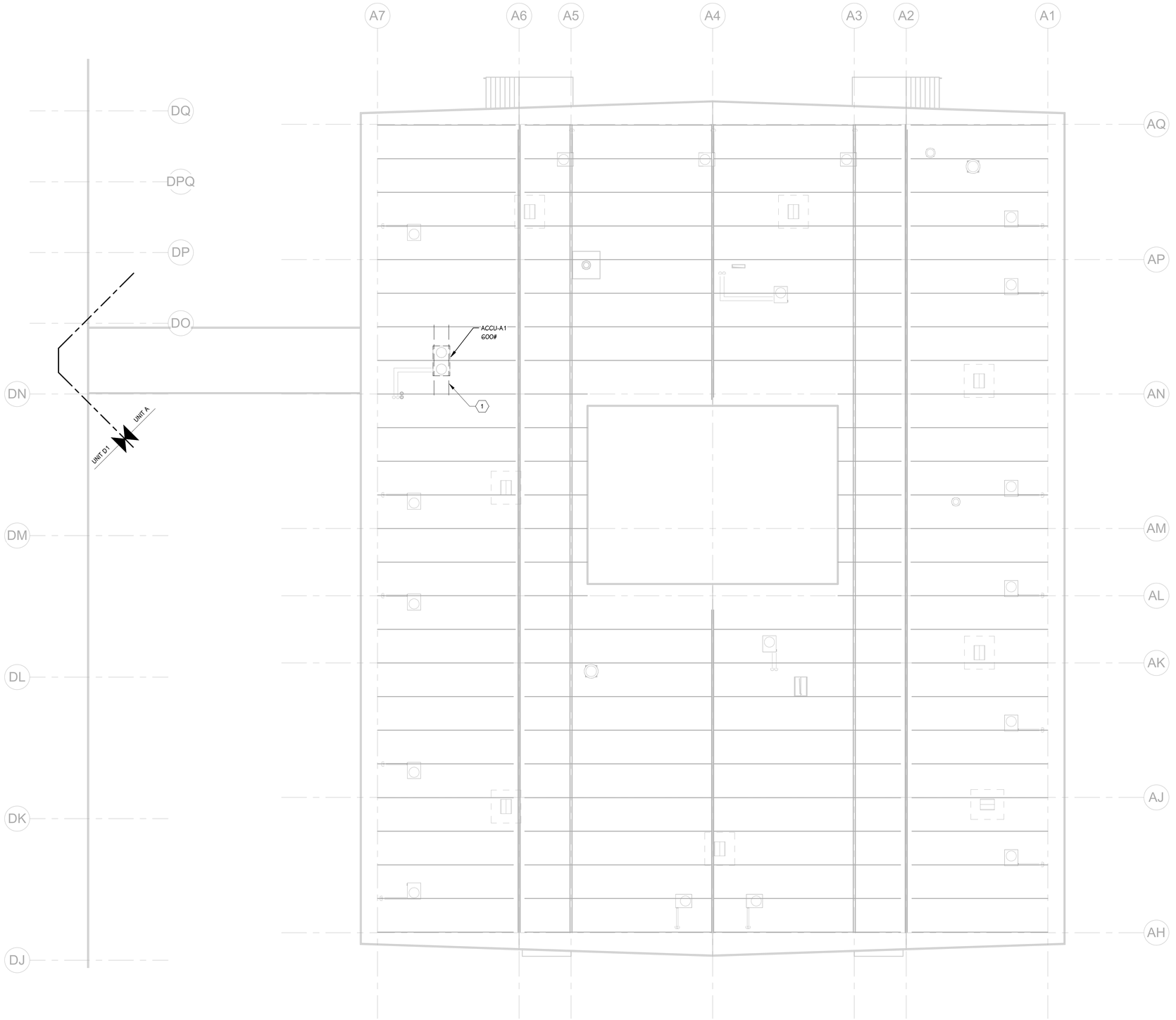
Kalamazoo, Michigan

SHEET TITLE
FLOOR FRAMING PLAN - UNIT M

DATE
NOVEMBER 22, 2022

SHEET NUMBER
S 201M
21-807.00

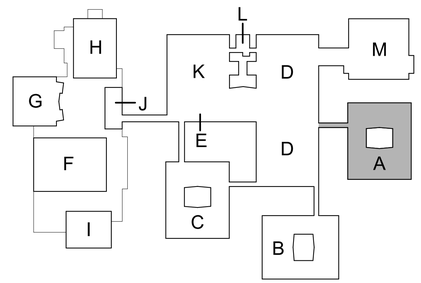


ROOF FRAMING PLAN - UNIT A
3/32" = 1'-0"

KEYED NOTES - FRAMING

1 PROVIDE CHANNELS BENEATH EACH MECHANICAL UNIT. REFER TO TYPICAL RTU SUPPORT DETAIL FOR MORE INFORMATION.
2 NEW JOISTS TO BE INSTALLED BETWEEN EXISTING. PROVIDE SPLICE IF REQUIRED FOR INSTALLATION. JOIST SUPPLIER TO DESIGN TOP CHORDS AS FULL UNBRACED BY METAL DECK.
3 PROVIDE SLOPED JOIST SEATS AS REQUIRED DUE TO SLOPED ROOF.
4 REMOVE CONCRETE SLAB BETWEEN CONCRETE JOISTS FOR MECHANICAL DUCT PENETRATIONS.
5 PROVIDE FRAMING BENEATH NEW MECHANICAL HOODS. REFER TO TYPICAL ROOF OPENING DETAIL FOR REQUIRED FRAMING.
6 AHU-M2 TO BE SUPPORTED FROM EXISTING HANGERS. VERIFY THAT A MINIMUM OF TWO BAR JOISTS ARE ENGAGED BY SUPPORT FRAMING.
7 REFER TO SECTION S 4/S301 AND S/S301 FOR ADDITIONAL STEEL REQUIRED FOR SLAB SUPPORT AT THIS PENETRATION.

KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Kalamazoo, Michigan

SHEET TITLE
ROOF FRAMING PLAN - UNIT A

DATE
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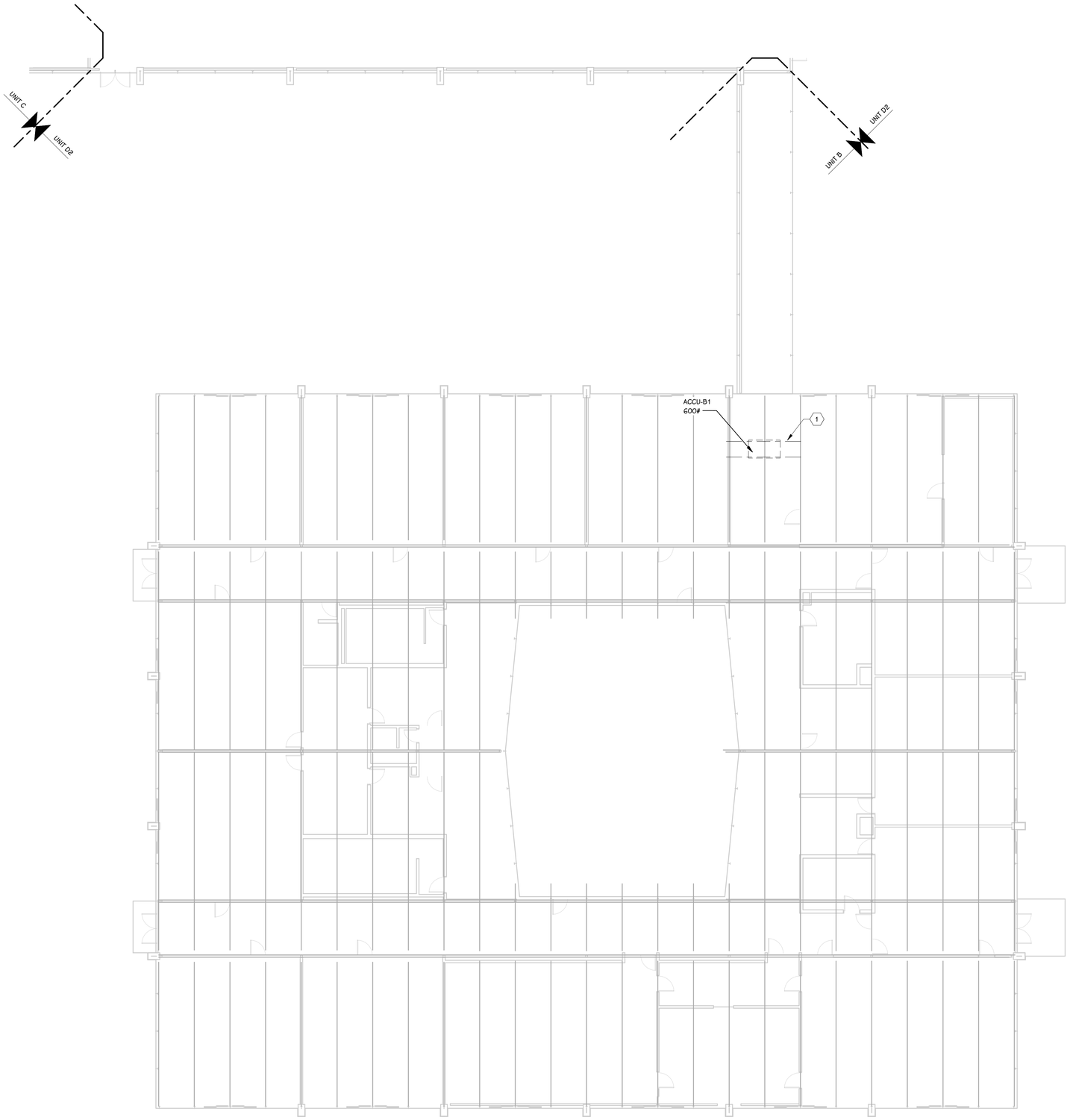
SHEET NUMBER
S 202A
21-807.00



ROOF FRAMING PLAN - UNIT B
3/32" = 1'-0"

KEYED NOTES - FRAMING

1 PROVIDE CHANNELS BENEATH EACH MECHANICAL UNIT. REFER TO TYPICAL RTU SUPPORT DETAIL FOR MORE INFORMATION.
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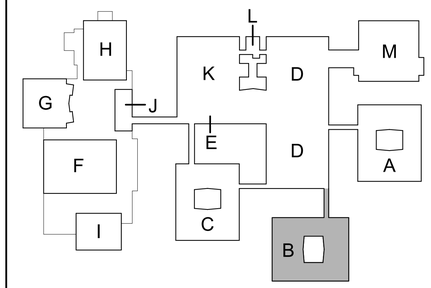
3 PROVIDE SLOPED JOIST SEATS AS REQUIRED DUE TO SLOPED ROOF.
4 REMOVE CONCRETE SLAB BETWEEN CONCRETE JOISTS FOR MECHANICAL DUCT PENETRATIONS.
5 PROVIDE FRAMING BENEATH NEW MECHANICAL HOODS. REFER TO TYPICAL ROOF OPENING DETAIL FOR REQUIRED FRAMING.
6 AHU-M2 TO BE SUPPORTED FROM EXISTING HANGERS. VERIFY THAT A MINIMUM OF TWO BAR JOISTS ARE ENGAGED BY SUPPORT FRAMING.
7 REFER TO SECTIONS 4/S301 AND 5/S301 FOR ADDITIONAL STEEL REQUIRED FOR SLAB SUPPORT AT THIS PENETRATION.

KEY PLAN



KEY PLAN
SCALE: NO SCALE

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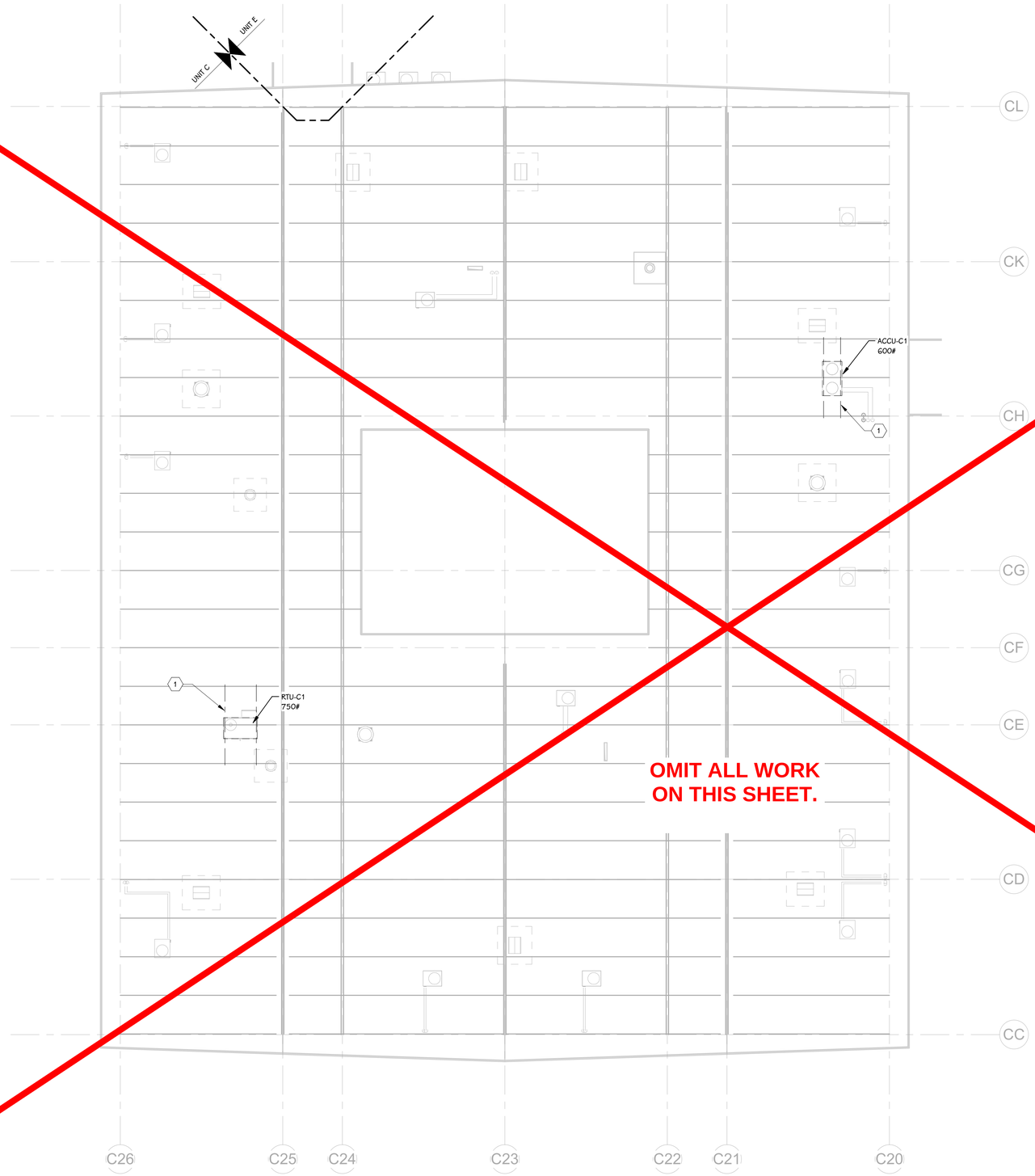
21-807.00



ROOF FRAMING PLAN - UNIT C
3/32" = 1'-0"

OMIT ALL WORK ON THIS SHEET.

KEYED NOTES - FRAMING

1 PROVIDE CHANNELS BENEATH EACH MECHANICAL UNIT. REFER TO TYPICAL RTU SUPPORT DETAIL FOR MORE INFORMATION.
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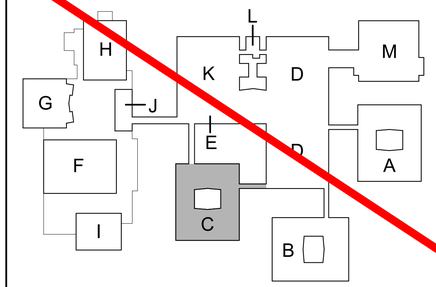
KEY PLAN



KEY PLAN
SCALE: NO SCALE

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ROOF FRAMING PLAN - UNIT C

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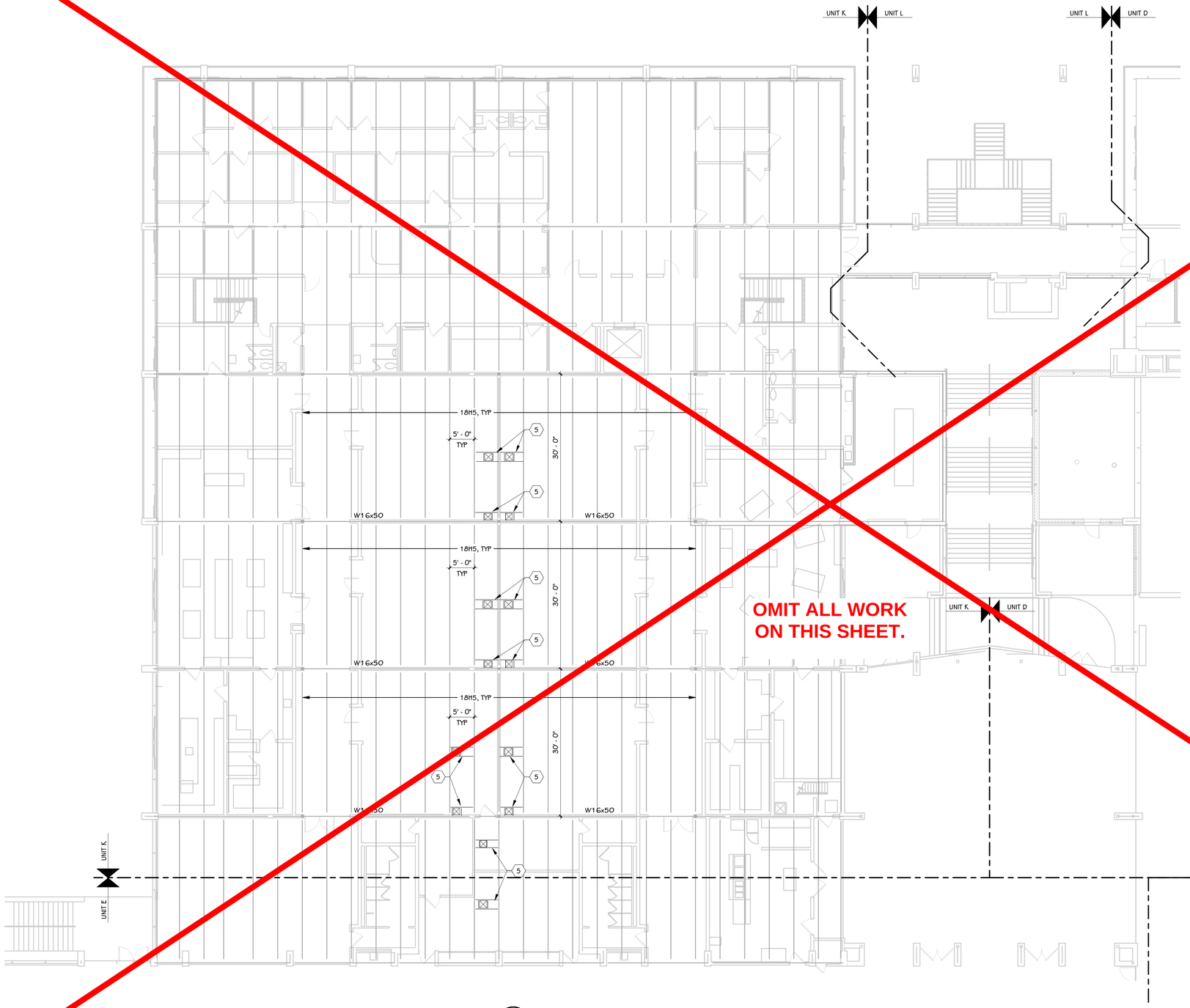
S 202C
21-807.00



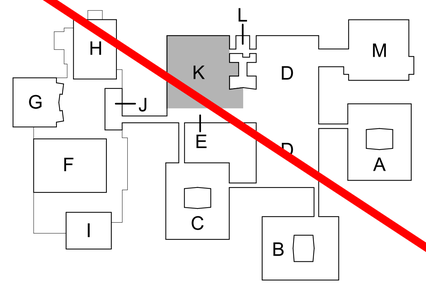
OMIT ALL WORK ON THIS SHEET.

ROOF FRAMING PLAN - UNIT K
3/32" = 1'-0"

KEYED NOTES - FRAMING

1 PROVIDE CHANNELS BENEATH EACH MECHANICAL UNIT. REFER TO TYPICAL RTU SUPPORT DETAIL FOR MORE INFORMATION.
2 NEW JOISTS TO BE INSTALLED BETWEEN EXISTING. PROVIDE SPLICE IF REQUIRED FOR INSTALLATION. JOIST SUPPLIER TO DESIGN TOP CHORDS AS FULL UNBRACED BY METAL DECK.
3 PROVIDE SLOPED JOIST SEATS AS REQUIRED DUE TO SLOPED ROOF.
4 REMOVE CONCRETE SLAB BETWEEN CONCRETE JOISTS FOR MECHANICAL DUCT PENETRATIONS.
5 PROVIDE FRAMING BENEATH NEW MECHANICAL HOODS. REFER TO TYPICAL ROOF OPENING DETAIL FOR REQUIRED FRAMING.
6 AHU-M2 TO BE SUPPORTED FROM EXISTING HANGERS. VERIFY THAT A MINIMUM OF TWO BAR JOISTS ARE ENGAGED BY SUPPORT FRAMING.
7 REFER TO SECTIONS 4/S301 AND 5/S301 FOR ADDITIONAL STEEL REQUIRED FOR SLAB SUPPORT AT THIS PENETRATION.

KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

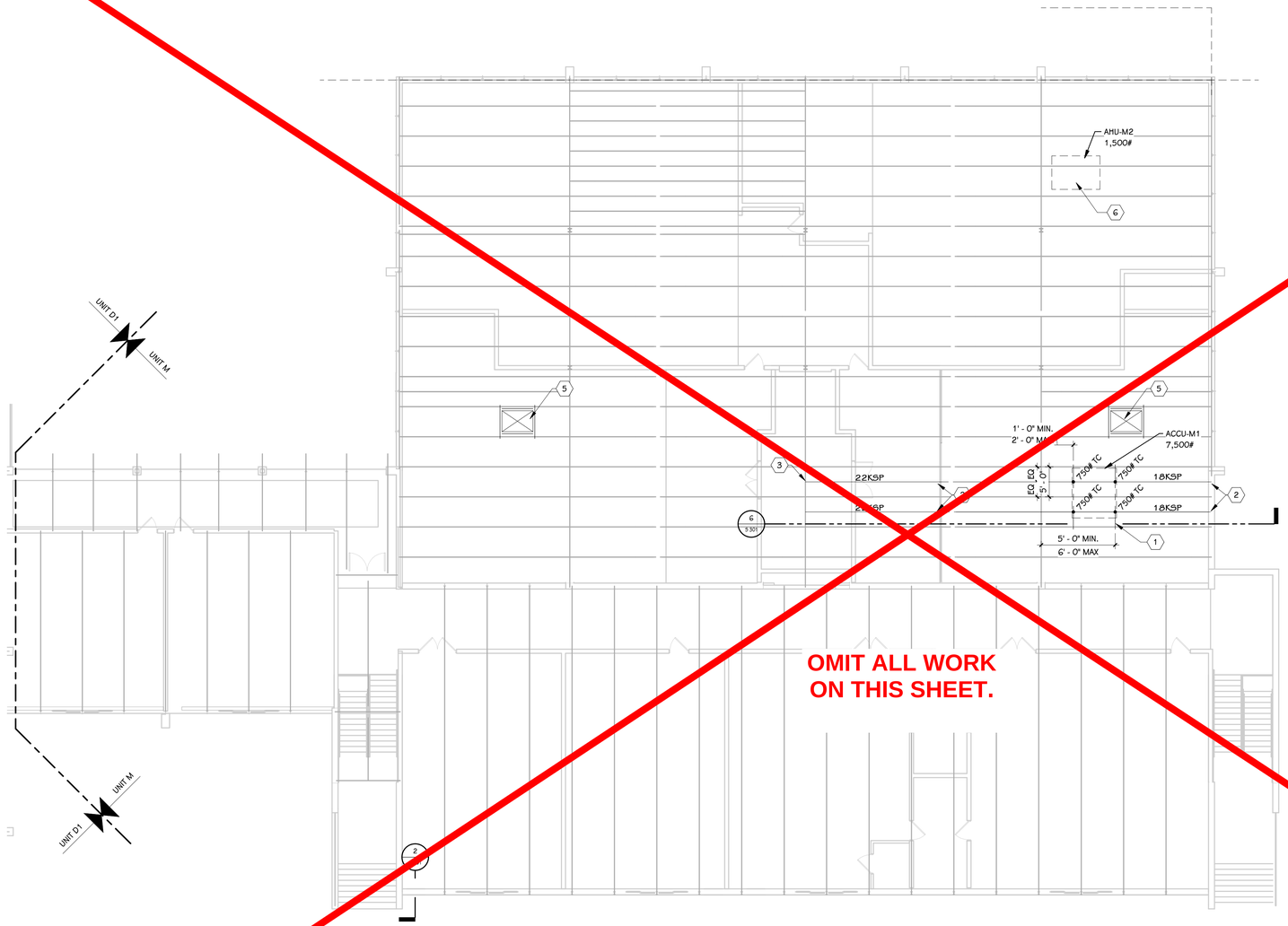
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ROOF FRAMING PLAN - UNIT K

DATE
NOVEMBER 22, 2022

SHEET NUMBER
S202K
21-807.00



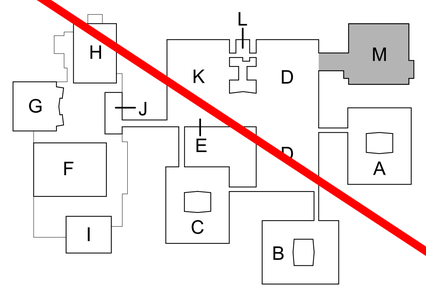
OMIT ALL WORK
ON THIS SHEET.

ROOF FRAMING PLAN - UNIT M
3/32" = 1'-0"

KEYED NOTES - FRAMING

1 PROVIDE CHANNELS BENEATH EACH MECHANICAL UNIT. REFER TO TYPICAL RTU SUPPORT DETAIL FOR MORE INFORMATION.
2 NEW JOISTS TO BE INSTALLED BETWEEN EXISTING. PROVIDE SPLICE IF REQUIRED FOR INSTALLATION. JOIST SUPPLIER TO DESIGN TOP CHORDS AS FULL UNBRACED BY METAL DECK.
3 PROVIDE SLOPED JOIST SEATS AS REQUIRED DUE TO SLOPED ROOF.
4 REMOVE CONCRETE SLAB BETWEEN CONCRETE JOISTS FOR MECHANICAL DUCT PENETRATIONS.
5 PROVIDE FRAMING BENEATH NEW MECHANICAL HOODS. REFER TO TYPICAL ROOF OPENING DETAIL FOR REQUIRED FRAMING.
6 AHU-M2 TO BE SUPPORTED FROM EXISTING HANGERS. VERIFY THAT A MINIMUM OF TWO BAR JOISTS ARE ENGAGED BY SUPPORT FRAMING.
7 REFER TO SECTIONS 4/S301 AND 5/S301 FOR ADDITIONAL STEEL REQUIRED FOR SLAB SUPPORT AT THIS PENETRATION.

KEY PLAN



KEY PLAN
SCALE: NO SCALE

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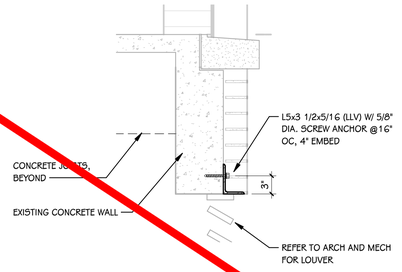
PROJECT TITLE
LOY NORRIX HIGH
SCHOOL MECHANICAL
IMPROVEMENTS
PROJECT

OWNER
KALAMAZOO PUBLIC
SCHOOLS
Kalamazoo, Michigan

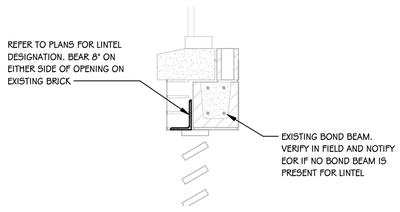
SHEET TITLE
ROOF FRAMING PLAN - UNIT M

DATE
NOVEMBER 22, 2022

SHEET NUMBER
S 202M
21-807.00



1 S 301 SECTION
1" = 1'-0"



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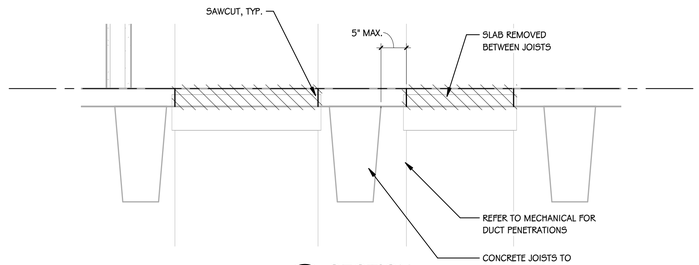
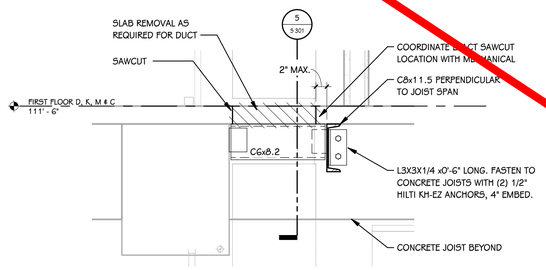
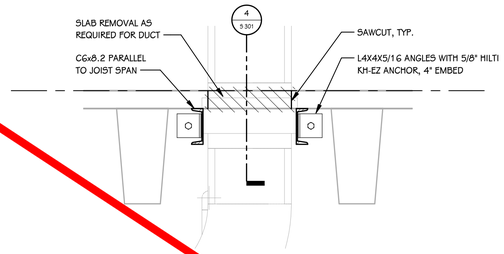
1" = 1'-0"



3 S 301 SECTION
1" = 1'-0"

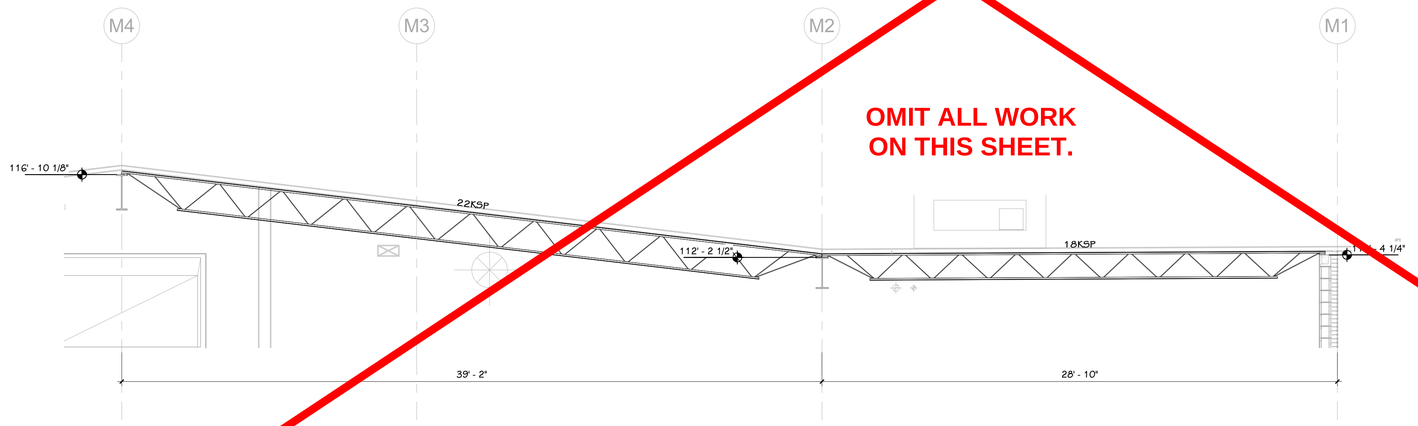


4 S 301 SECTION
1" = 1'-0"



5 S 301 SECTION
1" = 1'-0"

OMIT ALL WORK ON THIS SHEET.



6 S 301 SECTION
1/4" = 1'-0"

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LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
FOUNDATION AND FRAMING DETAILS

DATE
NOVEMBER 22, 2022

SHEET NUMBER
S 301
21-807.00

OMIT ALL WORK ON THIS SHEET.

LOWER LEVEL DEMOLITION PLAN - UNIT D1
3/32" = 1'-0"

KEYED NOTES - DEMOLITION

1 REMOVE CEILING TILE AND GRID AND SALVAGE FOR REUSE. COORDINATE WITH MECHANICAL DRAWINGS.
1A REMOVE HARD LID CEILING AND SUPPORT STRUCTURE AND PREP FOR NEW. COORDINATE EXTEND WITH MECHANICAL DRAWINGS.
2 REMOVE AND DISCARD CEILING SYSTEM - REFER TO OTHER DRAWINGS FOR CEILING MOUNTED FIXTURE SCOPE. PREP FOR NEW CEILING.
2A BY OWNER - REMOVE AND DISCARD CEILING - REFER TO OTHER DRAWINGS FOR CEILING MOUNTED FIXTURE SCOPE. PREP FOR NEW CEILING.
3 REMOVE AND DISCARD OF CONVECTOR - REFER TO MECH. DRAWINGS. PREP WALL FOR NEW FINISH
4 FOR MECH. UNIT REMOVAL REFER TO MECH. DRAWINGS. PREP WALL FOR REFINISH.
5 REMOVE AND DISCARD LOUVER - REFER TO AND COORDINATE WITH MECH. DRAWINGS.
7 REMOVE UNIT VENTILATOR FRONT SCREEN AND COUNTERTOP - SEE MECH. DRAWINGS.
9 REMOVE AND DISCARD OF COUNTERTOP AND FRONT PANEL OVER UV UNIT
10 REMOVE ROOF BEAM MOUNTED PIPE SYSTEM WELDED TO ROOF BEAM AND DISCARD, GRIND BEAMS SMOOTH AND PREP FOR NEW PRIME AND PAINT ENTIRE BEAM
11 REMOVE AND DISGARD GLASS UNIT AND PREP FOR NEW LOUVER INSERT INTO EXISTING MULLION SYSTEM.
12 REMOVE AND DISGARD ELEVATED WOOD FLOOR SYSTEM, FRAMING, SHEATHING, FLOOR FINISH AND WALL BASE. PREP FLOOR AND WALLS FOR NEW FINISH.
13 REMOVE AND SALVAGE PIPE RAIL SYSTEM FOR REINSTALLATION. STORE AND PROTECT DURING CONSTRUCTION.
15 REMOVE AND DISCARD CASEWORK AND PREP FOR NEW.
16 REMOVE AND DISCARD PORTION OF WALL TO ALLOW FOR DUCT ACCESS
17 REMOVE PORTION OF WALL FULL HEIGHT AS REQUIRED FOR NEW WORK AND PREP FOR NEW WALL.
18 MECHANICAL PIT. PREP PIT FOR INFILL. SEE OTHER DRAWINGS.
19 REMOVE GLASS OUT OF EXISTING STOREFRONT WINDOW FRAME AND PREP FOR NEW CONSTRUCTION - REFER TO INTERIOR DEMO. ELEVATIONS
20 REMOVE AND SALVAGE ALUM. CHASE. STORE AND PROTECT DURING CONSTRUCTION AND PREP FOR REUSE.
21 REMOVE WOOD TRIM PIECE AT CEILING ALONG EXTERIOR WINDOW WALLS AND SALVAGE FOR REUSE. STRIP AND PREP TRIM FOR NEW PRIME AND PAINT.
22 REMOVE AND DISCARD WALL TILE, AND CMU FACE SHELL AND PREP FOR NEW.
23 REMOVE WINDOW AC UNIT AND RETURN TO KFS. REMOVE AND DISCARD TEMPORARY PANEL AROUND AC UNIT.
24 REMOVE AND DISCARD CASEWORK AND COUNTERTOP.
25 REFER TO MECHANICAL DRAWINGS FOR MECHANICAL DEMO SCOPE, PREP OPENING FOR NEW CONSTRUCTION.
26 BY OWNER - REMOVE AND DISCARD FLOORING AND ADHESIVE BELOW EXISTING UNIT VENTILATOR BEING REMOVED AND DISPOSED. REMOVE AND DISPOSE OF EXISTING BUILD UP U.V. BASE AND WALL BASE.
27 REMOVE AND SALVAGE CASEWORK, COUNTERTOP, AND BASE AND PREP FOR REINSTALLATION.
28 REMOVE AND DISCARD FLOOR SLAB AND PREP FOR NEW DUCTWORK - REFER TO STRUCTURAL AND MECHANICAL AND COORD. FOR FINAL SIZE AND LOCATION. FINAL LOCATION SHALL BE BETWEEN EXISTING STRUCTURAL CONCRETE FLOOR BEAMS.
29 REMOVE AND SALVAGE TACKBOARD - REFER TO NEW CONSTRUCTION FOR NEW LOCATION
30 REMOVE AND DISCARD SOAP DISPENSER AND PAPER TOWEL DISPENSER

PATCH, PRIME AND PAINT WALL TO MATCH EXISTING AT NEWLY EXPOSED WALL SURFACE. SEE MECHANICAL DRAWINGS FOR NEW MECHANICAL EQUIPMENT.

ROOM (CORRIDOR 19)

LOWER LEVEL - KEY PLAN

KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

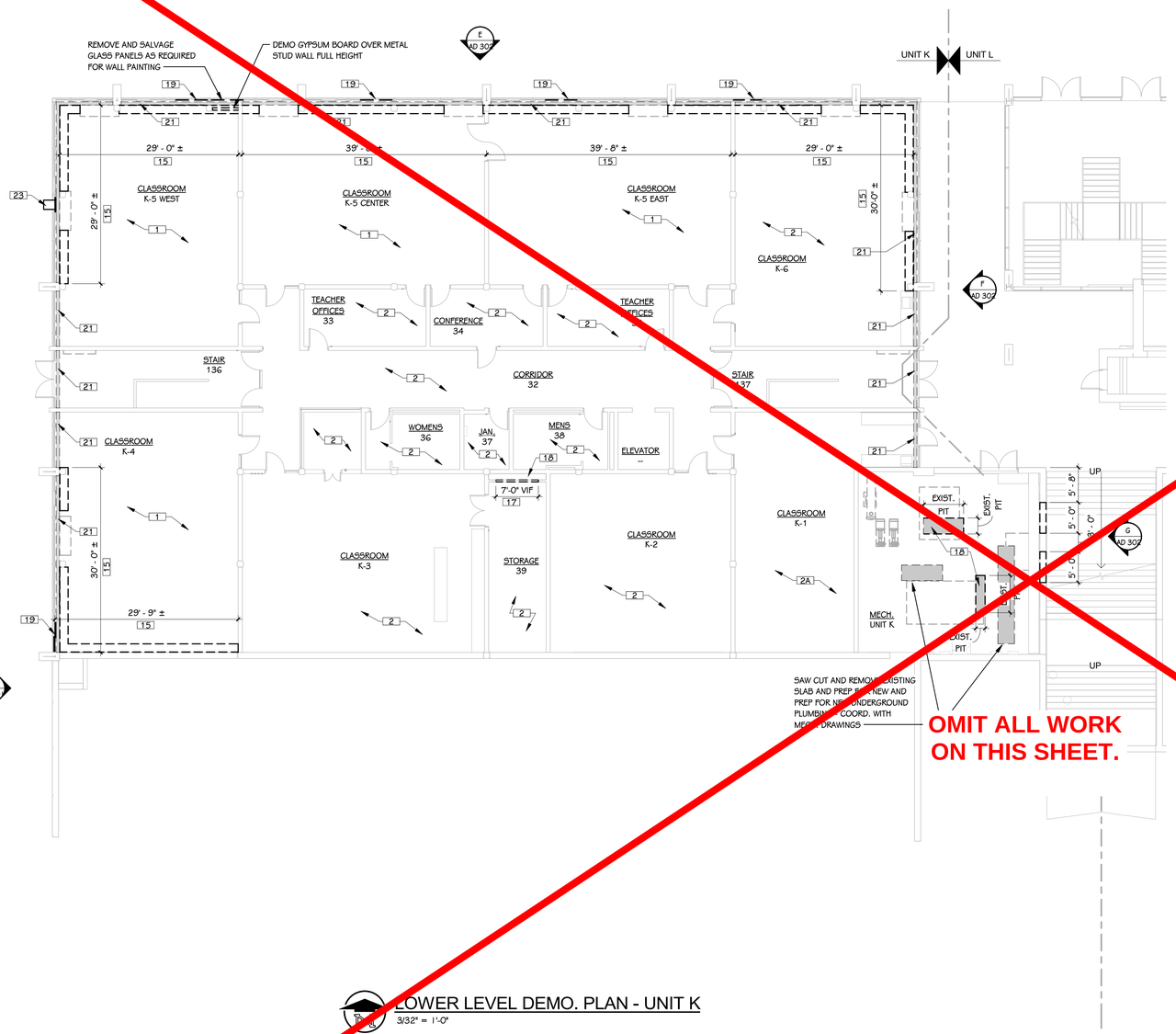
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL DEMOLITION PLAN - UNIT D1

DATE
NOVEMBER 22, 2022

SHEET NUMBER
AD 100D1
21-807.00



LOWER LEVEL DEMO. PLAN - UNIT K
3/32" = 1'-0"

KEYED NOTES - DEMOLITION

1 REMOVE CEILING TILE AND GRID AND SALVAGE FOR REUSE. COORDINATE WITH MECHANICAL DRAWINGS.
1A REMOVE HARD LID CEILING AND SUPPORT STRUCTURE AND PREP FOR NEW. COORDINATE EXTEND WITH MECHANICAL DRAWINGS.
2 REMOVE AND DISCARD CEILING SYSTEM - REFER TO OTHER DRAWINGS FOR CEILING MOUNTED FIXTURE SCOPE. PREP FOR NEW CEILING.
2A BY OWNER - REMOVE AND DISCARD CEILING - REFER TO OTHER DRAWINGS FOR CEILING MOUNTED FIXTURE SCOPE. PREP FOR NEW CEILING.
3 REMOVE AND DISCARD OF CONVECTOR - REFER TO MECH. DRAWINGS. PREP WALL FOR NEW FINISH
4 FOR MECH. UNIT REMOVAL REFER TO MECH. DRAWINGS. PREP WALL FOR REFINISH.
5 REMOVE AND DISCARD LOUVER - REFER TO AND COORDINATE WITH MECH. DRAWINGS
7 REMOVE UNIT VENTILATOR FRONT SCREEN AND COUNTERTOP - SEE MECH. DRAWINGS.
9 REMOVE AND DISCARD OF COUNTERTOP AND FRONT PANEL OVER UV UNIT
10 REMOVE ROOF BEAM MOUNTED PIPE SYSTEM WELDED TO ROOF BEAMS AND DISCARD, GRIND BEAMS SMOOTH AND PREP FOR NEW PRIME AND PAINT ENTIRE BEAM
11 REMOVE AND DISGARD GLASS UNIT AND PREP FOR NEW LOUVER INSERT INTO EXISTING MULLION SYSTEM.
12 REMOVE AND DISGARD ELEVATED WOOD FLOOR SYSTEM, FRAMING, SHEATHING, FLOOR FINISH AND WALL BASE. PREP FLOOR AND WALLS FOR NEW FINISH.
13 REMOVE AND SALVAGE PIPE RAIL SYSTEM FOR REINSTALLATION. STORE AND PROTECT DURING CONSTRUCTION.
15 REMOVE AND DISCARD CASEWORK AND PREP FOR NEW.
16 REMOVE AND DISCARD PORTION OF WALL TO ALLOW FOR DUCT ACCESS
17 REMOVE PORTION OF WALL FULL HEIGHT AS REQUIRED FOR NEW WORK AND PREP FOR NEW WALL.
18 MECHANICAL PIT. PREP PIT FOR INFILL. SEE OTHER DRAWINGS.
19 REMOVE GLASS OUT OF EXISTING STOREFRONT WINDOW FRAME AND PREP FOR NEW CONSTRUCTION - REFER TO INTERIOR DEMO. ELEVATIONS
20 REMOVE AND SALVAGE ALUM. CHASE. STORE AND PROTECT DURING CONSTRUCTION AND PREP FOR REUSE.
21 REMOVE WOOD TRIM PIECE AT CEILING ALONG EXTERIOR WINDOW WALLS AND SALVAGE FOR REUSE. STRIP AND PREP TRIM FOR NEW PRIME AND PAINT.
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24 REMOVE AND DISCARD CASEWORK AND COUNTERTOP.
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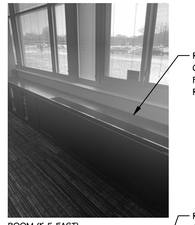
26 BY OWNER - REMOVE AND DISCARD FLOORING AND ADHESIVE BELOW EXISTING UNIT VENTILATOR BEING REMOVED AND DISPOSED. REMOVE AND DISPOSE OF EXISTING BUILD UP U.V. BASE AND WALL BASE.
27 REMOVE AND SALVAGE CASEWORK, COUNTERTOP, AND BASE AND PREP FOR REINSTALLATION.
28 REMOVE AND DISCARD FLOOR SLAB AND PREP FOR NEW DUCTWORK - REFER TO STRUCTURAL AND MECHANICAL AND COORD. FOR FINAL SIZE AND LOCATION. FINAL LOCATION SHALL BE BETWEEN EXISTING STRUCTURAL CONCRETE FLOOR BEAMS.
29 REMOVE AND SALVAGE TACKBOARD - REFER TO NEW CONSTRUCTION FOR NEW LOCATION
30 REMOVE AND DISCARD SOAP DISPENSER AND PAPER TOWEL DISPENSER

GYPSUM BOARD AND METAL STUD WALL TO BE REMOVED AND DISPOSED
REMOVE AND DISPOSE METAL CASEWORK. ALSO CASEWORK BELOW EXISTING WALL.
ROOM (K-5 WEST)

REMOVE AND DISPOSE OF CEILING TILES AND GRID AND PREP FOR NEW.
REMOVE AND SALVAGE PAINTED WOOD TRIM AND PREP FOR REUSE.
ROOM (K-6)

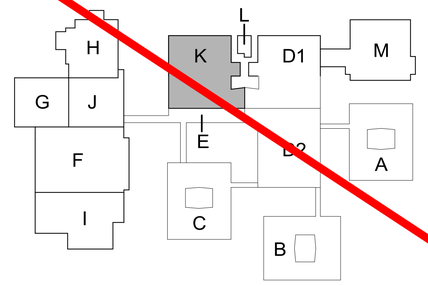
BY OWNER - REMOVE AND DISCARD CEILING. PREP FOR NEW 2X2 DROP CEILING AND LIGHTS
ROOM (K-1)

REMOVE AND SALVAGE CEILING SYSTEM FOR REUSE. REFER TO ELEC. AND MECH. DRAWINGS FOR MORE INFORMATION.
ROOM (K-4)


REMOVE AND AND DISPOSE METAL CABINETS AND PREP FOR NEW. PATCH PRIME AND PAINT EXISTING WALL AS REQUIRED.
ROOM (K-5 EAST)

REMOVE AND AND DISPOSE CEILING AND PREP FOR NEW
REMOVE AND DISPOSE VERTICAL LAY-INN CEILING AND PREP FOR NEW WALL
DOORS AND EXISTING WALL THIS LEVEL TO REMAIN
ROOM (K-3)

LOWER LEVEL - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR	DATE

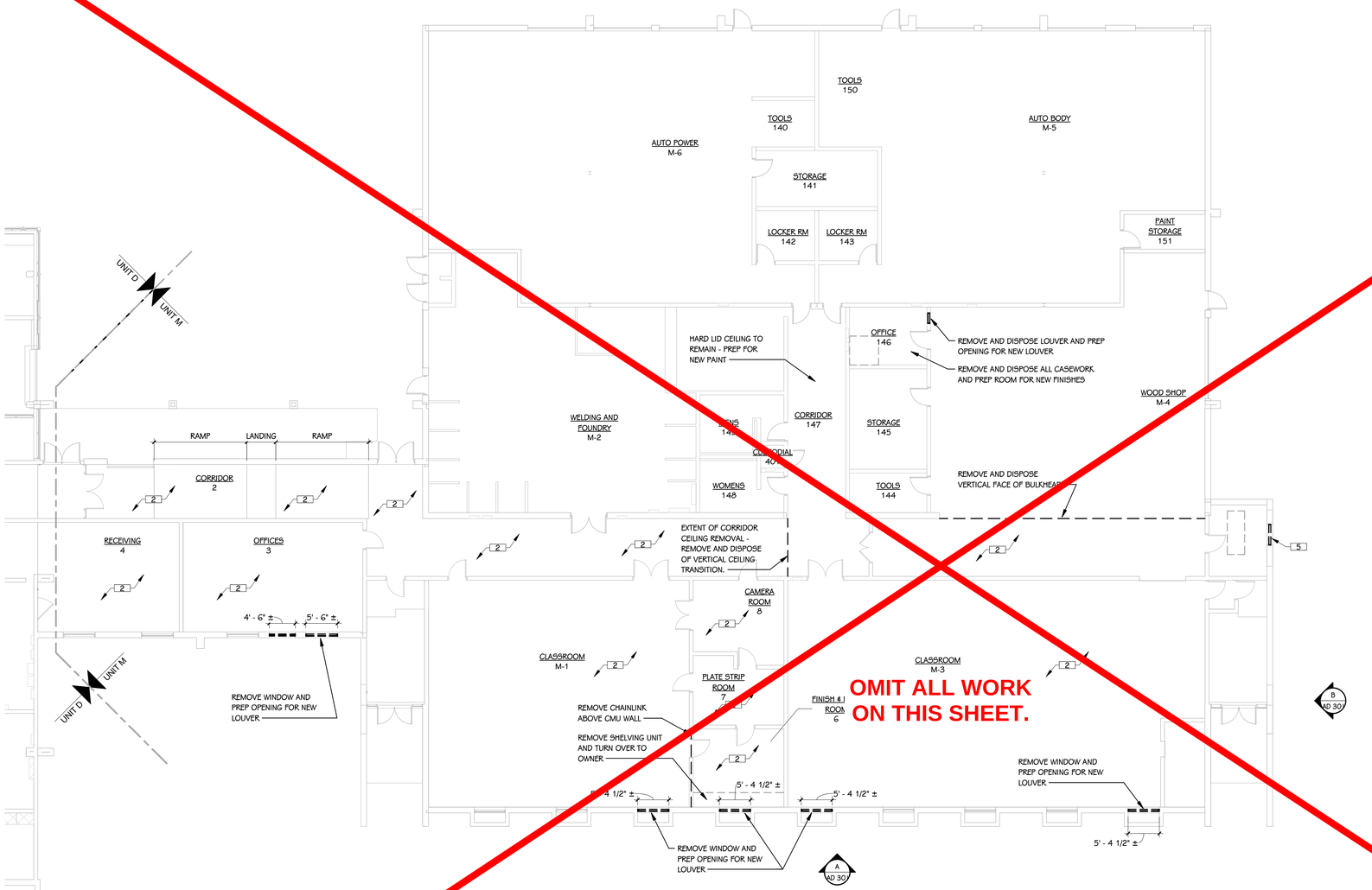
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL DEMOLITION PLAN - UNIT K

DATE
NOVEMBER 22, 2022

SHEET NUMBER
AD 100K
21-807.00



OMIT ALL WORK ON THIS SHEET.

LOWER LEVEL DEMOLITION PLAN - UNIT M

3/32" = 1'-0"

REMOVE CHAINLINK FENCE AND PREP FOR NEW CONSTRUCTION

REMOVE SHELVING UNIT AND TURN OVER TO OWNER

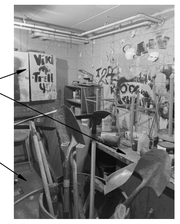
ROOM (FINISH AND PREP ROOM)

REMOVE AND DISPOSE FILTER FRAME AND PREP OPENING FOR NEW LOUVER.

REMOVE AND DISPOSE CASEWORK IN THIS ROOM. PREP ROOM FOR NEW CONSTRUCTION.

PREP ROOM FOR NEW FINISHES AND LOUVER THROUGH WALL

ROOM (146)



ROOM (146)

KEYED NOTES - DEMOLITION

1 REMOVE CEILING TILE AND GRID AND SALVAGE FOR REUSE. COORDINATE WITH MECHANICAL DRAWINGS.
1A REMOVE HARD LID CEILING AND SUPPORT STRUCTURE AND PREP FOR NEW. COORDINATE EXTEND WITH MECHANICAL DRAWINGS.
2 REMOVE AND DISCARD CEILING SYSTEM - REFER TO OTHER DRAWINGS FOR CEILING MOUNTED FIXTURE SCOPE. PREP FOR NEW CEILING.
2A BY OWNER - REMOVE AND DISCARD CEILING - REFER TO OTHER DRAWINGS FOR CEILING MOUNTED FIXTURE SCOPE. PREP FOR NEW CEILING.
3 REMOVE AND DISCARD OF CONVECTOR - REFER TO MECH. DRAWINGS. PREP WALL FOR NEW FINISH
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7 REMOVE UNIT VENTILATOR FRONT SCREEN AND COUNTERTOP - SEE MECH. DRAWINGS.
9 REMOVE AND DISCARD OF COUNTERTOP AND FRONT PANEL OVER UV UNIT
10 REMOVE ROOF BEAM MOUNTED PIPE SYSTEM WELDED TO ROOF BEAM AND DISCARD, GRIND BEAMS SMOOTH AND PREP FOR NEW PRIME AND PAINT ENTIRE BEAM
11 REMOVE AND DISGARD GLASS UNIT AND PREP FOR NEW LOUVER INSERT INTO EXISTING MULLION SYSTEM.
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17 REMOVE PORTION OF WALL FULL HEIGHT AS REQUIRED FOR NEW WORK AND PREP FOR NEW WALL.
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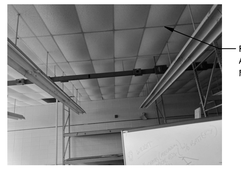
29 REMOVE AND SALVAGE TACKBOARD - REFER TO NEW CONSTRUCTION FOR NEW LOCATION
30 REMOVE AND DISCARD SOAP DISPENSER AND PAPER TOWEL DISPENSER



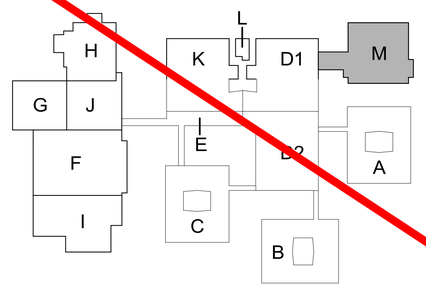
REMOVE AND DISCARD CEILING AND CEILING FIXTURES AND PREP FOR NEW.

ROOM (M-3)

REMOVE AND DISCARD CEILING MOUNTED MECH. EQUIP. AND MODIFY CEILING AS REQUIRED - REFER TO MECHANICAL DRAWINGS

ROOM (CORRIDOR)

LOWER LEVEL - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL DEMOLITION PLAN - UNIT M

DATE
NOVEMBER 22, 2022

SHEET NUMBER
AD 100M

21-807.00

REMOVE CASEWORK PANEL AND COUNTERTOP OVER EXISTING REMOVED UNIT VENTILATOR.

LEVEL 1 DEMOLITION PLAN - UNIT A

3/32" = 1'-0"

KEYED NOTES - DEMOLITION

1	REMOVE CEILING TILE AND GRID AND SALVAGE FOR REUSE. COORDINATE WITH MECHANICAL DRAWINGS.
1A	REMOVE HARD LID CEILING AND SUPPORT STRUCTURE AND PREP FOR NEW. COORDINATE EXTEND WITH MECHANICAL DRAWINGS.
2	REMOVE AND DISCARD CEILING SYSTEM - REFER TO OTHER DRAWINGS FOR CEILING MOUNTED FIXTURE SCOPE. PREP FOR NEW CEILING.
2A	BY OWNER - REMOVE AND DISCARD CEILING - REFER TO OTHER DRAWINGS FOR CEILING MOUNTED FIXTURE SCOPE. PREP FOR NEW CEILING.
3	REMOVE AND DISCARD OF CONVECTOR - REFER TO MECH. DRAWINGS. PREP WALL FOR NEW FINISH.
4	FOR MECH. UNIT REMOVAL REFER TO MECH. DRAWINGS. PREP WALL FOR REFINISH.
5	REMOVE AND DISCARD LOUVER - REFER TO AND COORDINATE WITH MECH. DRAWINGS.
7	REMOVE UNIT VENTILATOR FRONT SCREEN AND COUNTERTOP - SEE MECH. DRAWINGS.
9	REMOVE AND DISCARD OF COUNTERTOP AND FRONT PANEL OVER UV UNIT.
10	REMOVE ROOF BEAM MOUNTED PIPE SYSTEM WELDED TO ROOF BEAMS AND DISCARD, GRIND BEAMS SMOOTH AND PREP FOR NEW PRIME AND PAINT ENTIRE BEAM
11	REMOVE AND DISGARD GLASS UNIT AND PREP FOR NEW LOUVER INSERT INTO EXISTING MULLION SYSTEM.
12	REMOVE AND DISGARD ELEVATED WOOD FLOOR SYSTEM FRAMING, SHEATHING, FLOOR FINISH AND WALL BASE. PREP FLOOR AND WALLS FOR NEW FINISH.
13	REMOVE AND SALVAGE PIPE RAIL SYSTEM FOR REINSTALLATION. STORE AND PROTECT DURING CONSTRUCTION.
15	REMOVE AND DISCARD CASEWORK AND PREP FOR NEW.
16	REMOVE AND DISCARD PORTIONS OF WALL TO ALLOW FOR DUCT ACCESS
17	REMOVE PORTION OF WALL FULL HEIGHT AS REQUIRED FOR NEW WORK AND PREP FOR NEW WALL.
18	MECHANICAL PIT. PREP PIT FOR INFILL. SEE OTHER DRAWINGS.
19	REMOVE GLASS OUT OF EXISTING STOREFRONT WINDOW FRAME AND PREP FOR NEW CONSTRUCTION - REFER TO EXTERIOR DEMO. ELEVATIONS
20	REMOVE AND SALVAGE ALUM. CHASE. STORE AND PROTECT DURING CONSTRUCTION AND PREP FOR REUSE.
21	REMOVE WOOD TRIM PIECE AT CEILING ALONG EXTERIOR WINDOW WALLS AND SALVAGE FOR REUSE. STRIP AND PREP TRIM FOR NEW PRIME AND PAINT.
22	REMOVE AND DISCARD WALL TILE, AND CMU FACE SHELL AND PREP FOR NEW.
23	REMOVE WINDOW AC UNIT AND RETURN TO KPS. REMOVE AND DISCARD TEMPORARY PANEL AROUND AC UNIT.
24	REMOVE AND DISCARD CASEWORK AND COUNTERTOP.
25	REFER TO MECHANICAL DRAWINGS FOR MECHANICAL DEMO SCOPE, PREP OPENING FOR NEW CONSTRUCTION.
26	BY OWNER - REMOVE AND DISCARD FLOORING AND ADHESIVE BELOW EXISTING UNIT VENTILATOR BEING REMOVED AND DISPOSED. REMOVE AND DISPOSE OF EXISTING BUILD UP U.V. BASE AND WALL BASE.
27	REMOVE AND SALVAGE CASEWORK, COUNTERTOP, AND BASE AND PREP FOR REINSTALLATION.
28	REMOVE AND DISCARD FLOOR SLAB AND PREP FOR NEW DUCTWORK - REFER TO STRUCTURAL AND MECHANICAL AND COORD. FOR FINAL SIZE AND LOCATION. FINAL LOCATION SHALL BE BETWEEN EXISTING STRUCTURAL CONCRETE FLOOR BEAMS.
29	REMOVE AND SALVAGE TACKBOARD - REFER TO NEW CONSTRUCTION FOR NEW LOCATION
30	REMOVE AND DISCARD SOAP DISPENSER AND PAPER TOWEL DISPENSER

REMOVE AND DISPOSE COUNTERTOP ABOVE EXIST. UV.

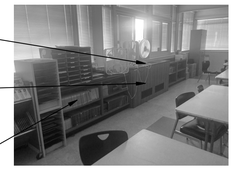
REMOVE AND DISPOSE CASEWORK SCREEN IN FRONT OF EXIST. UV.

ROOM (A-20) SIMILAR FOR ROOM (A-21)

REMOVE AND DISPOSE COUNTERTOP ABOVE EXIST. UV.

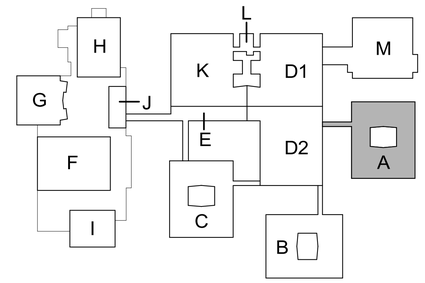
REMOVE AND DISPOSE CASEWORK SCREEN IN FRONT OF EXIST. UV.

REMOVE AND SALVAGE FOR REUSE ADJOINING CASEWORK BOTH SIDES OF EXISTING REMOVED UV.



ROOM (A-20) SIMILAR FOR ROOM (A-10)

LEVEL 1 - KEY PLAN



KEY PLAN

SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

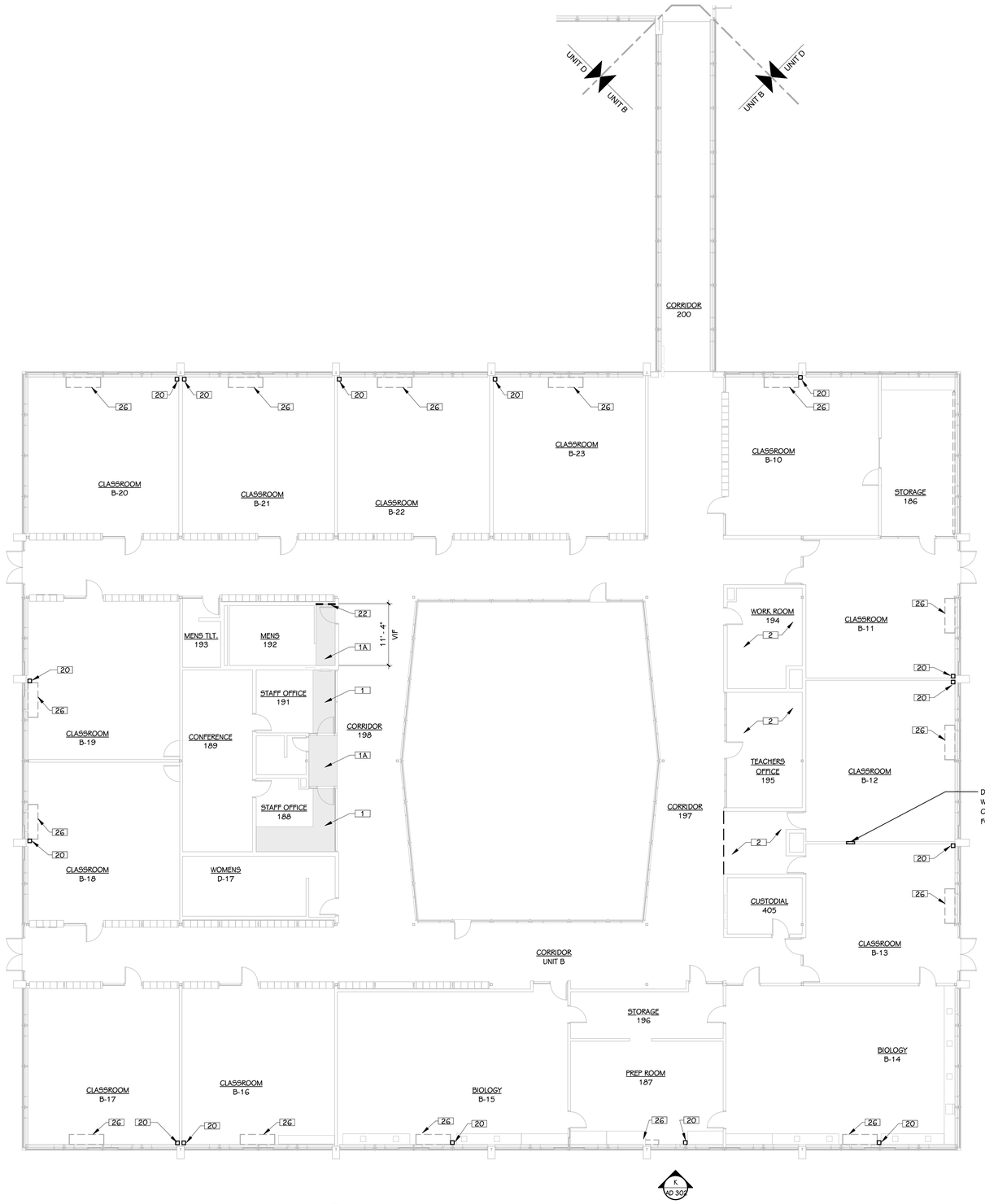
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 DEMOLITION PLAN - UNIT A

DATE
NOVEMBER 22, 2022

SHEET NUMBER
AD 101A

21-807.00



LEVEL 1 DEMOLITION PLAN - UNIT B
3/32" = 1'-0"

KEYED NOTES - DEMOLITION

1	REMOVE CEILING TILE AND GRID AND SALVAGE FOR REUSE. COORDINATE WITH MECHANICAL DRAWINGS.
1A	REMOVE HARD LID CEILING AND SUPPORT STRUCTURE AND PREP FOR NEW. COORDINATE EXTEND WITH MECHANICAL DRAWINGS.
2	REMOVE AND DISCARD CEILING SYSTEM - REFER TO OTHER DRAWINGS FOR CEILING MOUNTED FIXTURE SCOPE. PREP FOR NEW CEILING.
2A	BY OWNER - REMOVE AND DISCARD CEILING - REFER TO OTHER DRAWINGS FOR CEILING MOUNTED FIXTURE SCOPE. PREP FOR NEW CEILING.
3	REMOVE AND DISCARD OF CONVECTOR - REFER TO MECH. DRAWINGS. PREP WALL FOR NEW FINISH.
4	FOR MECH. UNIT REMOVAL REFER TO MECH. DRAWINGS. PREP WALL FOR REFINISH.
5	REMOVE AND DISCARD LOUVER - REFER TO AND COORDINATE WITH MECH. DRAWINGS.
7	REMOVE UNIT VENTILATOR FRONT SCREEN AND COUNTERTOP - SEE MECH. DRAWINGS.
9	REMOVE AND DISCARD OF COUNTERTOP AND FRONT PANEL OVER UV UNIT.
10	REMOVE ROOF BEAM MOUNTED PIPE SYSTEM WELDED TO ROOF BEAMS AND DISCARD, GRIND BEAMS SMOOTH AND PREP FOR NEW PRIME AND PAINT ENTIRE BEAM
11	REMOVE AND DISGARD GLASS UNIT AND PREP FOR NEW LOUVER INSERT INTO EXISTING MULLION SYSTEM.
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29	REMOVE AND SALVAGE TACKBOARD - REFER TO NEW CONSTRUCTION FOR NEW LOCATION
30	REMOVE AND DISCARD SOAP DISPENSER AND PAPER TOWEL DISPENSER

ROOM (B -10)

REMOVE AND SALVAGE ALUM. CHASE. STORE AND PROTECT DURING CONSTRUCTION AND PREP FOR REUSE.

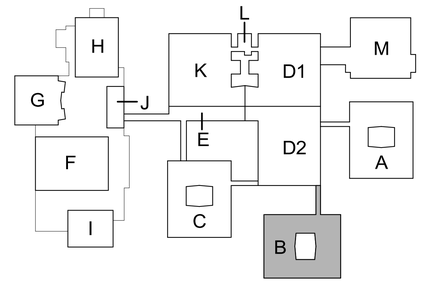
BY OWNER - REMOVE AND DISCARD FLOORING AND ADHESIVE BELOW EXISTING UNIT VENTILATOR BEING REMOVED AND DISPOSED. REMOVE AND DISPOSE OF EXISTING BUILD UP U.V. BASE AND WALL BASE.

ROOM (B -11)

REMOVE AND SALVAGE ALUM. CHASE. STORE AND PROTECT DURING CONSTRUCTION AND PREP FOR REUSE.

BY OWNER - REMOVE AND DISCARD FLOORING AND ADHESIVE BELOW EXISTING UNIT VENTILATOR BEING REMOVED AND DISPOSED. REMOVE AND DISPOSE OF EXISTING BUILD UP U.V. BASE AND WALL BASE.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

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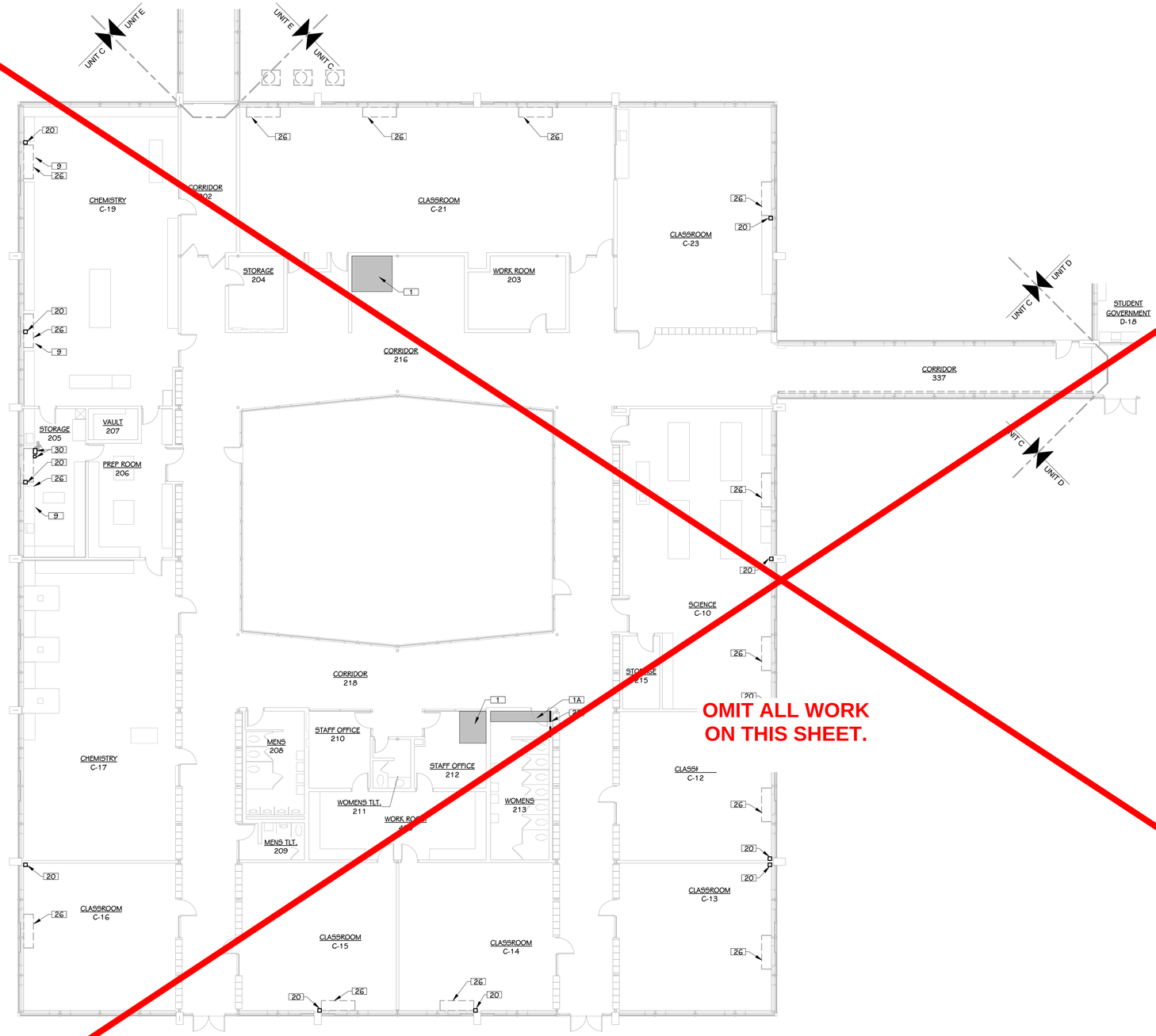
OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 DEMOLITION PLAN - UNIT B

DATE
NOVEMBER 22, 2022

SHEET NUMBER
AD 101B
21-807.00



OMIT ALL WORK ON THIS SHEET.

LEVEL 1 DEMOLITION PLAN - UNIT C
3/32" = 1'-0"

KEYED NOTES - DEMOLITION

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29 REMOVE AND SALVAGE TACKBOARD - REFER TO NEW CONSTRUCTION FOR NEW LOCATION
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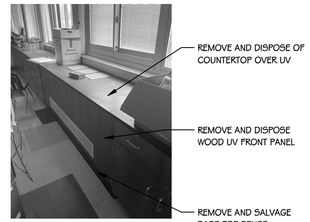
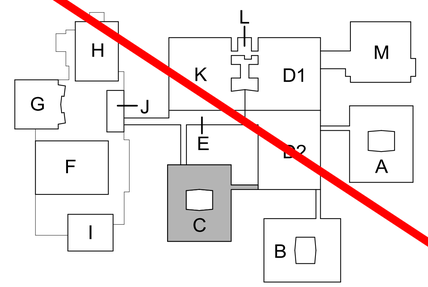


ROOM (C-19)

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

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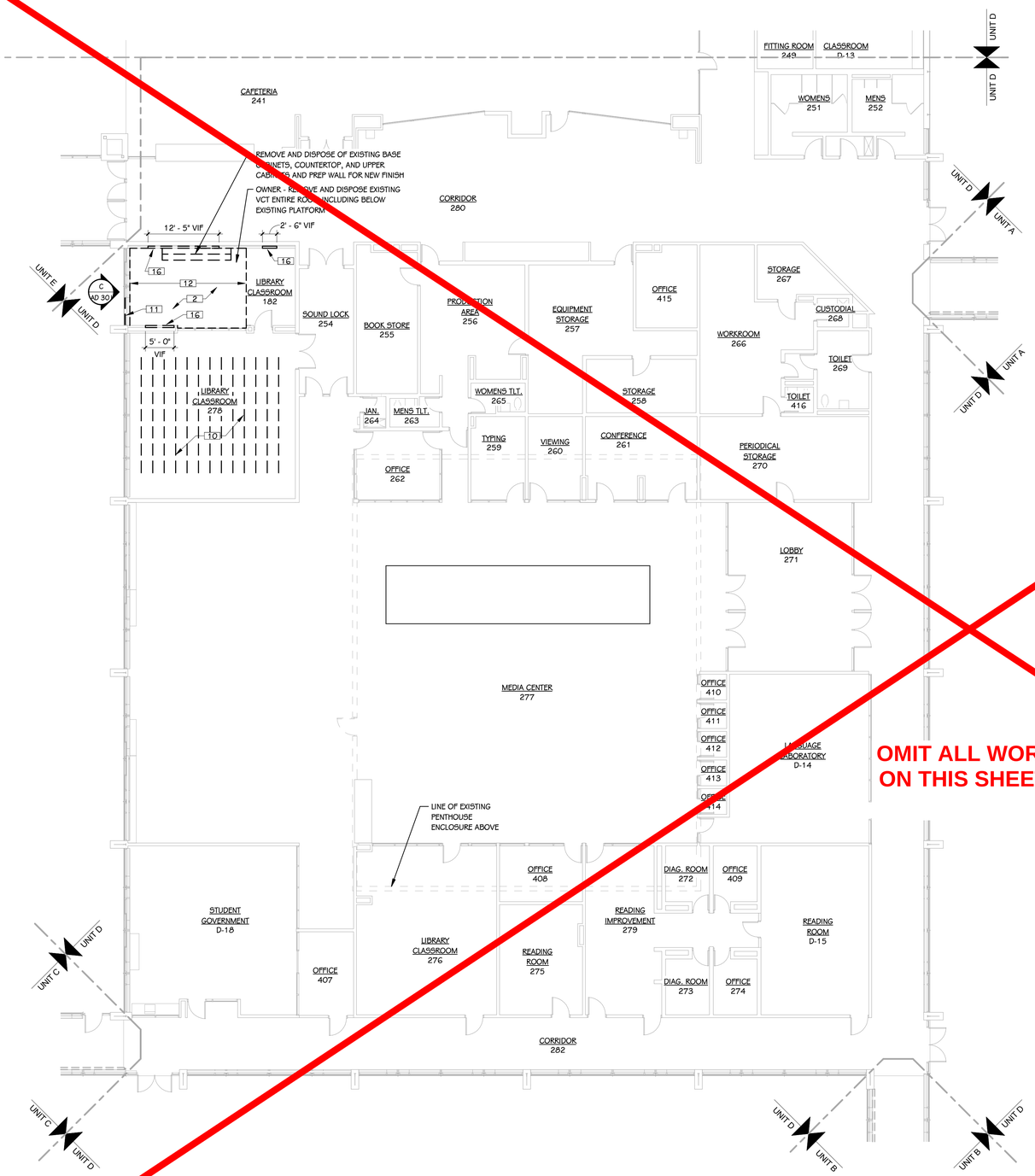
OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 DEMOLITION PLAN - UNIT C

DATE
NOVEMBER 22, 2022

SHEET NUMBER
AD 101C

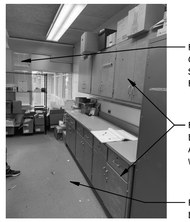
21-807.00



LEVEL 1 DEMOLITION PLAN - UNIT D2

3/32" = 1'-0"

OMIT ALL WORK ON THIS SHEET.



ROOM (182)

REMOVE AND DISPOSE EXISTING GLASS PANEL. REMOVE AND SALVAGE BLIND PANEL AND RETURN TO KPS

REMOVE AND DISPOSE OF EXISTING BASE CABINETS, COUNTERTOP, AND UPPER CABINETS AND PREP WALL FOR NEW FINISH

REMOVE AND DISGARD EXISTING ELEVATED WOOD FLOOR SYSTEM FRAMING, SHEATHING, AND FINISH. PREP FLOOR AND WALLS FOR NEW FINISH.

KEYED NOTES - DEMOLITION

1	REMOVE CEILING TILE AND GRID AND SALVAGE FOR REUSE. COORDINATE WITH MECHANICAL DRAWINGS.
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5	REMOVE AND DISCARD LOUVER - REFER TO AND COORDINATE WITH MECH. DRAWINGS
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30	REMOVE AND DISCARD SOAP DISPENSER AND PAPER TOWEL DISPENSER

REMOVE EXISTING STEEL PIPES. GRIND ROOF BEAMS SMOOTH, AND PREP FOR REFINISH BEAMS. REFER TO ARCHITECTURAL PLANS FOR MORE INFORMATION.

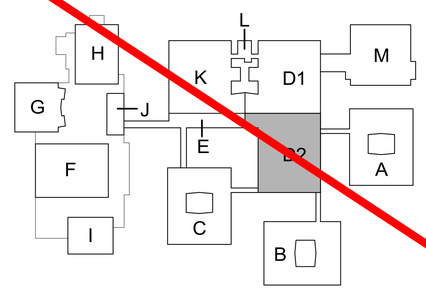
ROOM (278)

REMOVE EXISTING GLASS PANEL AND PREP. OPENING FOR NEW LOUVER INSERT. REMOVE AND SALVAGE BLIND PANEL AND RETURN TO KPS

REMOVE AND DISPOSE EXISTING GLASS PANEL. REMOVE AND SALVAGE BLIND PANEL AND RETURN TO KPS

ROOM (182)

LEVEL 1 - KEY PLAN



KEY PLAN

SCALE: NO SCALE

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OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 DEMOLITION PLAN - UNIT D2

DATE
NOVEMBER 22, 2022

SHEET NUMBER
AD 101D2

21-807.00

KEYED NOTES - DEMOLITION

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30	REMOVE AND DISCARD SOAP DISPENSER AND PAPER TOWEL DISPENSER

MECHANICAL DUCT OPENINGS THROUGH FLOOR SHALL BE WITHIN THIS AREA. OPENINGS SHALL FIT BETWEEN EXISTING CONCRETE FLOOR BEAMS. EXACT OPENING LOCATION AND SIZE SHALL BE COORDINATED IN THE FIELD WITH MECHANICAL REQUIREMENTS.

DEMO EXISTING LOUVER AND PREP. FOR NEW CONSTRUCTION

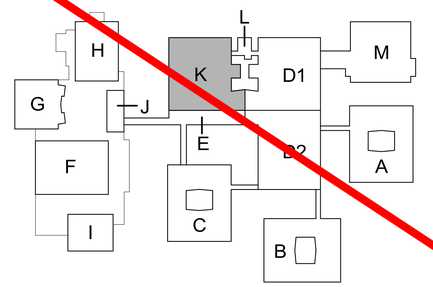
DEMO EXISTING LOUVER AND PREP. FOR NEW CONSTRUCTION

REMOVE CONCRETE BENCH AND TURN OVER TO OWNER

OMIT ALL WORK ON THIS SHEET.

LEVEL 1 DEMOLITION PLAN - UNIT K
3/32" = 1'-0"

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

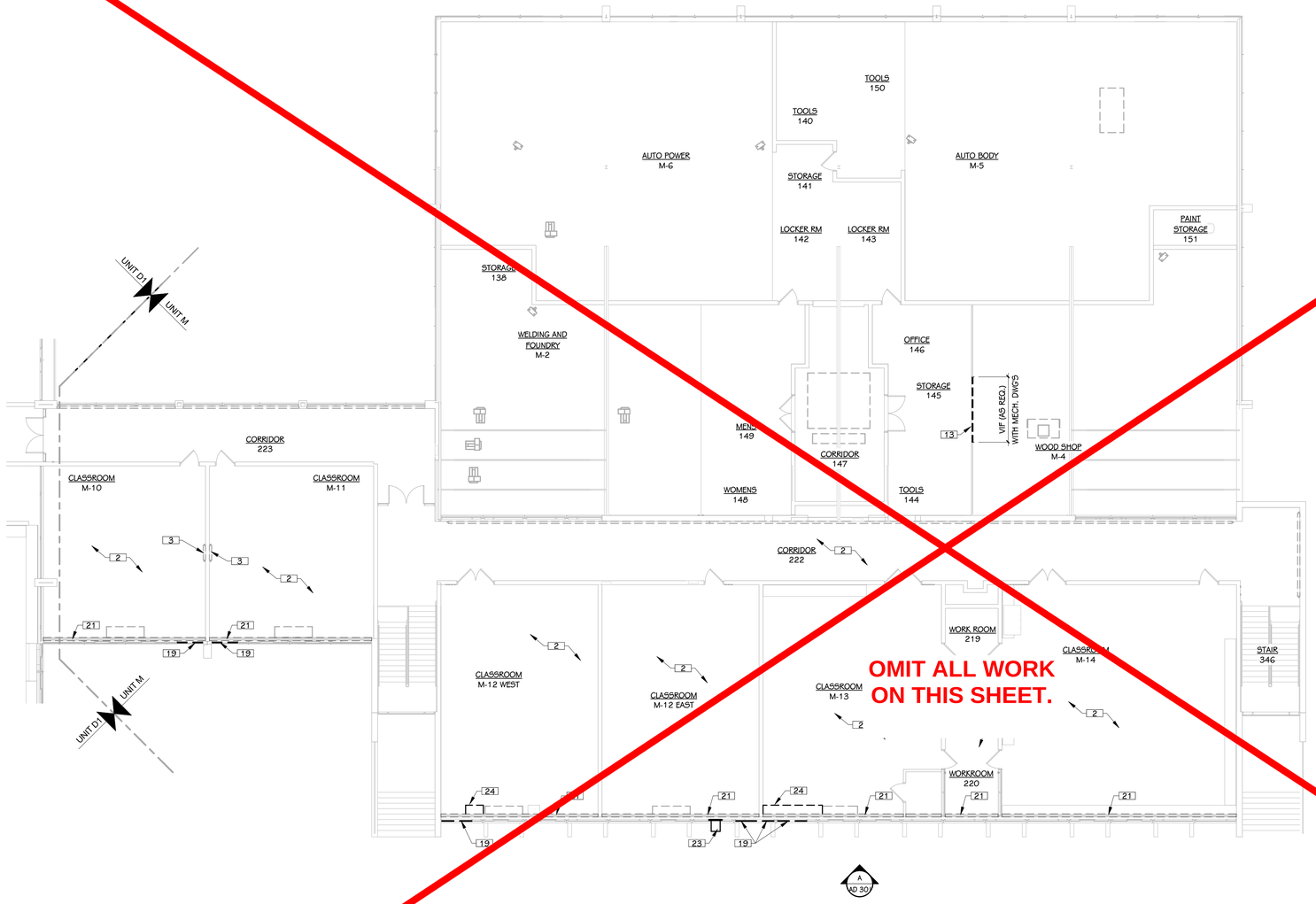
OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 DEMOLITION PLAN - UNIT K

DATE
NOVEMBER 22, 2022

SHEET NUMBER
AD 101K

21-807.00



LEVEL 1 DEMOLITION PLAN - UNIT M

3/32" = 1'-0"

KEYED NOTES - DEMOLITION

1 REMOVE CEILING TILE AND GRID AND SALVAGE FOR REUSE. COORDINATE WITH MECHANICAL DRAWINGS.

1A REMOVE HARD LID CEILING AND SUPPORT STRUCTURE AND PREP FOR NEW. COORDINATE EXTEND WITH MECHANICAL DRAWINGS.

2 REMOVE AND DISCARD CEILING SYSTEM - REFER TO OTHER DRAWINGS FOR CEILING MOUNTED FIXTURE SCOPE. PREP FOR NEW CEILING.

2A BY OWNER - REMOVE AND DISCARD CEILING - REFER TO OTHER DRAWINGS FOR CEILING MOUNTED FIXTURE SCOPE. PREP FOR NEW CEILING.

3 REMOVE AND DISCARD OF CONVECTOR - REFER TO MECH. DRAWINGS. PREP WALL FOR NEW FINISH

4 FOR MECH. UNIT REMOVAL REFER TO MECH. DRAWINGS. PREP WALL FOR REFINISH.

5 REMOVE AND DISCARD LOUVER - REFER TO AND COORDINATE WITH MECH. DRAWINGS.

7 REMOVE UNIT VENTILATOR FRONT SCREEN AND COUNTERTOP - SEE MECH. DRAWINGS.

9 REMOVE AND DISCARD OF COUNTERTOP AND FRONT PANEL OVER UV UNIT

10 REMOVE ROOF BEAM MOUNTED PIPE SYSTEM WELDED TO ROOF BEAM AND DISCARD, GRIND BEAMS SMOOTH AND PREP FOR NEW PRIME AND PAINT ENTIRE BEAM

11 REMOVE AND DISGARD GLASS UNIT AND PREP FOR NEW LOUVER INSERT INTO EXISTING MULLION SYSTEM.

12 REMOVE AND DISGARD ELEVATED WOOD FLOOR SYSTEM, FRAMING, SHEATHING, FLOOR FINISH AND WALL BASE. PREP FLOOR AND WALLS FOR NEW FINISH.

13 REMOVE AND SALVAGE PIPE RAIL SYSTEM FOR REINSTALLATION. STORE AND PROTECT DURING CONSTRUCTION.

15 REMOVE AND DISCARD CASEWORK AND PREP FOR NEW.

16 REMOVE AND DISCARD PORTION OF WALL TO ALLOW FOR DUCT ACCESS

17 REMOVE PORTION OF WALL FULL HEIGHT AS REQUIRED FOR NEW WORK AND PREP FOR NEW WALL.

18 MECHANICAL PIT. PREP PIT FOR INFILL. SEE OTHER DRAWINGS.

19 REMOVE GLASS OUT OF EXISTING STOREFRONT WINDOW FRAME AND PREP FOR NEW CONSTRUCTION - REFER TO INTERIOR DEMO. ELEVATIONS

20 REMOVE AND SALVAGE ALUM. CHASE. STORE AND PROTECT DURING CONSTRUCTION AND PREP FOR REUSE.

21 REMOVE WOOD TRIM PIECE AT CEILING ALONG EXTERIOR WINDOW WALLS AND SALVAGE FOR REUSE. STRIP AND PREP TRIM FOR NEW PRIME AND PAINT.

22 REMOVE AND DISCARD WALL TILE, AND CMU FACE SHELL AND PREP FOR NEW.

23 REMOVE WINDOW AC UNIT AND RETURN TO KPS. REMOVE AND DISCARD TEMPORARY PANEL AROUND AC UNIT.

24 REMOVE AND DISCARD CASEWORK AND COUNTERTOP.

25 REFER TO MECHANICAL DRAWINGS FOR MECHANICAL DEMO SCOPE, PREP OPENING FOR NEW CONSTRUCTION.

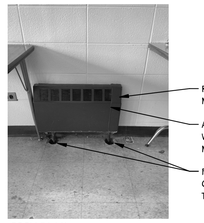
26 BY OWNER - REMOVE AND DISCARD FLOORING AND ADHESIVE BELOW EXISTING UNIT VENTILATOR BEING REMOVED AND DISPOSED. REMOVE AND DISPOSE OF EXISTING BUILD UP U.V. BASE AND WALL BASE.

27 REMOVE AND SALVAGE CASEWORK, COUNTERTOP, AND BASE AND PREP FOR REINSTALLATION.

28 REMOVE AND DISCARD FLOOR SLAB AND PREP FOR NEW DUCTWORK - REFER TO STRUCTURAL AND MECHANICAL AND COORD. FOR FINAL SIZE AND LOCATION. FINAL LOCATION SHALL BE BETWEEN EXISTING STRUCTURAL CONCRETE FLOOR BEAMS.

29 REMOVE AND SALVAGE TACKBOARD - REFER TO NEW CONSTRUCTION FOR NEW LOCATION

30 REMOVE AND DISCARD SOAP DISPENSER AND PAPER TOWEL DISPENSER

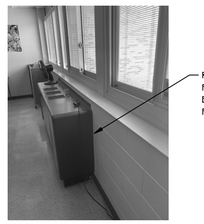


REMOVE MECH. UNIT - SEE MECHANICAL DRAWINS.

AT REMOVED MECH. UNIT PREP WALL, PRIME AND PAINT TO MATCH EXISTING.

FILL HOLES IN FLOOR WITH CONCRETE AND PATCH FLOOR TO MATCH EXISTING

ROOM (M-11)



REMOVE UV AND PREP WALL FOR NEW. PRIME AND PAINT ALL EXPOSED DAMAGED WALL FINISH.

ROOM (M-11)

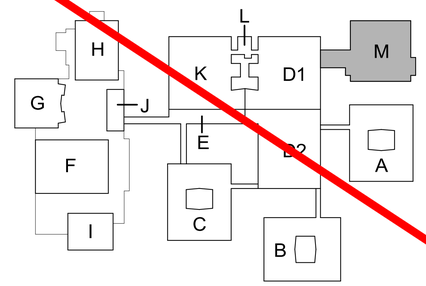
REMOVE AND SALVAGE A SECTION OF THE PIPE RAIL SYSTEM FOR REINSTALLATION. STORE AND PROTECT DURING CONSTRUCTION. PRIME AND PAINT AFTER RAILING IS REINSTALLED, GRIND ALL NEW WELDS SMOOTH

ROOM (M-5)

REMOVE AND REPLACE EXISTING UV. PRIME AND PAINT WALL AROUND REPLACED UNIT AS REQUIRED.

ROOM (M-12)

LEVEL 1 - KEY PLAN



KEY PLAN

SCALE: NO SCALE

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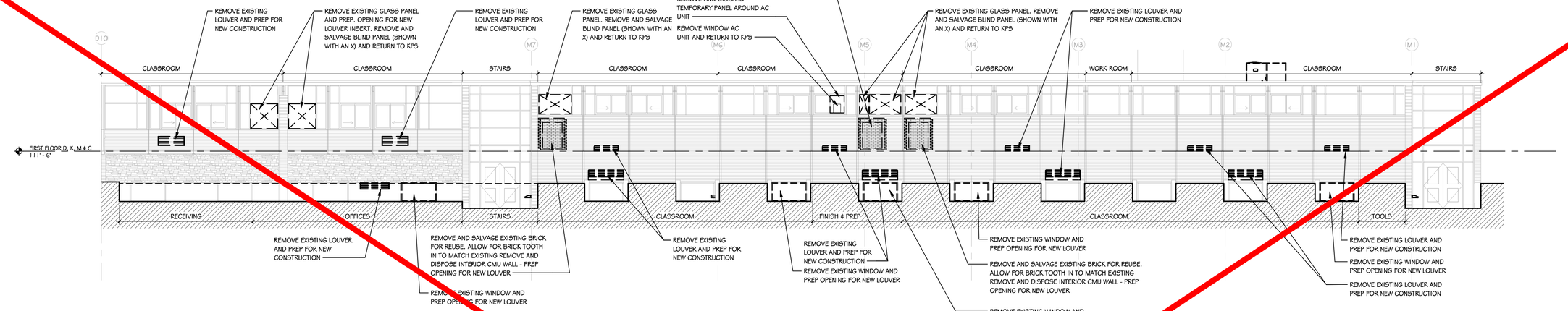
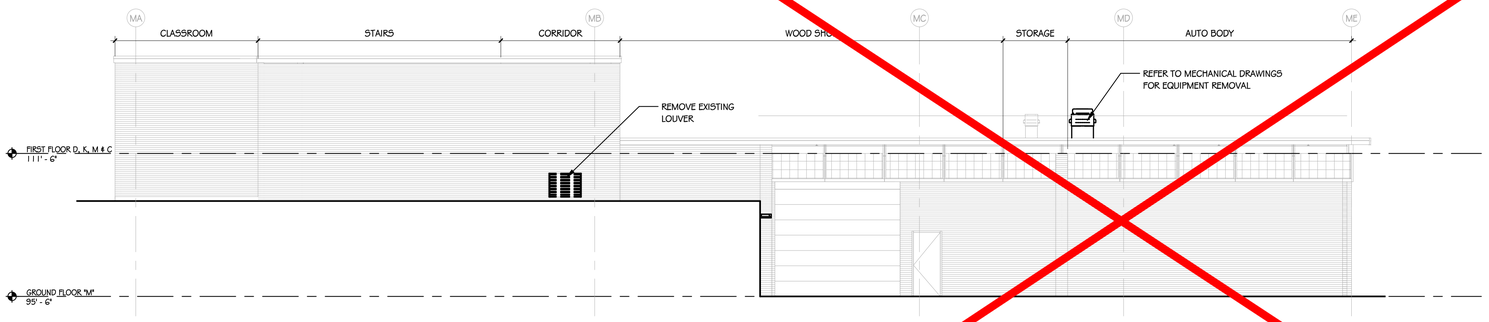
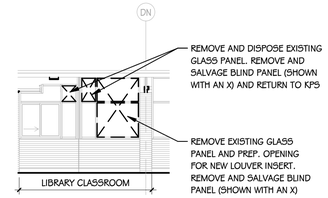


A AD 301 **UNIT M - SOUTH DEMO ELEVATION**
1/8" = 1'-0"

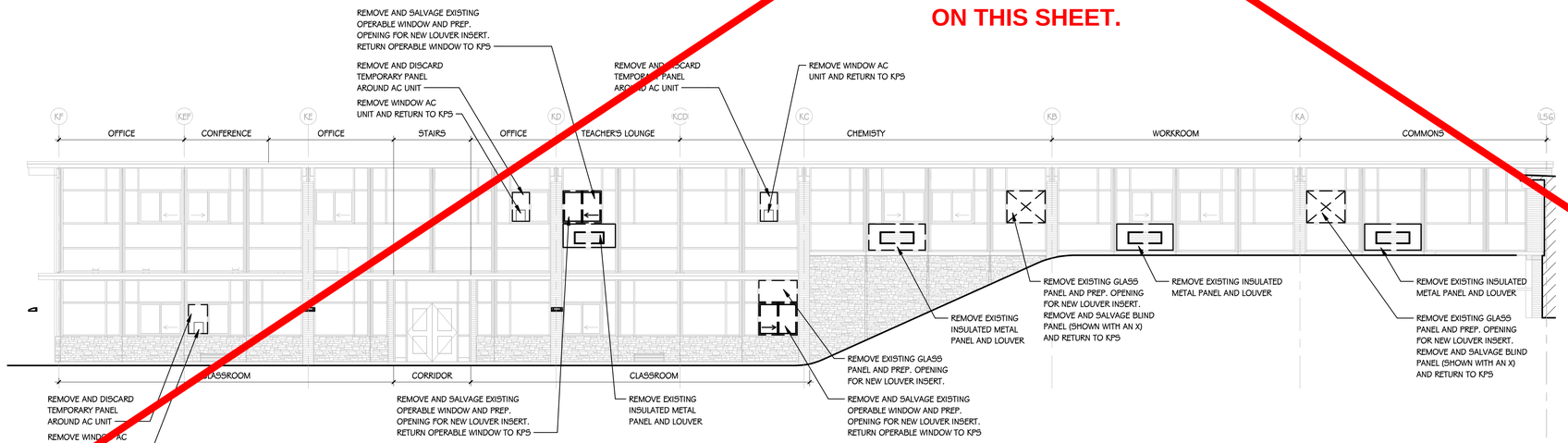


B AD 301 **UNIT M - EAST DEMO ELEVATION**
1/8" = 1'-0"



C AD 301 **UNIT D - EXTERIOR DEMO ELEVATION**
1/8" = 1'-0"

OMIT ALL WORK ON THIS SHEET.



D AD 301 **UNIT K - WEST DEMO ELEVATION**
1/8" = 1'-0"

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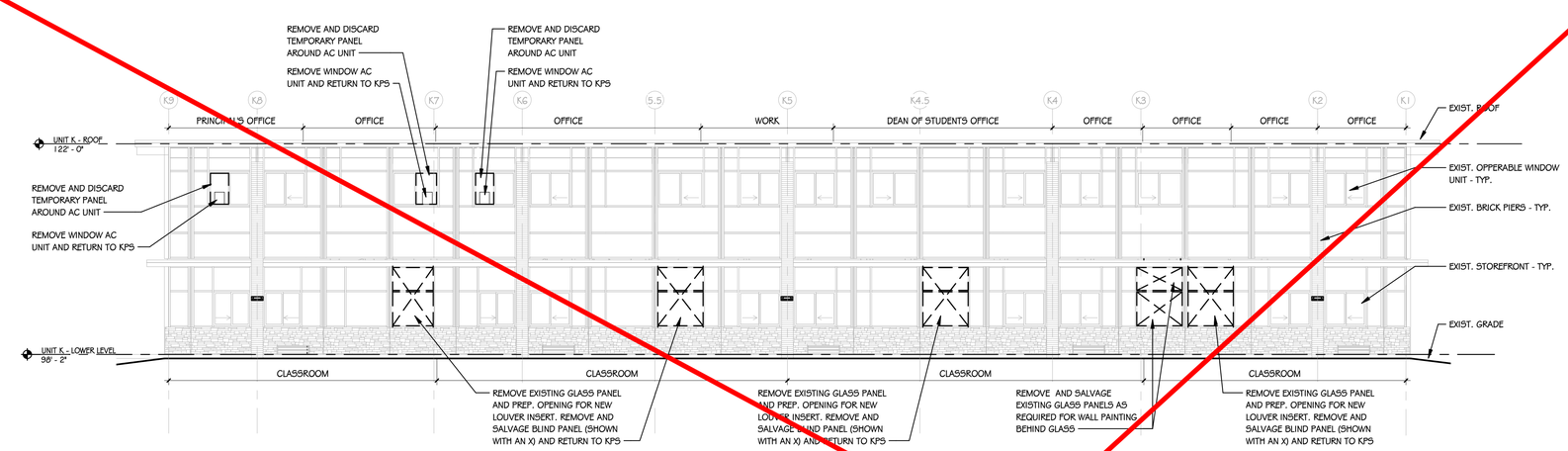
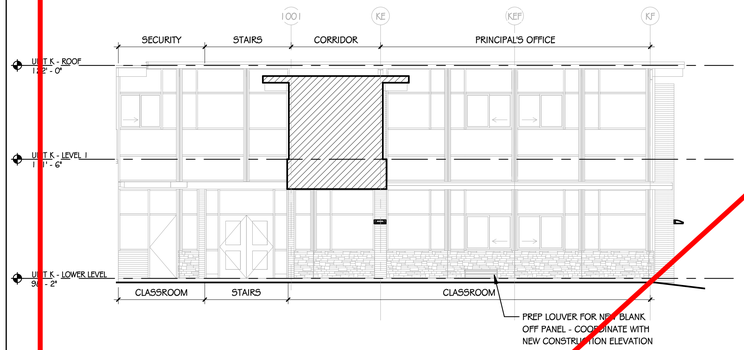


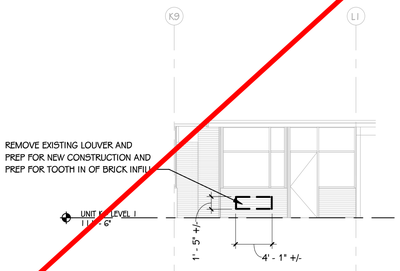
E / AD 302 — UNIT K - NORTH DEMO ELEVATION
1/8" = 1'-0"



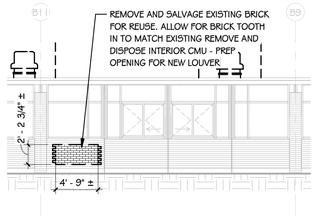
F / AD 302 — UNIT K - EAST DEMO ELEVATION
1/8" = 1'-0"

G / AD 302 — UNIT K - EAST DEMO ELEVATION - MECH. RM.
1/8" = 1'-0"

H / AD 302 — PARTIAL EXTERIOR DEMO ELEVATION
1/8" = 1'-0"



J / AD 302 — PARTIAL EXTERIOR DEMO ELEVATION
1/8" = 1'-0"



K / AD 302 — PARTIAL EXTERIOR DEMO ELEVATION - UNIT B
1/8" = 1'-0"

Project B project scope

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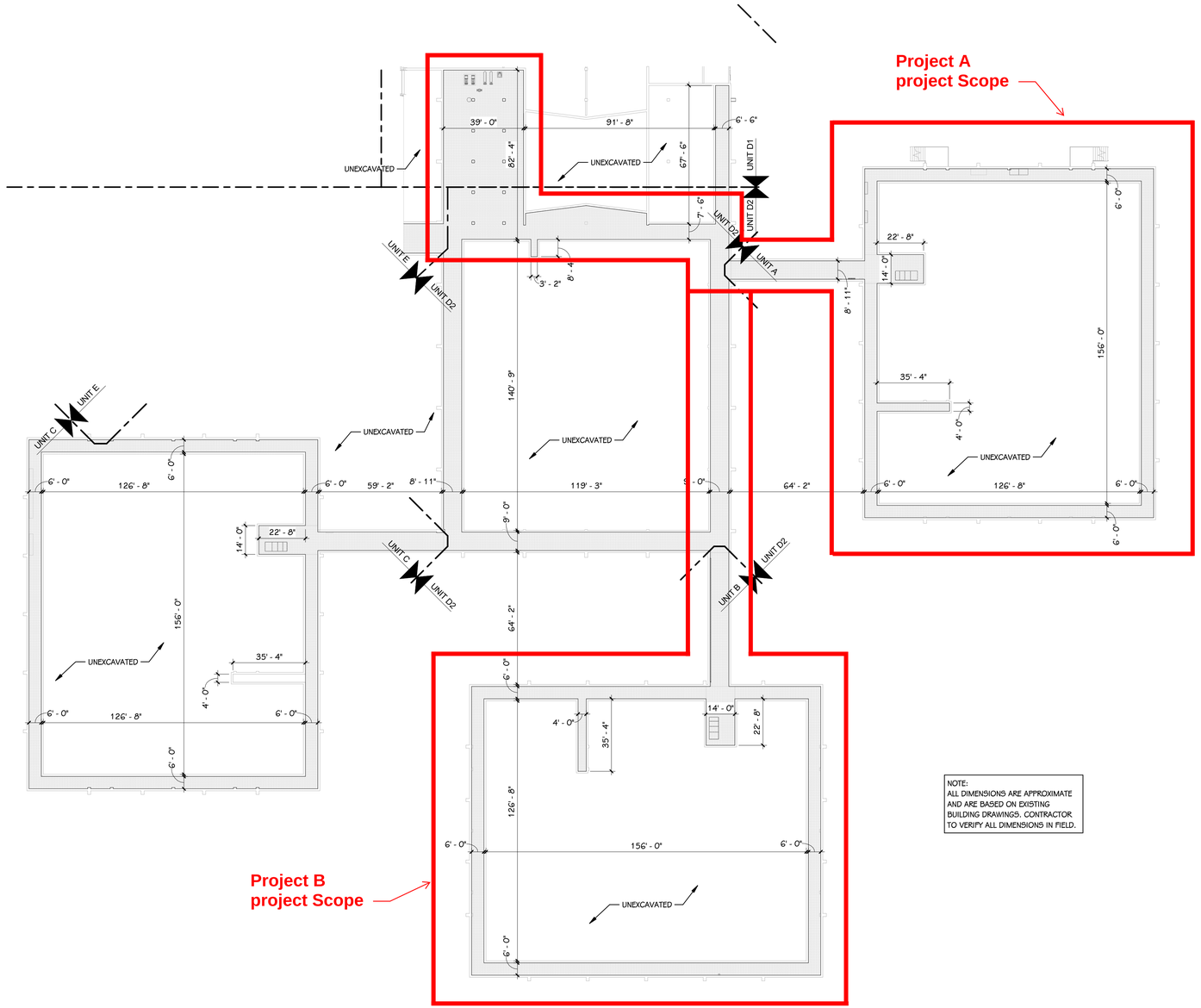


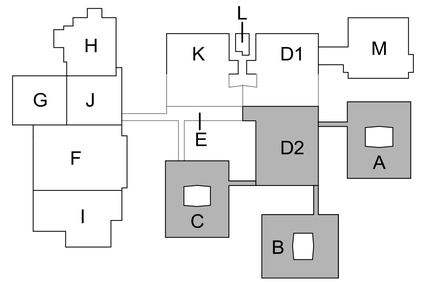
NOTE:
ALL DIMENSIONS ARE APPROXIMATE AND ARE BASED ON EXISTING BUILDING DRAWINGS. CONTRACTOR TO VERIFY ALL DIMENSIONS IN FIELD.

TUNNEL PLAN - UNITS A, B, C, & D2
1" = 30'-0"

KEYED NOTES - NEW CONSTRUCTION

1 WHERE REQUIRED PATCH, PRIME AND PAINT WALL AT REMOVED MECH. EQUIPMENT TO MATCH EXISTING COORDINATE WITH NEW EQUIPMENT.
2 FILL EXISTING CORED HOLES IN FLOOR WITH CONCRETE AND PATCH FLOOR TO MATCH EXISTING.
3 PATCH, PRIME AND PAINT WALL TO MATCH EXISTING.
4 NEW 2X2 ACP CEILING SYSTEM, INSTALL AT EXISTING CEILING HEIGHT.
5 PATCH PRIME AND PAINT WALL AT REMOVED MECH. EQUIPMENT AND REMOVED CASEWORK. PAINT TO MATCH EXISTING.
6 PROVIDE A CLEAR ANODIZED ALUM. CHASE UP ALONG THE SIDE OF THE COLUMN FULL HEIGHT. SIZE TO BE MINIMUM REQUIRED FOR MECHANICAL PIPES. MATCH EXISTING CHASES. FULL HEIGHT TO ABOVE CEILING.
7 INSTALL SALVAGED ALUM. CHASE ASSEMBLY UP ALONG THE WALL. INSTALL IN EXISTING LOCATION.
8 INSTALL SALVAGED CEILING TILE AND GRID AT EXISTING HEIGHT. ALLOW FOR NEW TILE AND GRID (TO MATCH EXISTING) AT DAMAGED TILES OR GRID.
9 INFILL EXISTING OPENING WITH BRICK AND CMU. BRICK TO MATCH EXISTING.
10 NEW EXHAUST THROUGH ROOF (SEE MECH. DRAWINGS). PATCH ROOF AND PROVIDE STEEL FRAMING AROUND NEW ROOF OPENING. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION.
11 AT EACH SIDE OF NEW HORIZ. UV PROVIDE A PRIME AND PAINTED METAL FILLER PANEL (TOP AND FRONT) TO MATCH AND TIE INTO UV. SECURE TO UV AND ADJOINING CASEWORK (BY MECHANICAL). RPOVIDE P-LAM. END PANEL AT NEWLY EXPOSED CASEWORK END (MATCH EXISTING)
12 PRIME AND PAINT ALL EXPOSED ROOF BEAMS IN ROOM.
13 PREP, PRIME, PAINT AND REINSTALL SALVAGED PIPE RAILING SYSTEM. GRIND ALL WELDS SMOOTH
14 PRIME AND PAINT ALL WALLS TO MATCH EXISTING FULL HEIGHT.
15 NEW METAL CASEWORK - SEE INTERIOR DRAWINGS
16 REBUILD WALL AT REMOVED MTL. STUD WALL AND GYPSUM BOARD WITH NEW 5/8" GYPSUM BOARD OVER MTL STUD FRAMING TO MATCH EXISTING. PRIME AND PAINT ENTIRE WALL TO MATCH EXISTING.
17 CAP DUCTS IN VERTICAL PIT WALL WITH 8" CONCRETE DOWELED INTO THE SUROUNDING WALLS. FILL PIT WITH SAND AND FINISH WITH 4" OF CONCRETE SLAB DOWLED INTO THE ADJOINING EXISTING SLAB. FOR SLAB AND WALL - DOWEL ALL SIDES WITH #4 DOWELS X 12" LONG AT 8" O.C. DRILL AND EPOXY WITH HILTI HIT HY 200 WITH 4" EMBEDMENT
18 5/8" IMPACT RESISTANT GYPSUM BOARD BULKHEAD OVER 3 5/8" METAL STUD FRAMING AT 16" O.C.
19 NEW 4" CMU WALL TO MATCH SURROUNDING EXISTING WALL. TOOTH IN, PRIME AND PAINT TO MATCH EXISTING.
20 AT REMOVED GLASS PANEL PROVIDE NEW CLEAR ANODIZED LOUVER INSERT, PROVIDE INSULATED METAL BLANK OFF PANEL AT ANY UNUSED LOUVER AREAS - SEE MECH. DWG'S
21 IN EXISTING LOUVER OPENING INSTALL 3" INSULATED METAL PANEL (BLACK) TIGHT AGAINST LOUVER AND TIGHT IN OPENING. SECURE IN PLACE AND CAULK ALL SIDES. AT INSIDE FLUSH WITH INTERIOR FACE OF EXISTING CMU WALL ADD 4" CMU INFILL TOOTH IN ALL SIDES.
22 INSTALL SALVAGED WOOD TRIM PRIME AND PAINT TO MATCH EXISTING. SEE DETAILS.
23 MINOR FLOOR PATCHING REQUIRED AT REMOVED UV'S, NEW CASEWORK, CHASE, OR OTHER MINOR FLOOR CONFIGURATION CHANGES. MATERIAL AVAILABLE OUT OF OWNER ATTIC STOCK.
24 BREAK METAL CLOSURE PIECE WITH HEMMED EDGES, GROUND SMOOTH, AND ROUNDED CORNERS, AND PAINTED TO MATCH NEW UV UNIT. ATTACH TO UV UNIT AND WINDOW FRAME AS REQUIRED. SIZE AND SHAPE TO BE CONFIRMED IN FIELD. HEIGHT TO BE FULL HEIGHT OF EXPOSED PORTION OF BLANK OFF PANEL.
25 EXISTING MECHANICAL ROOF EQUIPMENT TO REMAIN - SEE MECHANICAL DRAWINGS.
26 NEW MECHANICAL ROOF EQUIPMENT ON EXISTING ROOF CURB FLASH WEATHER TIGHT - SEE MECHANICAL DRAWINGS.
28 NEW MECHANICAL CONDENSING UNITS SET ON ROOF. WITH NEW PIPE PENETRATIONS THROUGH ROOF FLASHED WEATHER TIGHT - SEE MECHANICAL DRAWINGS. DEMO EXISTING ROOF AS REQUIRED.
29 NEW SUSPENDED PLASTER CEILING AT EXISTING HEIGHT. PRIME AND PAINT TO MATCH EXISTING.
30 AT REMOVED DIFUSER OPENING, PROVIDE METAL STUD FRAMING, GYPSUM BOARD AND PRIME AND PAINT TO MATCH EXISTING. PRIME AND PAINT ENTIRE WALL TO ABOVE CEILING TO MATCH EXISTING.
31 NEW EXHAUST FAN / RELIEF HOOD ON EXISTING ROOF CURB FLASH WEATHER TIGHT
31A NEW EXHAUST FAN/RELIEF HOOD OR OTHER MECHANICAL EQUIPMENT ON NEW ROOF CURB. DEMO EXISTING ROOF AS REQUIRED. PATCH NEW CURB INTO EXISTING ROOF WEATHER TIGHT - SEE MECHANICAL DRAWINGS. SEE ROOF CURB AND PENETRATION DETAILS THIS SHEET.
32 REINSTALL SALVAGED CASEWORK AND COUNTERTOP
33 EXISTING UV TO BE REMOVED AND INSTALL NEW UV. REINSTALL EXISTING SALVAGED COVER - SEE PICTURE
34 INSTALL NEW PRIMED AND PAINTED WOOD TRIM TO MATCH EXISTING. SEE DETAILS.
35 NEW ACCESS PANELS 18"x18" - PRIME AND PAINT TO MATCH CEILING - COORD. FINAL LOCATION WITH MECHANICAL

LOWER LEVEL - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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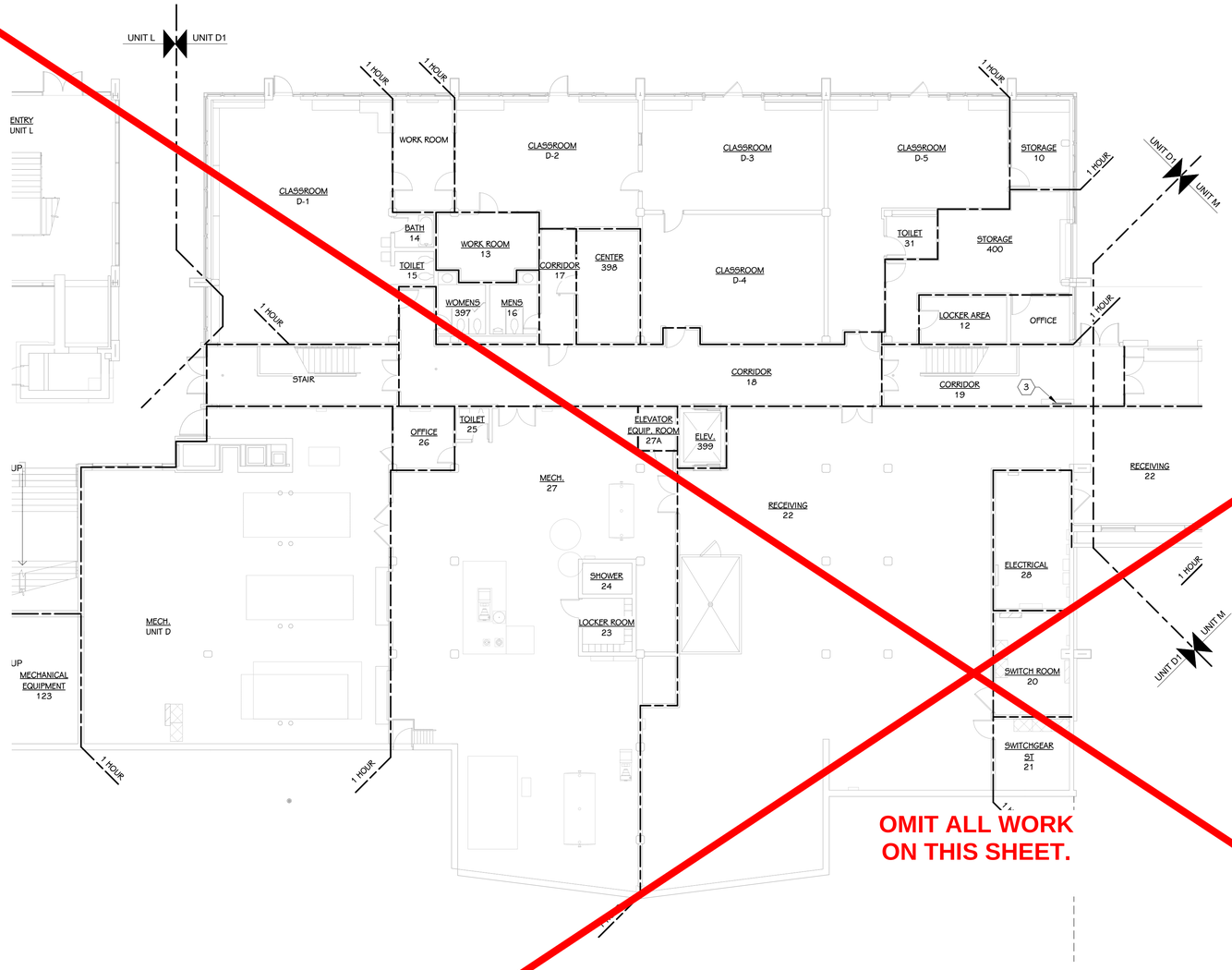

OMIT ALL WORK ON THIS SHEET.

LOWER LEVEL PLAN - UNIT D1
3/32" = 1'-0"

KEYED NOTES - NEW CONSTRUCTION

1. WHERE REQUIRED PATCH, PRIME AND PAINT WALL AT REMOVED MECH. EQUIPMENT TO MATCH EXISTING COORDINATE WITH NEW EQUIPMENT.
2. FILL EXISTING CORED HOLES IN FLOOR WITH CONCRETE AND PATCH FLOOR TO MATCH EXISTING.
3. PATCH, PRIME AND PAINT WALL TO MATCH EXISTING.
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10. NEW EXHAUST THROUGH ROOF (SEE MECH. DRAWINGS). PATCH ROOF AND PROVIDE STEEL FRAMING AROUND NEW ROOF OPENING. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION.
11. AT EACH SIDE OF NEW HORIZ. UV PROVIDE A PRIME AND PAINTED METAL FILLER PANEL (TOP AND FRONT) TO MATCH AND TIE INTO UV. SECURE TO UV AND ADJOINING CASEWORK (BY MECHANICAL). RPOVIDE P-LAM. END PANEL AT NEWLY EXPOSED CASEWORK END (MATCH EXISTING)
12. PRIME AND PAINT ALL EXPOSED ROOF BEAMS IN ROOM.
13. PREP, PRIME, PAINT AND REINSTALL SALVAGED PIPE RAILING SYSTEM. GRIND ALL WELDS SMOOTH
14. PRIME AND PAINT ALL WALLS TO MATCH EXISTING FULL HEIGHT.
15. NEW METAL CASEWORK - SEE INTERIOR DRAWINGS
16. REBUILD WALL AT REMOVED MTL. STUD WALL AND GYPSUM BOARD WITH NEW 5/8" GYPSUM BOARD OVER MTL STUD FRAMING TO MATCH EXISTING. PRIME AND PAINT ENTIRE WALL TO MATCH EXISTING.
17. CAP DUCTS AT VERTICAL PIT WALL WITH 8" CONCRETE DOWELED INTO THE SURROUNDING WALLS. FILL PIT WITH SAND AND FINISH WITH 4" OF CONCRETE SLAB DOWLED INTO THE ADJOINING EXISTING SLAB. FOR SLAB AND WALL DOWEL ALL SIDES WITH #4 DOWELS X 12" LONG AT 8" O.C. DRILL AND EPOXY WITH HILTI HIT HY 200 WITH 4" EMBEDMENT
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32. REINSTALL SALVAGED CASEWORK AND COUNTERTOP
33. EXISTING UV TO BE REMOVED AND INSTALL NEW UV. REINSTALL EXISTING SALVAGED COVER - SEE PICTURE
34. INSTALL NEW PRIMED AND PAINTED WOOD TRIM TO MATCH EXISTING. SEE DETAILS.
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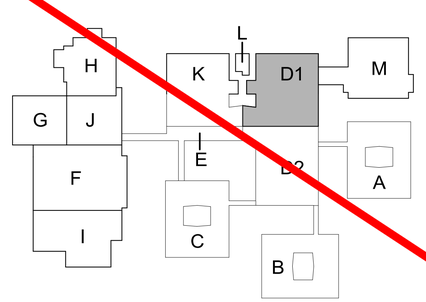

KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

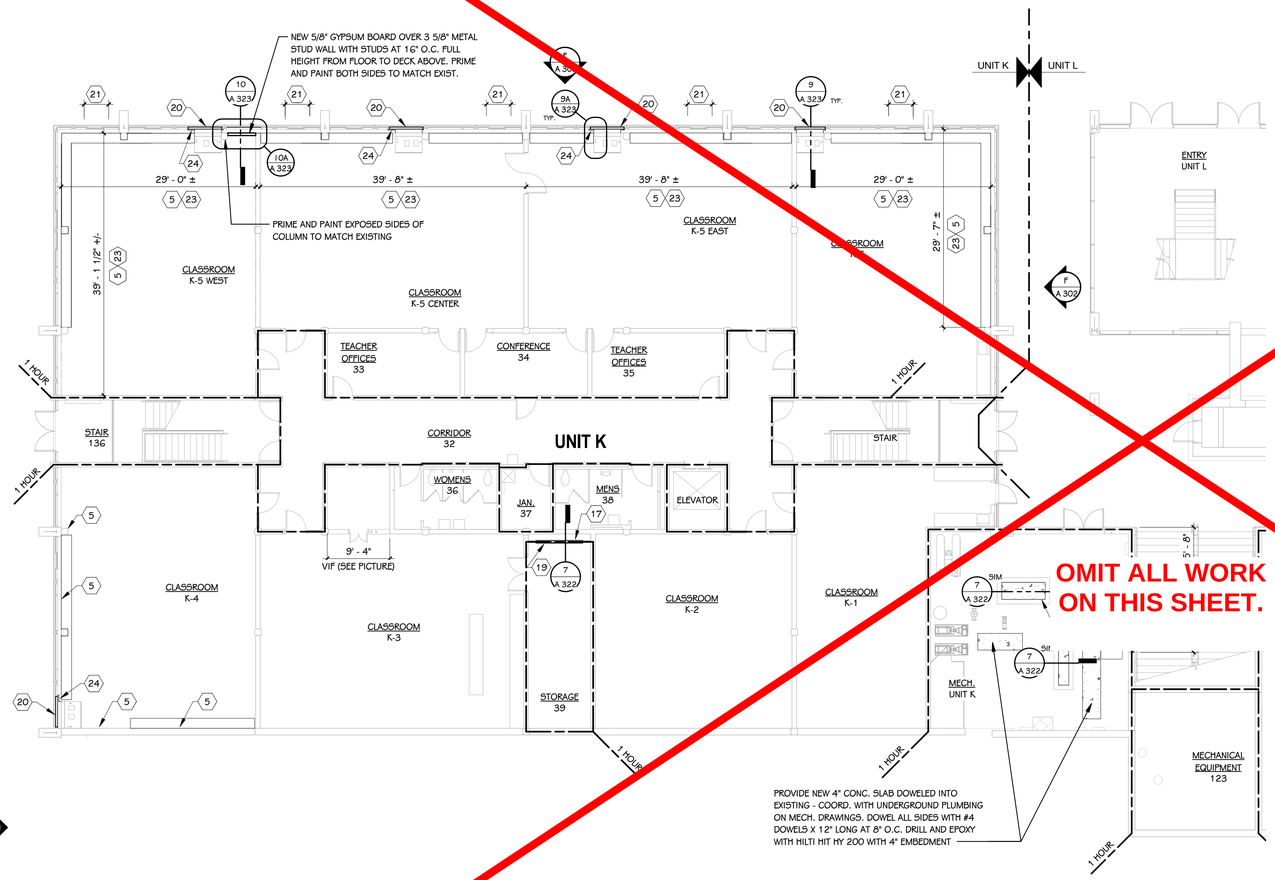
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL FLOOR PLAN - UNIT D1

DATE
NOVEMBER 22, 2022

SHEET NUMBER
A100D1
21-807.00



LOWER LEVEL PLAN - UNIT K
3/32" = 1'-0"

IN EXISTING LOUVER OPENING INSTALL 3" INSULATED METAL PANEL (BLACK) TIGHT AGAINST LOUVER AND TIGHT IN OPENING. SECURE IN PLACE AND CAULK ALL SIDES. AT INSIDE FLUSH WITH INTERIOR FACE OF EXISTING CMU WALL ADD 4" CMU INFILL.

ROOMS (K-5 EAST & K-6)

PATCH AND PAINT WALL ABOVE NEW TO BE INSTALLED METAL CASEWORK.

REMOVE AND DISCARD EXISTING HORIZ. UV. - SEE MECH. DRAWINGS.

ROOM (K-6)

REMOVE AND DISGARD EXISTING CEILING AND INSTALL NEW.

ROOM (K-6)

AT REMOVED VERTICAL CEILING SYSTEM INSTALL NEW 3 5/8" METAL STUD WALL WITH STUDS AT 16" O.C. COVERED WITH 5/8" TYPE 'X' GYPSUM BOARD. ALIGN FRONT OF GYPSUM WITH SURROUNDING CMU AND RETURN BACK TO DOOR AND WINDOW FRAME. CAULK TO EXISTING CMU.

ROOM (K-3)

KEYED NOTES - NEW CONSTRUCTION

1. WHERE REQUIRED PATCH, PRIME AND PAINT WALL AT REMOVED MECH. EQUIPMENT TO MATCH EXISTING COORDINATE WITH NEW EQUIPMENT.
2. FILL EXISTING CORED HOLES IN FLOOR WITH CONCRETE AND PATCH FLOOR TO MATCH EXISTING.
3. PATCH, PRIME AND PAINT WALL TO MATCH EXISTING.
4. NEW 2X2 ACP CEILING SYSTEM, INSTALL AT EXISTING CEILING HEIGHT.
5. PATCH PRIME AND PAINT WALL AT REMOVED MECH. EQUIPMENT AND REMOVED CASEWORK. PAINT TO MATCH EXISTING.
6. PROVIDE A CLEAR ANODIZED ALUM. CHASE UP ALONG THE SIDE OF THE COLUMN FULL HEIGHT. SIZED TO BE MINIMUM REQUIRED FOR MECHANICAL PIPES. MATCH EXISTING CHASES. FULL HEIGHT TO ABOVE CEILING.
7. INSTALL SALVAGED ALUM. CHASE ASSEMBLY UP ALONG THE WALL. INSTALL IN EXISTING LOCATION.
8. INSTALL SALVAGED CEILING TILE AND GRID AT EXISTING HEIGHT. ALLOW FOR NEW TILE AND GRID (TO MATCH EXISTING) AT DAMAGED TILES OR GRID.
9. INFILL EXISTING OPENING WITH BRICK AND CMU. BRICK TO MATCH EXISTING.
10. NEW EXHAUST THROUGH ROOF (SEE MECH. DRAWINGS). PATCH ROOF AND PROVIDE STEEL FRAMING AROUND NEW ROOF OPENING. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION.
11. AT EACH SIDE OF NEW HORIZ. UV PROVIDE A PRIME AND PAINTED METAL FILLER PANEL (TOP AND FRONT) TO MATCH AND TIE INTO UV. SECURE TO UV AND ADJOINING CASEWORK (BY MECHANICAL). RPOVIDE P-LAM. END PANEL AT NEWLY EXPOSED CASEWORK END (TO MATCH EXISTING)
12. PRIME AND PAINT ALL EXPOSED ROOF BEAMS IN ROOM.
13. PREP, PRIME, PAINT AND REINSTALL SALVAGED PIPE RAILING SYSTEM. GRIND ALL WELDS SMOOTH
14. PRIME AND PAINT ALL WALLS TO MATCH EXISTING FULL HEIGHT.
15. NEW METAL CASEWORK - SEE INTERIOR DRAWINGS
16. REBUILD WALL AT REMOVED MTL. STUD WALL AND GYPSUM BOARD WITH NEW 5/8" GYPSUM BOARD OVER MTL STUD FRAMING TO MATCH EXISTING. PRIME AND PAINT ENTIRE WALL TO MATCH EXISTING.
17. CAP DUCTS AT VERTICAL PIT WALL WITH 8" CONCRETE DOWELED INTO THE SURROUNDING WALLS. FILL PIT WITH SAND AND FINISH WITH 4" OF CONCRETE SLAB DOWLED INTO THE ADJOINING EXISTING SLAB. FOR SLAB AND WALL DOWEL ALL SIDES WITH #4 DOWELS X 12" LONG AT 8" O.C. DRILL AND EPOXY WITH HILTI HIT HY 200 WITH 4" EMBEDMENT
18. 5/8" IMPACT RESISTANT GYPSUM BOARD BULKHEAD OVER 3 5/8" METAL STUD FRAMING AT 16" O.C.
19. NEW 4" CMU WALL TO MATCH SURROUNDING EXISTING WALL. TOOTH IN, PRIME AND PAINT TO MATCH EXISTING.
20. AT REMOVED GLASS PANEL PROVIDE NEW CLEAR ANODIZED LOUVER INSERT, PROVIDE INSULATED METAL BLANK OFF PANEL AT ANY UNUSED LOUVER AREAS - SEE MECH. DWGS
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22. INSTALL SALVAGED WOOD TRIM PRIME AND PAINT TO MATCH EXISTING. SEE DETAILS.
23. MINOR FLOOR PATCHING REQUIRED AT REMOVED UV'S, NEW CASEWORK, CHASE, OR OTHER MINOR FLOOR CONFIGURATION CHANGES. MATERIAL AVAILABLE OUT OF OWNER ATTIC STOCK.
24. BREAK METAL CLOSURE PIECE WITH HEMMED EDGES, GROUND SMOOTH, AND ROUNDED CORNERS, AND PAINTED TO MATCH NEW UV UNIT. ATTACH TO UV UNIT AND WINDOW FRAME AS REQUIRED. SIZE AND SHAPE TO BE CONFIRMED IN FIELD. HEIGHT TO BE FULL HEIGHT OF EXPOSED PORTION OF BLANK OFF PANEL.
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28. NEW MECHANICAL CONDENSING UNITS SET ON ROOF. WITH NEW PIPE PENETRATIONS THROUGH ROOF FLASHED WEATHER TIGHT - SEE MECHANICAL DRAWINGS. DEMO EXISTING ROOF AS REQUIRED.
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32. REINSTALL SALVAGED CASEWORK AND COUNTERTOP
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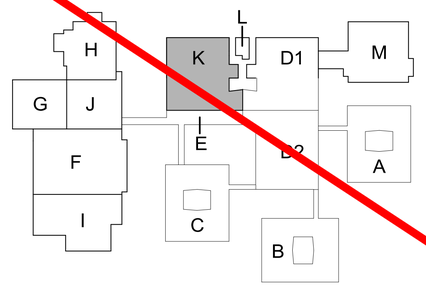
34. INSTALL NEW PRIMED AND PAINTED WOOD TRIM TO MATCH EXISTING. SEE DETAILS.
35. NEW ACCESS PANELS 18"x18" - PRIME AND PAINT TO MATCH CEILING - COORD. FINAL LOCATION WITH MECHANICAL

LOWER LEVEL - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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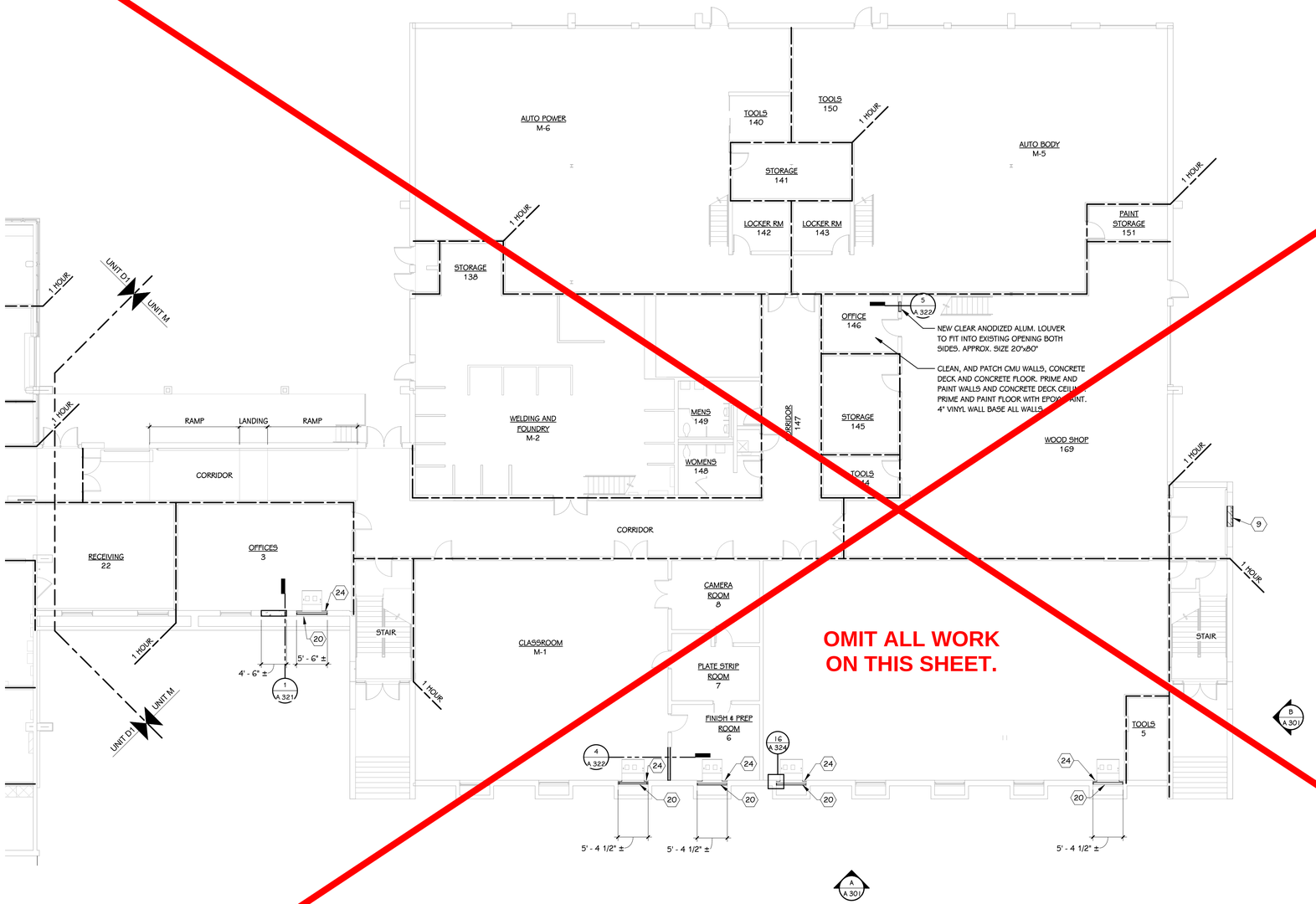

OMIT ALL WORK ON THIS SHEET.

LOWER LEVEL PLAN - UNIT M
3/32" = 1'-0"

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11 AT EACH SIDE OF NEW HORIZ. UV PROVIDE A PRIME AND PAINTED METAL FILLER PANEL (TOP AND FRONT) TO MATCH AND TIE INTO UV. SECURE TO UV AND ADJOINING CASEWORK (BY MECHANICAL). PROVIDE P-LAM. END PANEL AT NEWLY EXPOSED CASEWORK END TO MATCH EXISTING)
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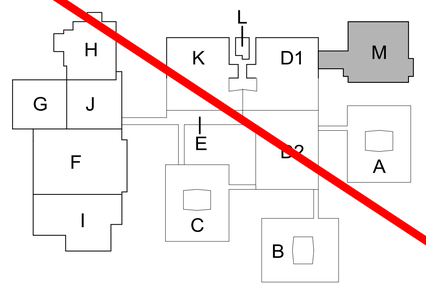
ROOM (160 AND 165)

PRIME AND PAINT SECTION OF WALL FULL HEIGHT AT REMOVED MECH. UNIT.

LOWER LEVEL - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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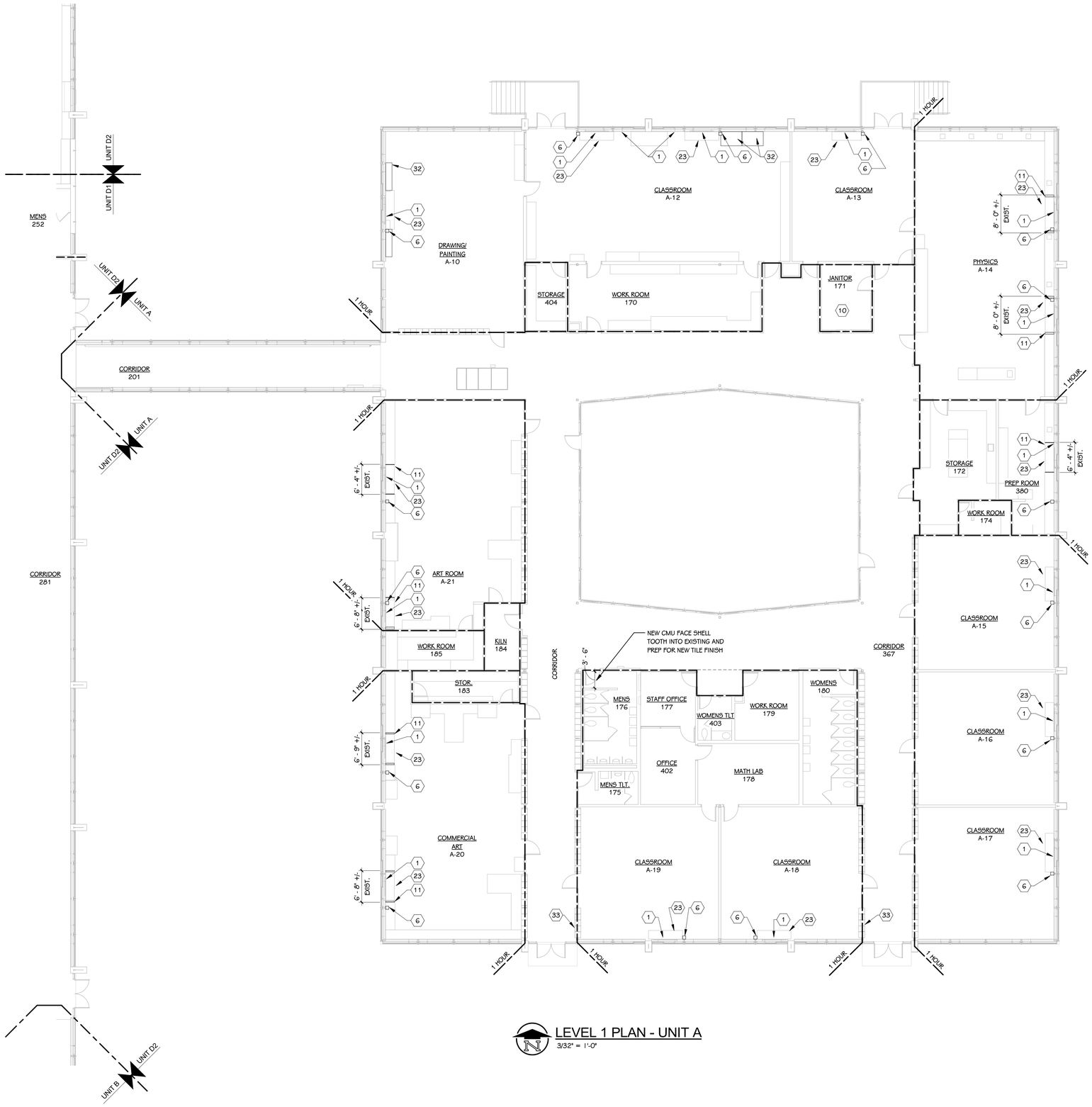

LEVEL 1 PLAN - UNIT A
3/32" = 1'-0"

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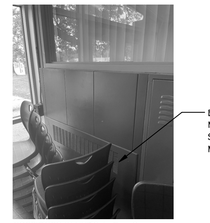
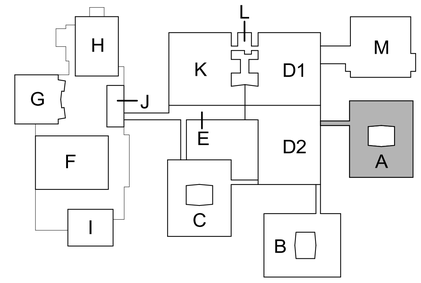


CORRIDORS IN UNITS A, B, & C

EXISTING UV TO BE REMOVED AND INSTALL NEW UV. REUSE AND REINSTALL EXISTING SALVAGED COVER - SEE MECHANICAL FOR MORE DETAILS

LEVEL 1 - KEY PLAN



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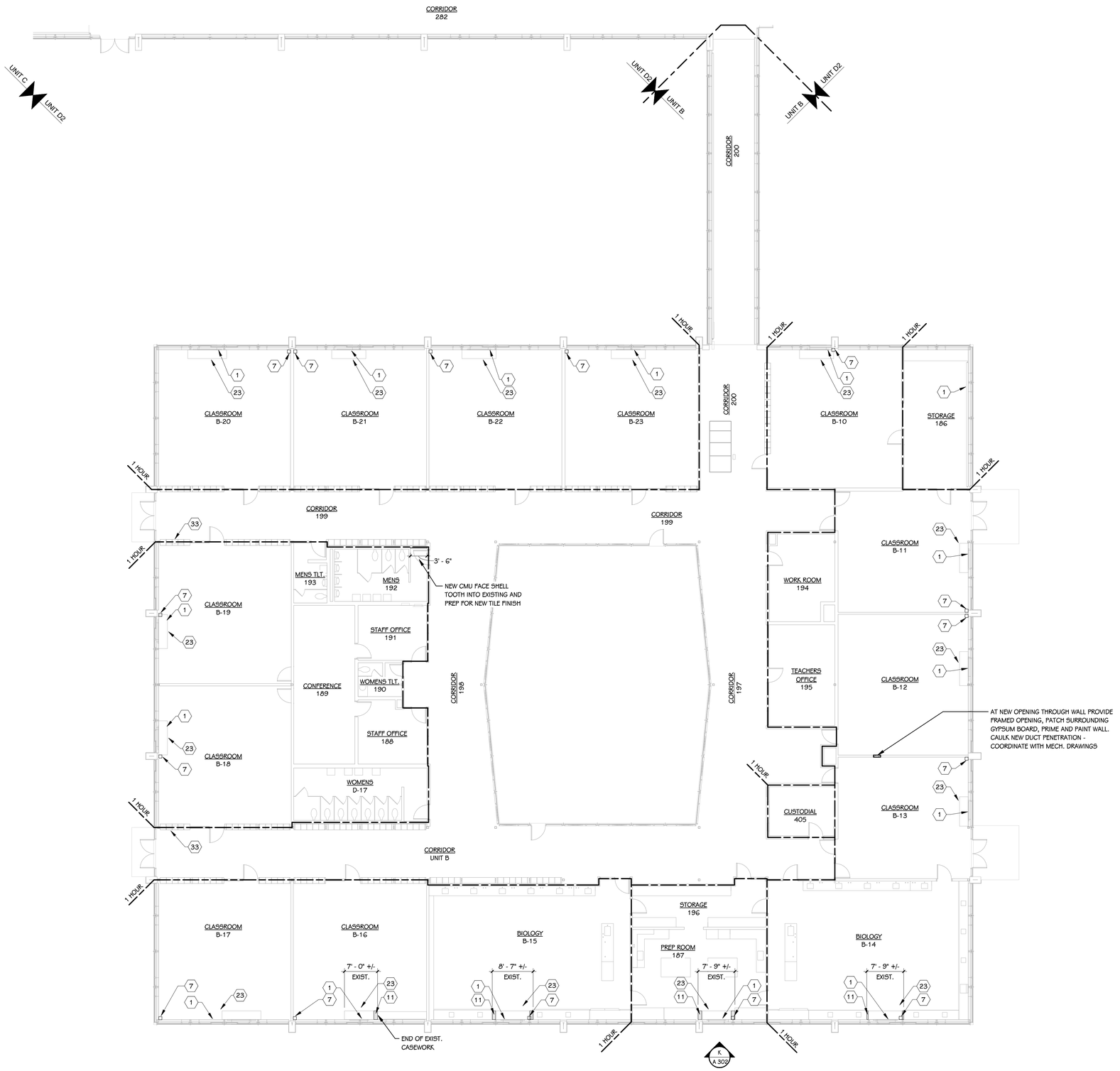

LEVEL 1 PLAN - UNIT B

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17. CAP DUCTS IN VERTICAL PIT WALL WITH 8" CONCRETE DOWELED INTO THE SUROUNDING WALLS. FILL PIT WITH SAND AND FINISH WITH 4" OF CONCRETE SLAB DOWLED INTO THE ADJOINING EXISTING SLAB. FOR SLAB AND WALL - DOWEL ALL SIDES WITH #4 DOWELS X 12" LONG AT 8" O.C. DRILL AND EPOXY WITH HILTI HIT HY 200 WITH 4" EMBEDMENT
18. 5/8" IMPACT RESISTANT GYPSUM BOARD BULKHEAD OVER 3 5/8" METAL STUD FRAMING AT 16" O.C.
19. NEW 4" CMU WALL TO MATCH SURROUNDING EXISTING WALL. TOOTH IN, PRIME AND PAINT TO MATCH EXISTING.
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22. INSTALL SALVAGED WOOD TRIM PRIME AND PAINT TO MATCH EXISTING. SEE DETAILS.
23. MINOR FLOOR PATCHING REQUIRED AT REMOVED UV'S, NEW CASEWORK, CHASE, OR OTHER MINOR FLOOR CONFIGURATION CHANGES. MATERIAL AVAILABLE OUT OF OWNER ATTIC STOCK.
24. BREAK METAL CLOSURE PIECE WITH HEMMED EDGES, GROUND SMOOTH, AND ROUNDED CORNERS, AND PAINTED TO MATCH NEW UV UNIT. ATTACH TO UV UNIT AND WINDOW FRAME AS REQUIRED. SIZE AND SHAPE TO BE CONFIRMED IN FIELD. HEIGHT TO BE FULL HEIGHT OF EXPOSED PORTION OF BLANK OFF PANEL.
25. EXISTING MECHANICAL ROOF EQUIPMENT TO REMAIN - SEE MECHANIICAL DRAWINGS.
26. NEW MECHANICAL ROOF EQUIPMENT ON EXISTING ROOF CURB FLASH WEATHER TIGHT - SEE MECHANICAL DRAWINGS.
28. NEW MECHANICAL CONDENSING UNITS SET ON ROOF. WITH NEW PIPE PENETRATIONS THROUGH ROOF FLASHED WEATHER TIGHT - SEE MECHANICAL DRAWINGS. DEMO EXISTING ROOF AS REQUIRED.
29. NEW SUSPENDED PLASTER CEILING AT EXISTING HEIGHT. PRIME AND PAINT TO MATCH EXISTING.
30. AT REMOVED DIFUSER OPENING, PROVIDE METAL STUD FRAMING, GYPSUM BOARD AND PRIME AND PAINT TO MATCH EXISTING. PRIME AND PAINT ENTIRE WALL TO ABOVE CEILING TO MATCH EXISTING.
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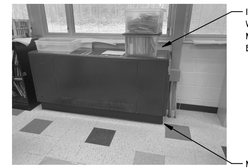
31A. NEW EXHAUST FAN/RELIEF HOOD OR OTHER MECHANICAL EQUIPMENT ON NEW ROOF CURB. DEMO EXISTING ROOF AS REQUIRED. PATCH NEW CURB INTO EXISTING ROOF WEATHER TIGHT - SEE MECHANICAL DRAWINGS. SEE ROOF CURB AND PENETRATION DETAILS THIS SHEET.
32. REINSTALL SALVAGED CASEWORK AND COUNTERTOP
33. EXISTING UV TO BE REMOVED AND INSTALL NEW UV. REINSTALL EXISTING SALVAGED COVER - SEE PICTURE
34. INSTALL NEW PRIMED AND PAINTED WOOD TRIM TO MATCH EXISTING. SEE DETAILS.
35. NEW ACCESS PANELS 18"x18" - PRIME AND PAINT TO MATCH CEILING - COORD. FINAL LOCATION WITH MECHANICAL

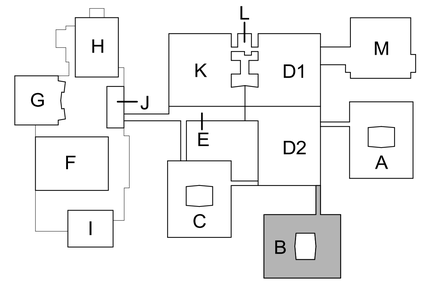


ROOM (B-12)

IF REQUIRED PATCH, PRIME AND PAINT WALL AT REMOVED MECH. EQUIPMENT TO MATCH EXISTING COORDINATE WITH NEW EQUIPMENT.

MINOR FLOOR PATCHING AROUND NEW UV TO MATCH EXISTING. MATERIALS POVIDED OUT OF OWNER ATTIC STOCK.

LEVEL 1 - KEY PLAN



KEY PLAN

SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR	DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

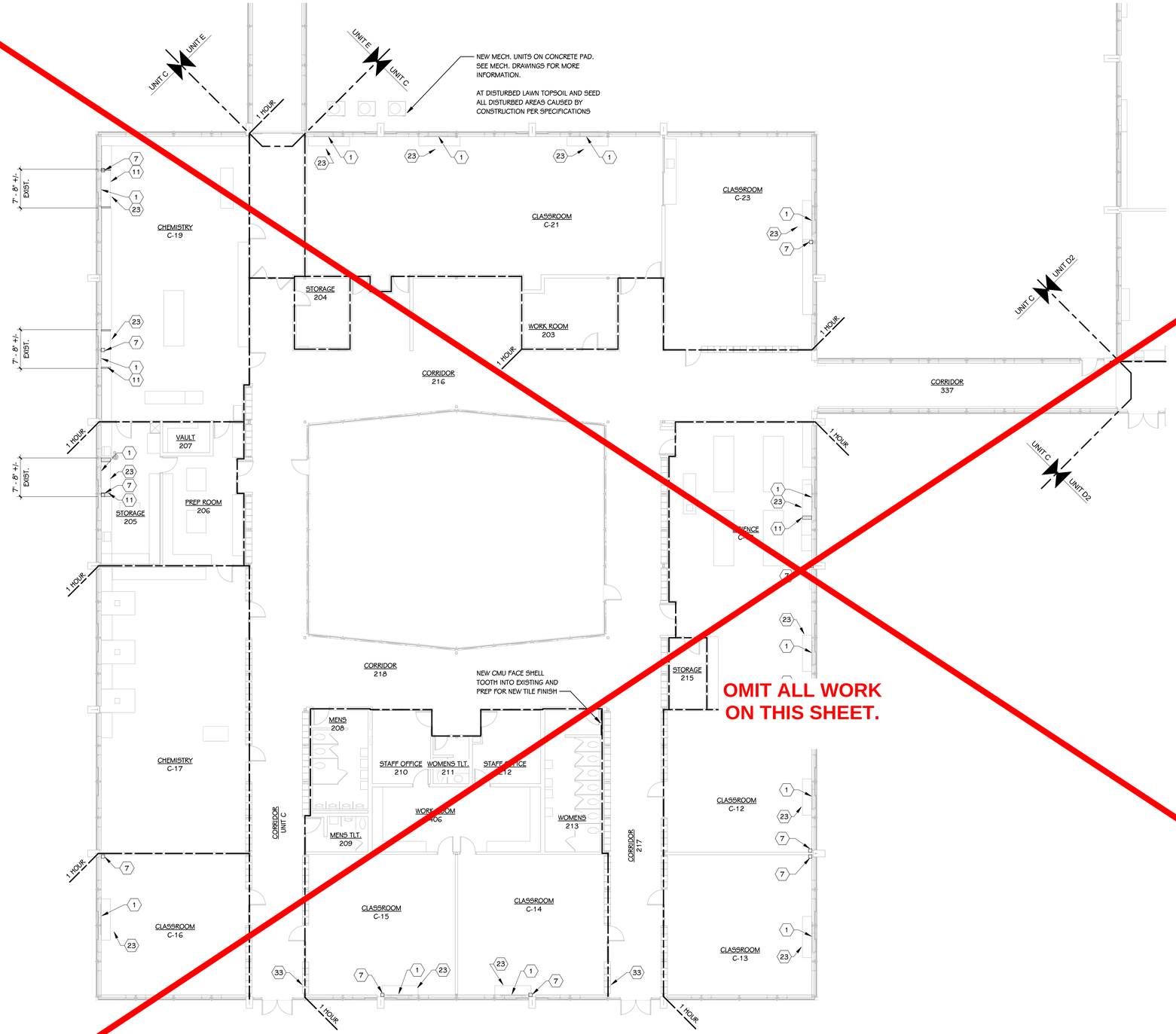
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 FLOOR PLAN - UNIT B

DATE
NOVEMBER 22, 2022

SHEET NUMBER
A 101B

21-807.00



LEVEL 1 PLAN - UNIT C
3/32" = 1'-0"

KEYED NOTES - NEW CONSTRUCTION

1. WHERE REQUIRED PATCH, PRIME AND PAINT WALL AT REMOVED MECH. EQUIPMENT TO MATCH EXISTING COORDINATE WITH NEW EQUIPMENT.
2. FILL EXISTING CORED HOLES IN FLOOR WITH CONCRETE AND PATCH FLOOR TO MATCH EXISTING.
3. PATCH, PRIME AND PAINT WALL TO MATCH EXISTING.
4. NEW 2X2 ACP CEILING SYSTEM, INSTALL AT EXISTING CEILING HEIGHT.
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6. PROVIDE A CLEAR ANODIZED ALUM. CHASE UP ALONG THE SIDE OF THE COLUMN FULL HEIGHT. SIZED TO BE MINIMUM REQUIRED FOR MECHANICAL PIPES. MATCH EXISTING CHASES. FULL HEIGHT TO ABOVE CEILING.
7. INSTALL SALVAGED ALUM. CHASE ASSEMBLY UP ALONG THE WALL. INSTALL IN EXISTING LOCATION.
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10. NEW EXHAUST THROUGH ROOF (SEE MECH. DRAWINGS). PATCH ROOF AND PROVIDE STEEL FRAMING AROUND NEW ROOF OPENING. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION.
11. AT EACH SIDE OF NEW HORIZ. UV PROVIDE A PRIME AND PAINTED METAL FILLER PANEL (TOP AND FRONT) TO MATCH AND TIE INTO UV. SECURE TO UV AND ADJOINING CASEWORK (BY MECHANICAL). RPOVIDE P-LAM. END PANEL AT NEWLY EXPOSED CASEWORK END (MATCH EXISTING)
12. PRIME AND PAINT ALL EXPOSED ROOF BEAMS IN ROOM.
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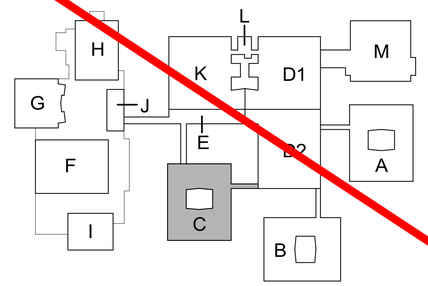
LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 FLOOR PLAN - UNIT C

DATE
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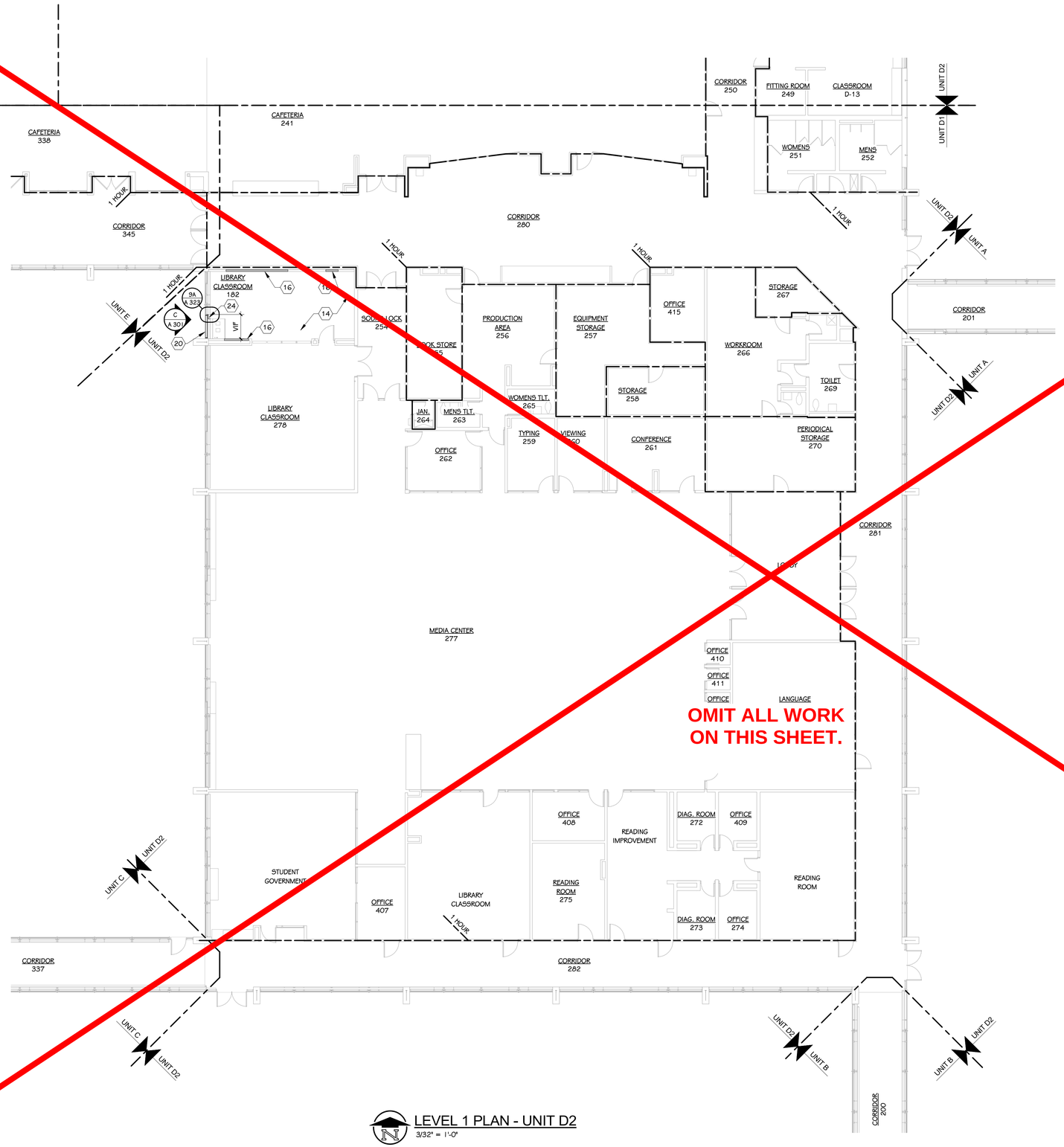

LEVEL 1 PLAN - UNIT D2
3/32" = 1'-0"

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13. PREP, PRIME, PAINT AND REINSTALL SALVAGED PIPE RAILING SYSTEM. GRIND ALL WELDS SMOOTH
14. PRIME AND PAINT ALL WALLS TO MATCH EXISTING FULL HEIGHT.
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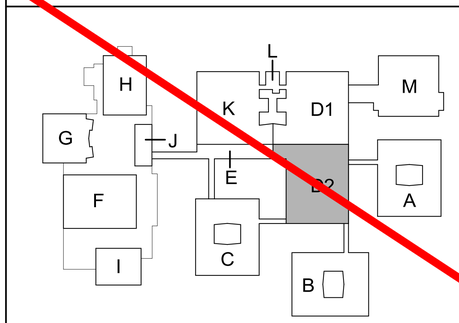
LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

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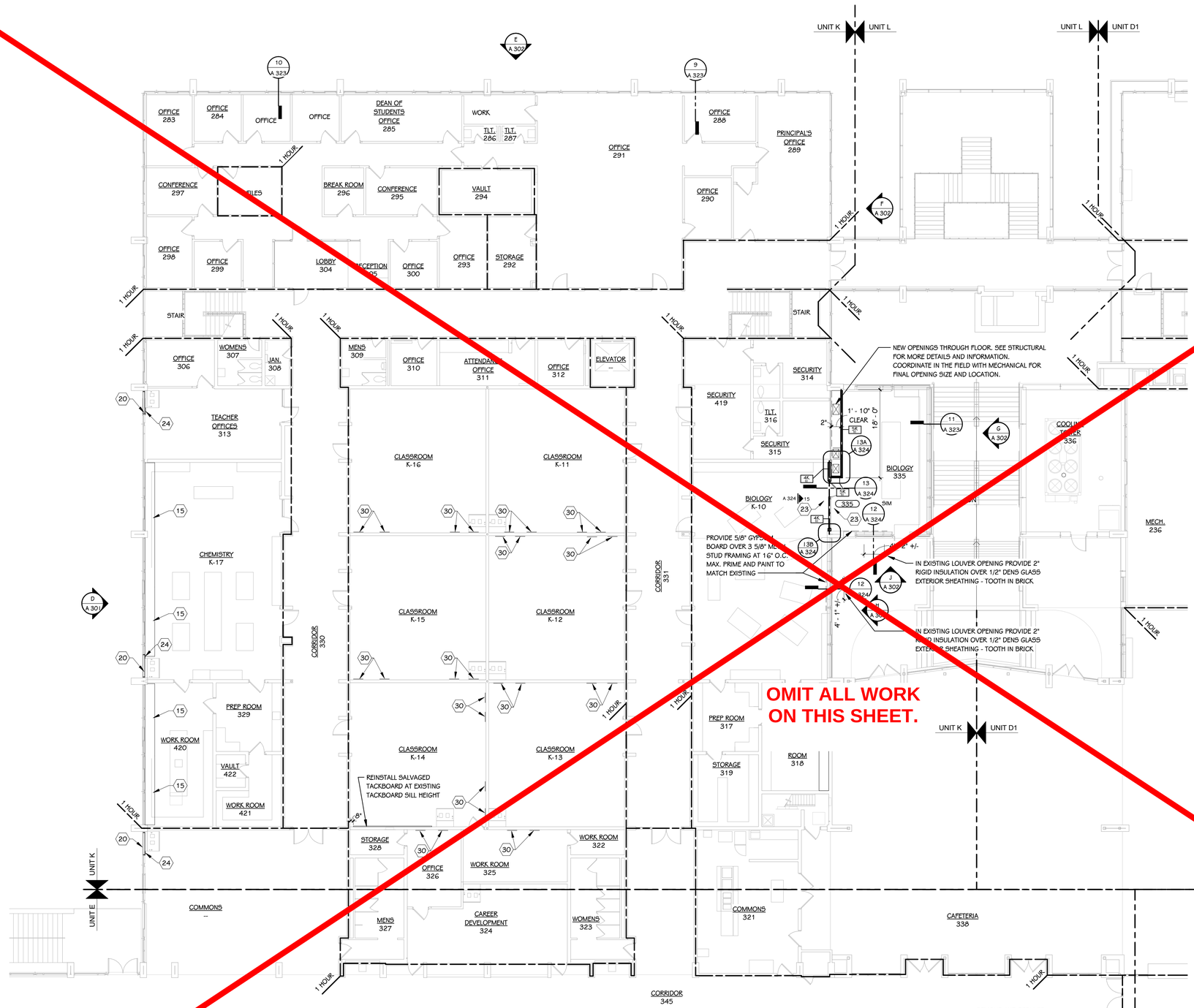
OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 FLOOR PLAN - UNIT D2

DATE
NOVEMBER 22, 2022

SHEET NUMBER
A101D2

21-807.00



LEVEL 1 PLAN - UNIT K
3/32" = 1'-0"

ROOM (K-15) TYPICAL FOR K-11, K-12, K-13, K-14, K-15, K-16

REMOVE EXISTING HIGH AND LOW LOUVERS AND INFILL OPENINGS - MATCHING GYPSUM BOARD, PRIME AND PAINT TO MATCH EXISTING. SEE PLAN FOR QUANTITIES PER ROOM.

REMOVE AND REPLACE SEE PLANS

ROOM (K-10)

REMOVE AND REPLACE EXISTING STORE FRONT SYSTEM.

PATCH FLOORING AS REQUIRED AT REMOVED WALL OUT OF OWNER'S ATTIC STOCK

KEYED NOTES - NEW CONSTRUCTION

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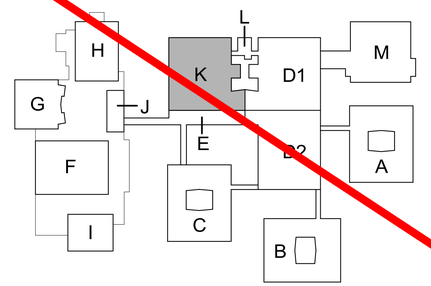
LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

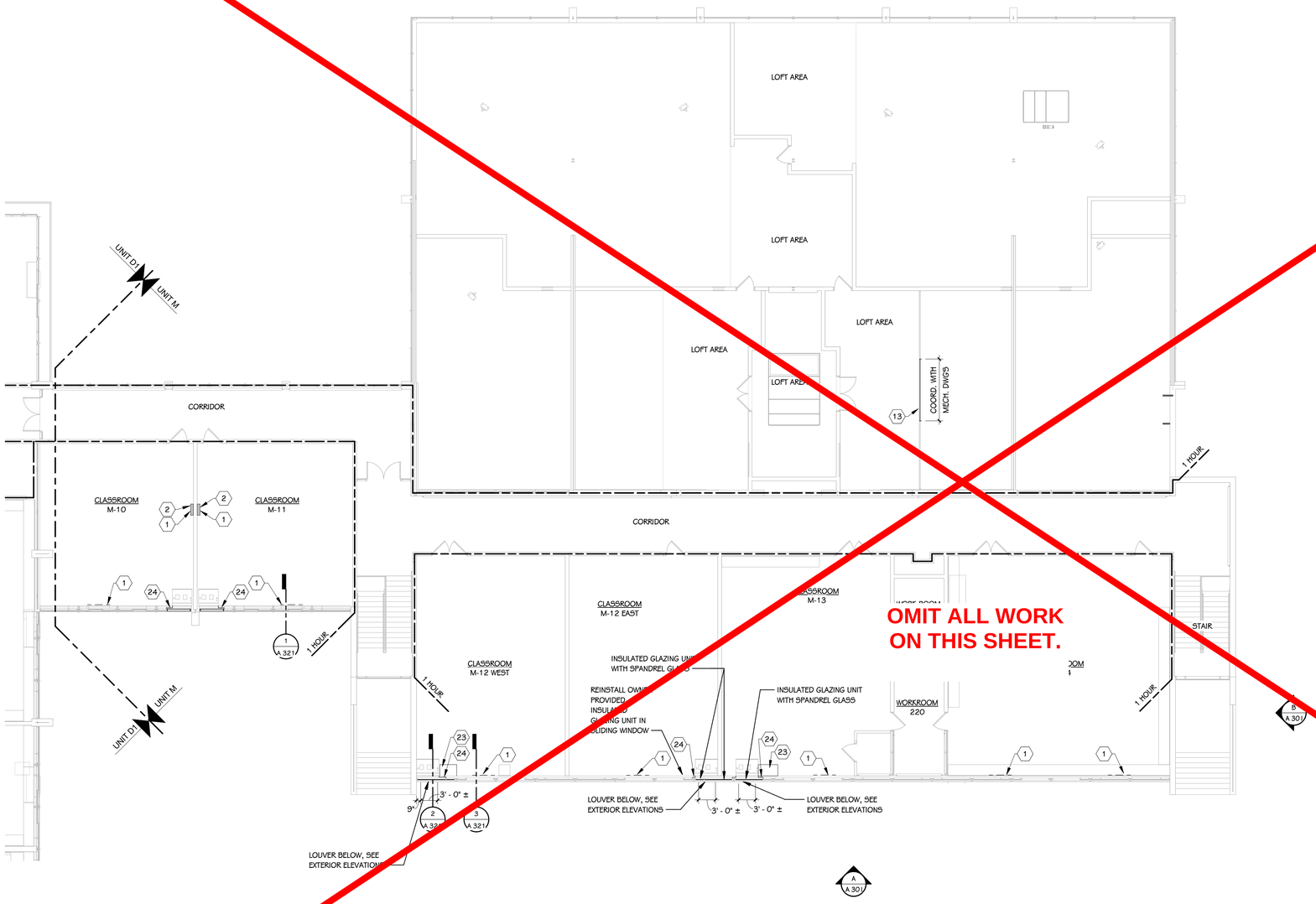
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 FLOOR PLAN - UNIT K

DATE
NOVEMBER 22, 2022

SHEET NUMBER
A101K
21-807.00



OMIT ALL WORK ON THIS SHEET.

LEVEL 1 PLAN - UNIT M

3/32" = 1'-0"

KEYED NOTES - NEW CONSTRUCTION

1 WHERE REQUIRED PATCH, PRIME AND PAINT WALL AT REMOVED MECH. EQUIPMENT TO MATCH EXISTING COORDINATE WITH NEW EQUIPMENT.
2 FILL EXISTING CORED HOLES IN FLOOR WITH CONCRETE AND PATCH FLOOR TO MATCH EXISTING.
3 PATCH, PRIME AND PAINT WALL TO MATCH EXISTING.
4 NEW 2X2 ACP CEILING SYSTEM, INSTALL AT EXISTING CEILING HEIGHT.
5 PATCH PRIME AND PAINT WALL AT REMOVED MECH. EQUIPMENT AND REMOVED CASEWORK. PAINT TO MATCH EXISTING.
6 PROVIDE A CLEAR ANODIZED ALUM. CHASE UP ALONG THE SIDE OF THE COLUMN FULL HEIGHT. SIZE TO BE MINIMUM REQUIRED FOR MECHANICAL PIPES. MATCH EXISTING CHASES. FULL HEIGHT TO ABOVE CEILING.
7 INSTALL SALVAGED ALUM. CHASE ASSEMBLY UP ALONG THE WALL. INSTALL IN EXISTING LOCATION.
8 INSTALL SALVAGED CEILING TILE AND GRID AT EXISTING HEIGHT. ALLOW FOR NEW TILE AND GRID (TO MATCH EXISTING) AT DAMAGED TILES OR GRID.
9 INFILL EXISTING OPENING WITH BRICK AND CMU. BRICK TO MATCH EXISTING
10 NEW EXHAUST THROUGH ROOF (SEE MECH. DRAWINGS). PATCH ROOF AND PROVIDE STEEL FRAMING AROUND NEW ROOF OPENING. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION.
11 AT EACH SIDE OF NEW HORIZ. UV PROVIDE A PRIME AND PAINTED METAL FILLER PANEL (TOP AND FRONT) TO MATCH AND TIE INTO UV. SECURE TO UV AND ADJOINING CASEWORK (BY MECHANICAL). PROVIDE P-LAM. END PANEL AT NEWLY EXPOSED CASEWORK END TO MATCH EXISTING)
12 PRIME AND PAINT ALL EXPOSED ROOF BEAMS IN ROOM.
13 PREP, PRIME, PAINT AND REINSTALL SALVAGED PIPE RAILING SYSTEM. GRIND ALL WELDS SMOOTH
14 PRIME AND PAINT ALL WALLS TO MATCH EXISTING FULL HEIGHT.
15 NEW METAL CASEWORK - SEE INTERIOR DRAWINGS
16 REBUILD WALL AT REMOVED MTL. STUD WALL AND GYPSUM BOARD WITH NEW 5/8" GYPSUM BOARD OVER MTL STUD FRAMING TO MATCH EXISTING. PRIME AND PAINT ENTIRE WALL TO MATCH EXISTING.
17 CAP DUCTS AT VERTICAL PIT WALL WITH 8" CONCRETE DOWELED INTO THE SURROUNDING WALLS. FILL PIT WITH SAND AND FINISH WITH 4" OF CONCRETE SLAB DOWLED INTO THE ADJOINING EXISTING SLAB. FOR SLAB AND WALL DOWEL ALL SIDES WITH #4 DOWELS X 12" LONG AT 8" O.C. DRILL AND EPOXY WITH HILTI HIT HY 200 WITH 4" EMBEDMENT
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22 INSTALL SALVAGED WOOD TRIM PRIME AND PAINT TO MATCH EXISTING. SEE DETAILS.
23 MINOR FLOOR PATCHING REQUIRED AT REMOVED UV'S, NEW CASEWORK, CHASE, OR OTHER MINOR FLOOR CONFIGURATION CHANGES. MATERIAL AVAILABLE OUT OF OWNER ATTIC STOCK.
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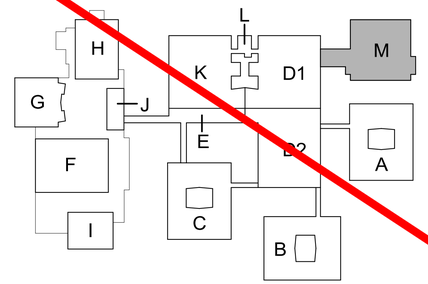
LEVEL 1 - KEY PLAN



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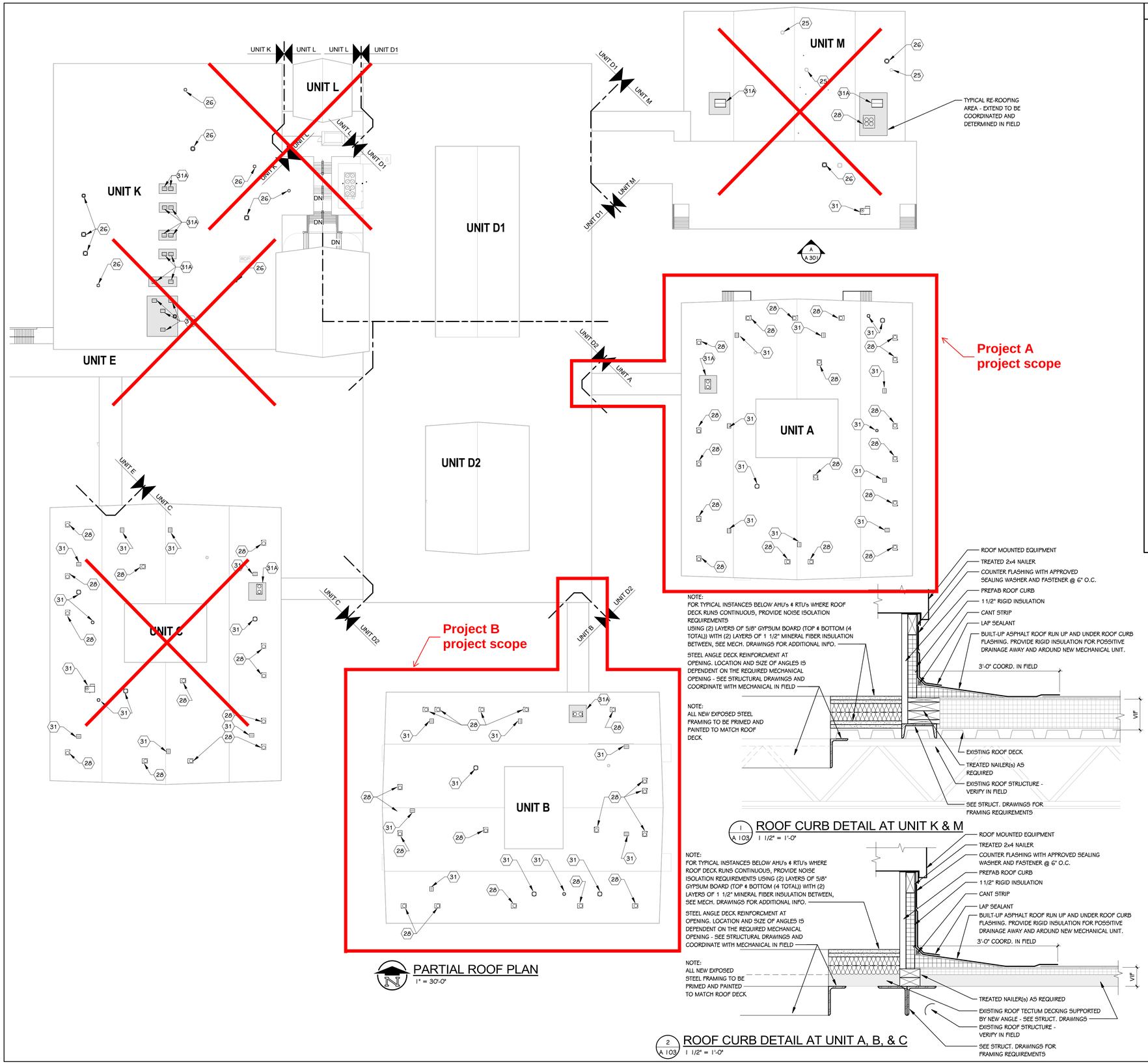

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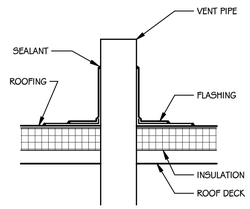
1 / A 103 ROOF CURB DETAIL AT UNIT K & M
1 1/2" = 1'-0"

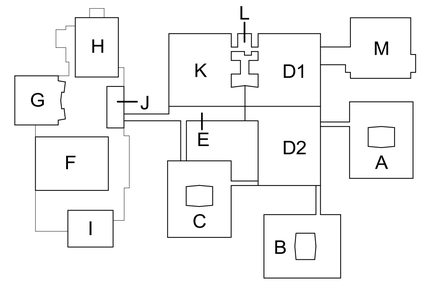
2 / A 103 ROOF CURB DETAIL AT UNIT A, B, & C
1 1/2" = 1'-0"

PARTIAL ROOF PLAN
1" = 30'-0"



3 / A 103 TYPICAL ROOF PENETRATION DETAIL
1 1/2" = 1'-0"

LEVEL 1 - KEY PLAN



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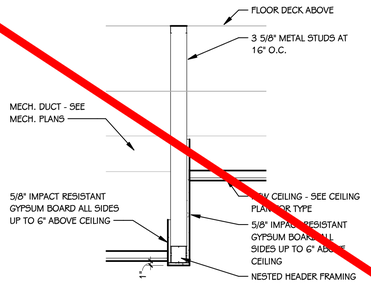
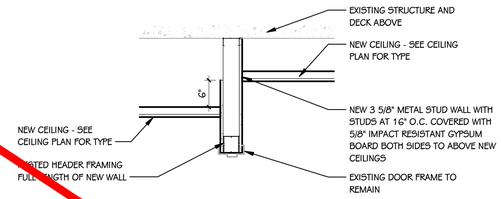


1 A 200K **BULKHEAD DETAIL**
3/4" = 1'-0"



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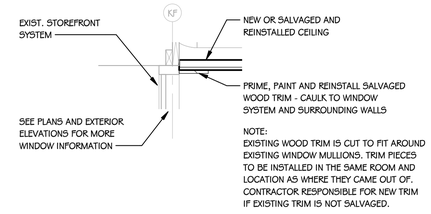
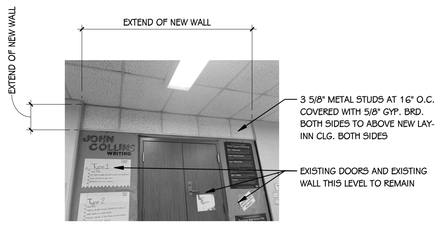
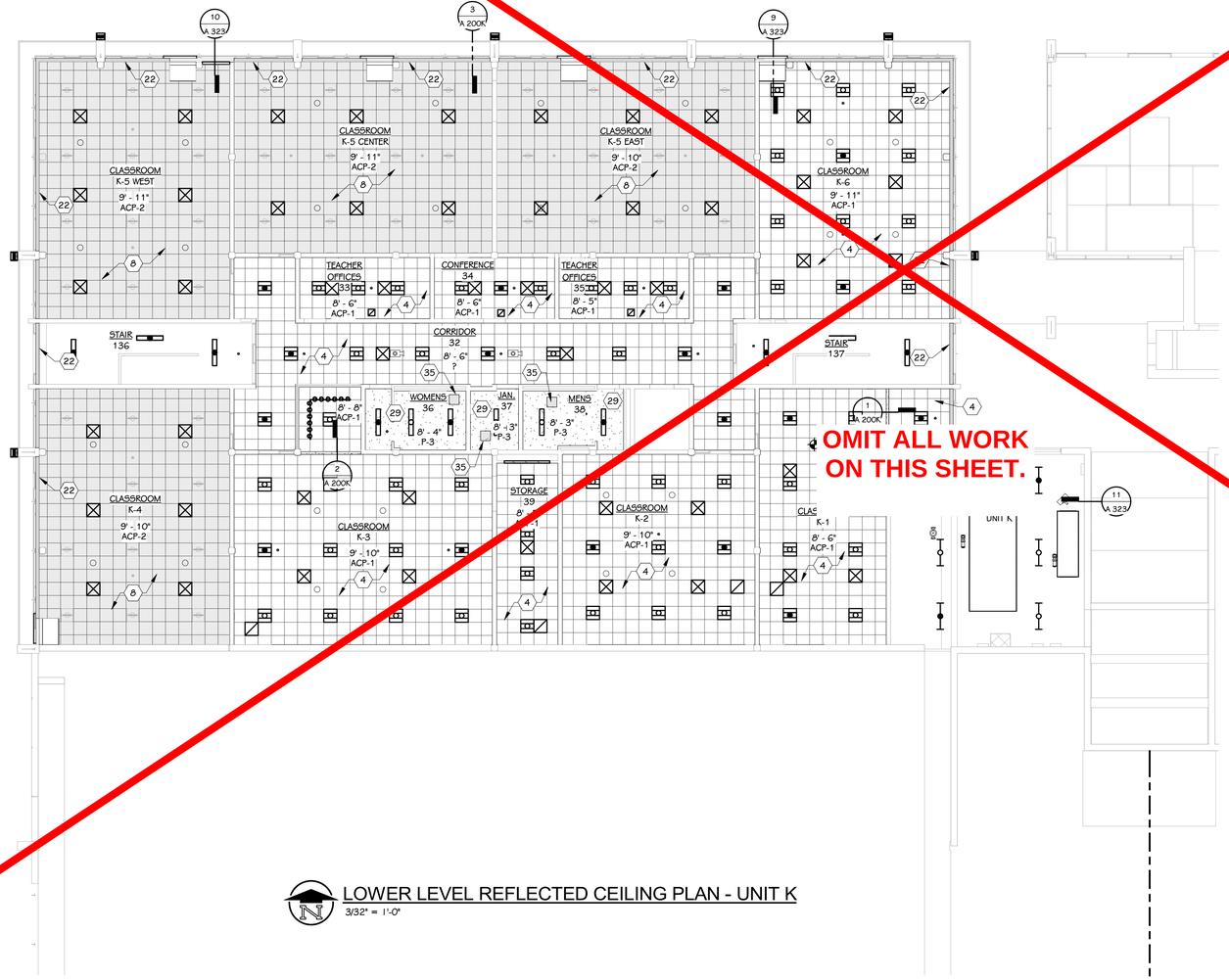


3 A 200K **CEILING AND WINDOW DETAIL**
3/4" = 1'-0"



ROOM (K-3)



LOWER LEVEL REFLECTED CEILING PLAN - UNIT K
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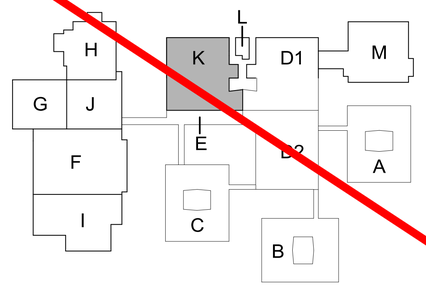
REFLECTED CEILING KEY

- GYPSUM BOARD
- ACP-1 - LAY-IN ACOUSTICAL TILE GRID
- ACP-2 - SALVAGED LAY-IN ACOUSTICAL TILE GRID
- OR — LIGHTING - REFER TO ELECTRICAL LIGHTING PLAN
- MECHANICAL - REFER TO MECHANICAL SHEET METAL PLAN

REFLECTED CEILING GENERAL NOTES

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.

LOWER LEVEL - KEY PLAN



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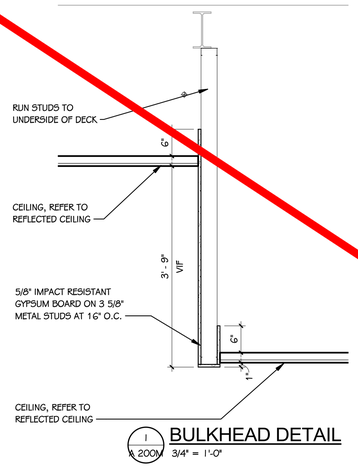
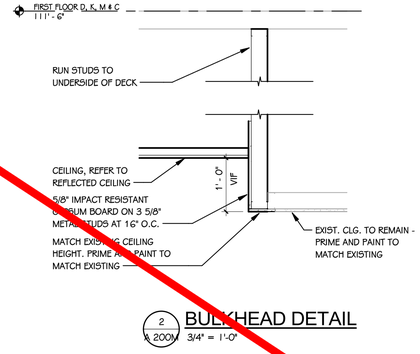


1 A 200M BULKHEAD DETAIL
3/4" = 1'-0"



2 A 200M BULKHEAD DETAIL
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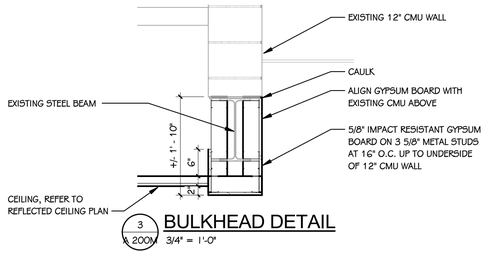


3 A 200M BULKHEAD DETAIL
3/4" = 1'-0"

LOWER LEVEL REFLECTED CEILING PLAN - UNIT M
3/32" = 1'-0"

KEYED NOTES - NEW CONSTRUCTION

1 WHERE REQUIRED PATCH, PRIME AND PAINT WALL AT REMOVED MECH. EQUIPMENT TO MATCH EXISTING COORDINATE WITH NEW EQUIPMENT.
2 FILL EXISTING CORED HOLES IN FLOOR WITH CONCRETE AND PATCH FLOOR TO MATCH EXISTING.
3 PATCH, PRIME AND PAINT WALL TO MATCH EXISTING.
4 NEW 2X2 ACP CEILING SYSTEM, INSTALL AT EXISTING CEILING HEIGHT.
5 PATCH PRIME AND PAINT WALL AT REMOVED MECH. EQUIPMENT AND REMOVED CASEWORK. PAINT TO MATCH EXISTING.
6 PROVIDE A CLEAR ANODIZED ALUM. CHASE UP ALONG THE SIDE OF THE COLUMN FULL HEIGHT. SIZE TO BE MINIMUM REQUIRED FOR MECHANICAL PIPES. MATCH EXISTING CHASES. FULL HEIGHT TO ABOVE CEILING.
7 INSTALL SALVAGED ALUM. CHASE ASSEMBLY UP ALONG THE WALL. INSTALL IN EXISTING LOCATION.
8 INSTALL SALVAGED CEILING TILE AND GRID AT EXISTING HEIGHT. ALLOW FOR NEW TILE AND GRID (TO MATCH EXISTING) AT DAMAGED TILES OR GRID.
9 INFILL EXISTING OPENING WITH BRICK AND CMU. BRICK TO MATCH EXISTING
10 NEW EXHAUST THROUGH ROOF (SEE MECH. DRAWINGS). PATCH ROOF AND PROVIDE STEEL FRAMING AROUND NEW ROOF OPENING. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION.
11 AT EACH SIDE OF NEW HORIZ. UV PROVIDE A PRIME AND PAINTED METAL FILLER PANEL (TOP AND FRONT) TO MATCH AND TIE INTO UV. SECURE TO UV AND ADJOINING CASEWORK (BY MECHANICAL). PROVIDE P-LAM. END PANEL AT NEWLY EXPOSED CASEWORK END (MATCH EXISTING)
12 PRIME AND PAINT ALL EXPOSED ROOF BEAMS IN ROOM.
13 PREP, PRIME, PAINT AND REINSTALL SALVAGED PIPE RAILING SYSTEM. GRIND ALL WELDS SMOOTH
14 PRIME AND PAINT ALL WALLS TO MATCH EXISTING FULL HEIGHT.
15 NEW METAL CASEWORK - SEE INTERIOR DRAWINGS
16 REBUILD WALL AT REMOVED MTL. STUD WALL AND GYPSUM BOARD WITH NEW 5/8" GYPSUM BOARD OVER MTL STUD FRAMING TO MATCH EXISTING. PRIME AND PAINT ENTIRE WALL TO MATCH EXISTING.
17 CAP DUCTS AT VERTICAL PIT WALL WITH 8" CONCRETE DOWELED INTO THE SURROUNDING WALLS. FILL PIT WITH SAND AND FINISH WITH 4" OF CONCRETE SLAB DOWLED INTO THE ADJOINING EXISTING SLAB. FOR SLAB AND WALLS DOWEL ALL SIDES WITH #4 DOWELS X 12" LONG AT 8" O.C. DRILL AND EPOXY WITH HILTI HIT HY 200 WITH 4" EMBEDMENT
18 5/8" IMPACT RESISTANT GYPSUM BOARD BULKHEAD OVER 3 5/8" METAL STUD FRAMING AT 16" O.C.
19 NEW 4" CMU WALL TO MATCH SURROUNDING EXISTING WALL. TOOTH IN, PRIME AND PAINT TO MATCH EXISTING.
20 AT REMOVED GLASS PANEL PROVIDE NEW CLEAR ANODIZED LOUVER INSERT, PROVIDE INSULATED METAL BLANK OFF PANEL AT ANY UNUSED LOUVER AREAS - SEE MECH. DWG'S
21 IN EXISTING LOUVER OPENING INSTALL 3" INSULATED METAL PANEL (BLACK) TIGHT AGAINST LOUVER AND TIGHT IN OPENING. SECURE IN PLACE AND CAULK ALL SIDES. AT INSIDE FLUSH WITH INTERIOR FACE OF EXISTING CMU WALL ADD 4" CMU INFILL TOOTH IN ALL SIDES.
22 INSTALL SALVAGED WOOD TRIM PRIME AND PAINT TO MATCH EXISTING. SEE DETAILS.
23 MINOR FLOOR PATCHING REQUIRED AT REMOVED UV'S, NEW CASEWORK, CHASE, OR OTHER MINOR FLOOR CONFIGURATION CHANGES. MATERIAL AVAILABLE OUT OF OWNER ATTIC STOCK.
24 BREAK METAL CLOSURE PIECE WITH HEMMED EDGES, GROUND SMOOTH, AND ROUNDED CORNERS, AND PAINTED TO MATCH NEW UV UNIT. ATTACH TO UV UNIT AND WINDOW FRAME AS REQUIRED. SIZE AND SHAPE TO BE CONFIRMED IN FIELD. HEIGHT TO BE FULL HEIGHT OF EXPOSED PORTION OF BLANK OFF PANEL.
25 EXISTING MECHANICAL ROOF EQUIPMENT TO REMAIN - SEE MECHANIICAL DRAWINGS.
26 NEW MECHANICAL ROOF EQUIPMENT ON EXISTING ROOF CURB FLASH WEATHER TIGHT - SEE MECHANICAL DRAWINGS.
28 NEW MECHANICAL CONDENSING UNITS SET ON ROOF. WITH NEW PIPE PENETRATIONS THROUGH ROOF FLASHED WEATHER TIGHT - SEE MECHANICAL DRAWINGS. DEMO EXISTING ROOF AS REQUIRED.
29 NEW SUSPENDED PLASTER CEILING AT EXISTING HEIGHT. PRIME AND PAINT TO MATCH EXISTING.
30 AT REMOVED DIFUSER OPENING, PROVIDE METAL STUD FRAMING, GYPSUM BOARD AND PRIME AND PAINT TO MATCH EXISTING. PRIME AND PAINT ENTIRE WALL TO ABOVE CEILING TO MATCH EXISTING.
31 NEW EXHAUST FAN / RELIEF HOOD ON EXISTING ROOF CURB FLASH WEATHER TIGHT
31A NEW EXHAUST FAN/RELIEF HOOD OR OTHER MECHANICAL EQUIPMENT ON NEW ROOF CURB. DEMO EXISTING ROOF AS REQUIRED. PATCH NEW CURB INTO EXISTING ROOF WEATHER TIGHT - SEE MECHANICAL DRAWINGS. SEE ROOF CURB AND PENETRATION DETAILS THIS SHEET.
32 REINSTALL SALVAGED CASEWORK AND COUNTERTOP
33 EXISTING UV TO BE REMOVED AND INSTALL NEW UV. REINSTALL EXISTING SALVAGED COVER - SEE PICTURE
34 INSTALL NEW PRIMED AND PAINTED WOOD TRIM TO MATCH EXISTING. SEE DETAILS.
35 NEW ACCESS PANELS 18"x18" - PRIME AND PAINT TO MATCH CEILING - COORD. FINAL LOCATION WITH MECHANICAL

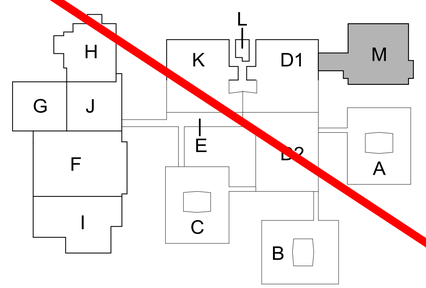
REFLECTED CEILING KEY

GYPSUM BOARD
ACP-1 - LAY-IN ACOUSTICAL TILE GRID
ACP-2 - SALVAGED LAY-IN ACOUSTICAL TILE GRID
OR — LIGHTING - REFER TO ELECTRICAL LIGHTING PLAN
MECHANICAL - REFER TO MECHANICAL SHEET METAL PLAN

REFLECTED CEILING GENERAL NOTES

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.

LOWER LEVEL - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

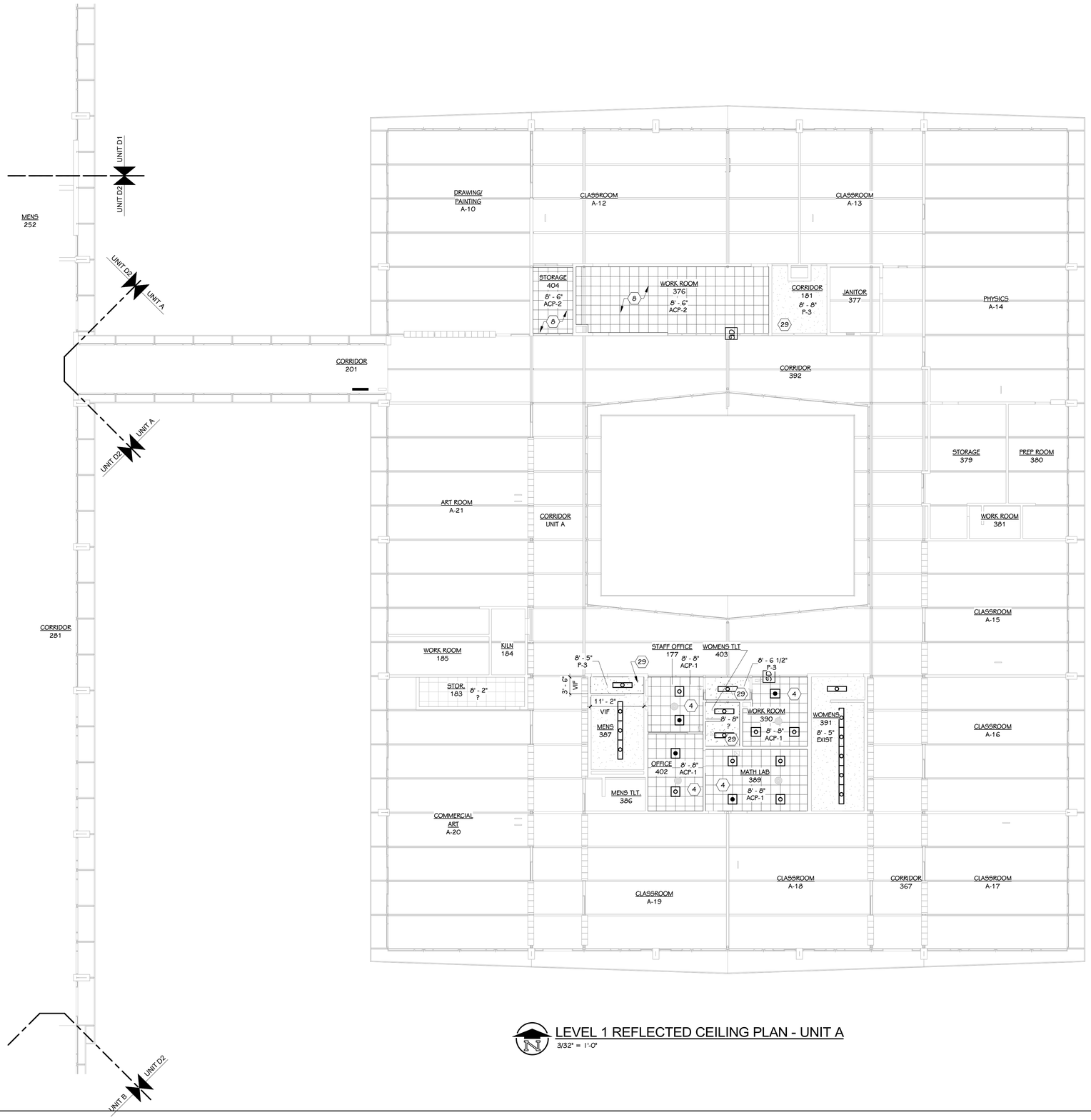
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL REFLECTED CEILING PLAN - UNIT M

DATE
NOVEMBER 22, 2022

SHEET NUMBER
A 200M
21-807.00



LEVEL 1 REFLECTED CEILING PLAN - UNIT A

3/32" = 1'-0"

KEYED NOTES - NEW CONSTRUCTION

1. WHERE REQUIRED PATCH, PRIME AND PAINT WALL AT REMOVED MECH. EQUIPMENT TO MATCH EXISTING COORDINATE WITH NEW EQUIPMENT.
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11. AT EACH SIDE OF NEW HORIZ. UV PROVIDE A PRIME AND PAINTED METAL FILLER PANEL (TOP AND FRONT) TO MATCH AND TIE INTO UV. SECURE TO UV AND ADJOINING CASEWORK (BY MECHANICAL). RPOVIDE P-LAM. END PANEL AT NEWLY EXPOSED CASEWORK END (MATCH EXISTING)
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14. PRIME AND PAINT ALL WALLS TO MATCH EXISTING FULL HEIGHT.
15. NEW METAL CASEWORK - SEE INTERIOR DRAWINGS
16. REBUILD WALL AT REMOVED MTL. STUD WALL AND GYPSUM BOARD WITH NEW 5/8" GYPSUM BOARD OVER MTL STUD FRAMING TO MATCH EXISTING. PRIME AND PAINT ENTIRE WALL TO MATCH EXISTING.
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35. NEW ACCESS PANELS 18"x18" - PRIME AND PAINT TO MATCH CEILING - COORD. FINAL LOCATION WITH MECHANICAL

REFLECTED CEILING KEY

- GYPSUM BOARD
- ACP-1 - LAY-IN ACOUSTICAL TILE GRID
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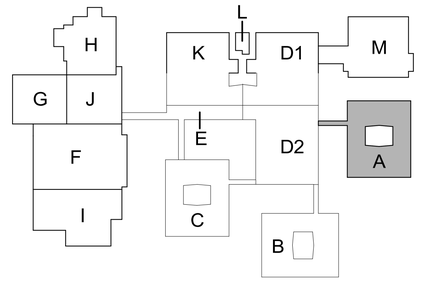
REFLECTED CEILING GENERAL NOTES

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.

LOWER LEVEL - KEY PLAN



KEY PLAN

SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR	DATE

PROJECT TITLE
LOY NORRIX HIGH
SCHOOL MECHANICAL
IMPROVEMENTS
PROJECT

OWNER
KALAMAZOO PUBLIC
SCHOOLS

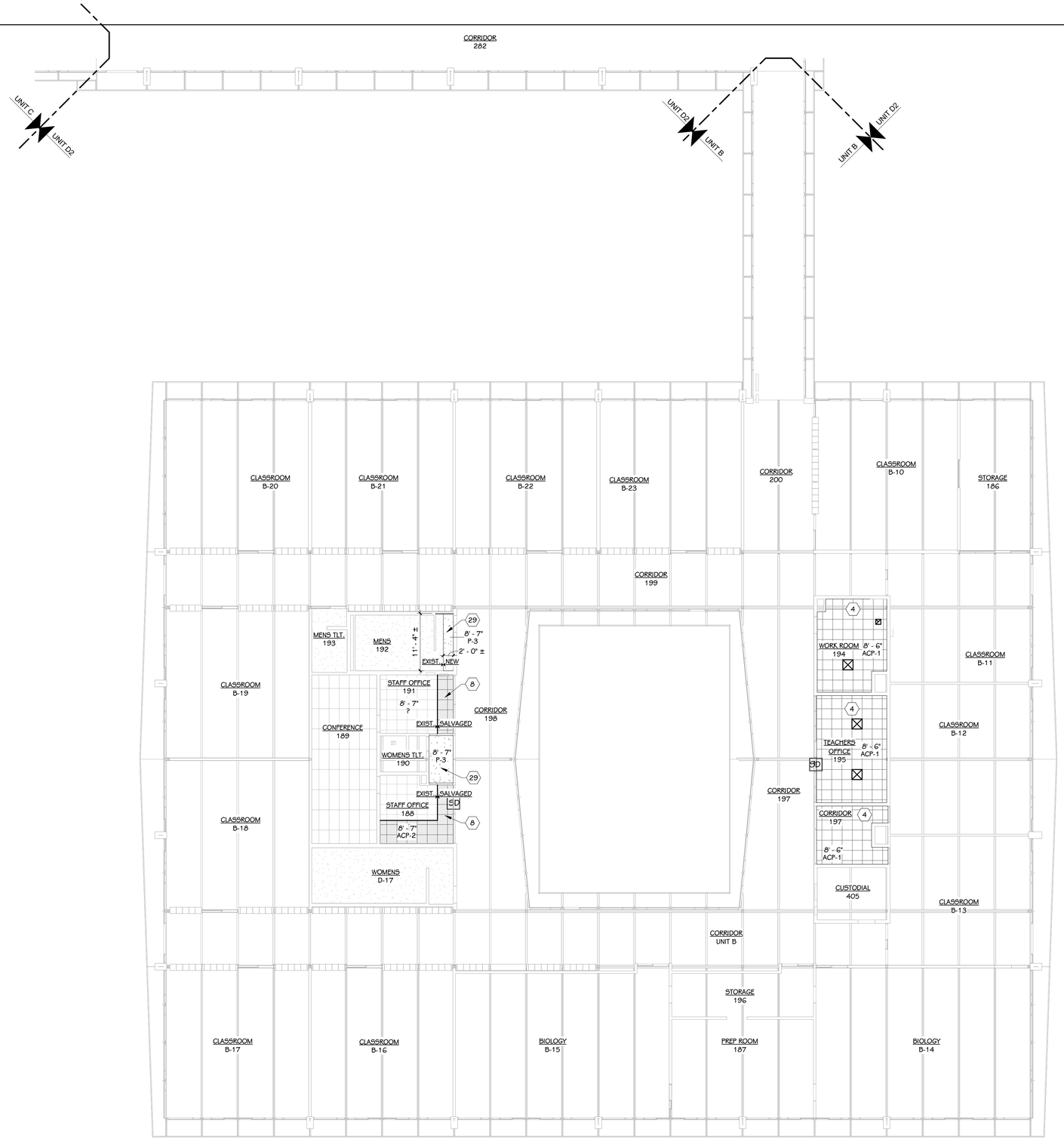
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 REFLECTED CEILING PLAN -
UNIT A

DATE
NOVEMBER 22, 2022

SHEET NUMBER
A 201A

21-807.00



LEVEL 1 REFLECTED CEILING PLAN - UNIT B

3/32" = 1'-0"

KEYED NOTES - NEW CONSTRUCTION

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11 AT EACH SIDE OF NEW HORIZ. UV PROVIDE A PRIME AND PAINTED METAL FILLER PANEL (TOP AND FRONT) TO MATCH AND TIE INTO UV. SECURE TO UV AND ADJOINING CASEWORK (BY MECHANICAL). RPOVIDE P-LAM. END PANEL AT NEWLY EXPOSED CASEWORK END (MATCH EXISTING)
12 PRIME AND PAINT ALL EXPOSED ROOF BEAMS IN ROOM.
13 PREP, PRIME, PAINT AND REINSTALL SALVAGED PIPE RAILING SYSTEM. GRIND ALL WELDS SMOOTH
14 PRIME AND PAINT ALL WALLS TO MATCH EXISTING FULL HEIGHT.
15 NEW METAL CASEWORK - SEE INTERIOR DRAWINGS
16 REBUILD WALL AT REMOVED MTL. STUD WALL AND GYPSUM BOARD WITH NEW 5/8" GYPSUM BOARD OVER MTL STUD FRAMING TO MATCH EXISTING. PRIME AND PAINT ENTIRE WALL TO MATCH EXISTING.
17 CAP DUCTS IN VERTICAL PIT WALL WITH 8" CONCRETE DOWELED INTO THE SUROUNDING WALLS. FILL PIT WITH SAND AND FINISH WITH 4" OF CONCRETE SLAB DOWLED INTO THE ADJOINING EXISTING SLAB. FOR SLAB AND WALL - DOWEL ALL SIDES WITH #4 DOWELS X 12" LONG AT 8" O.C. DRILL AND EPOXY WITH HILTI HIT HY 200 WITH 4" EMBEDMENT
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REFLECTED CEILING KEY

GYPSUM BOARD

ACP-1 - LAY-IN ACOUSTICAL TILE GRID

ACP-2 - SALVAGED LAY-IN ACOUSTICAL TILE GRID

O OR O LIGHTING - REFER TO ELECTRICAL LIGHTING PLAN

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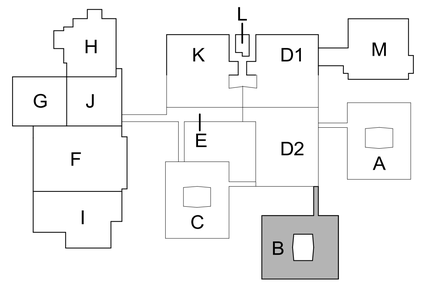
LOWER LEVEL - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

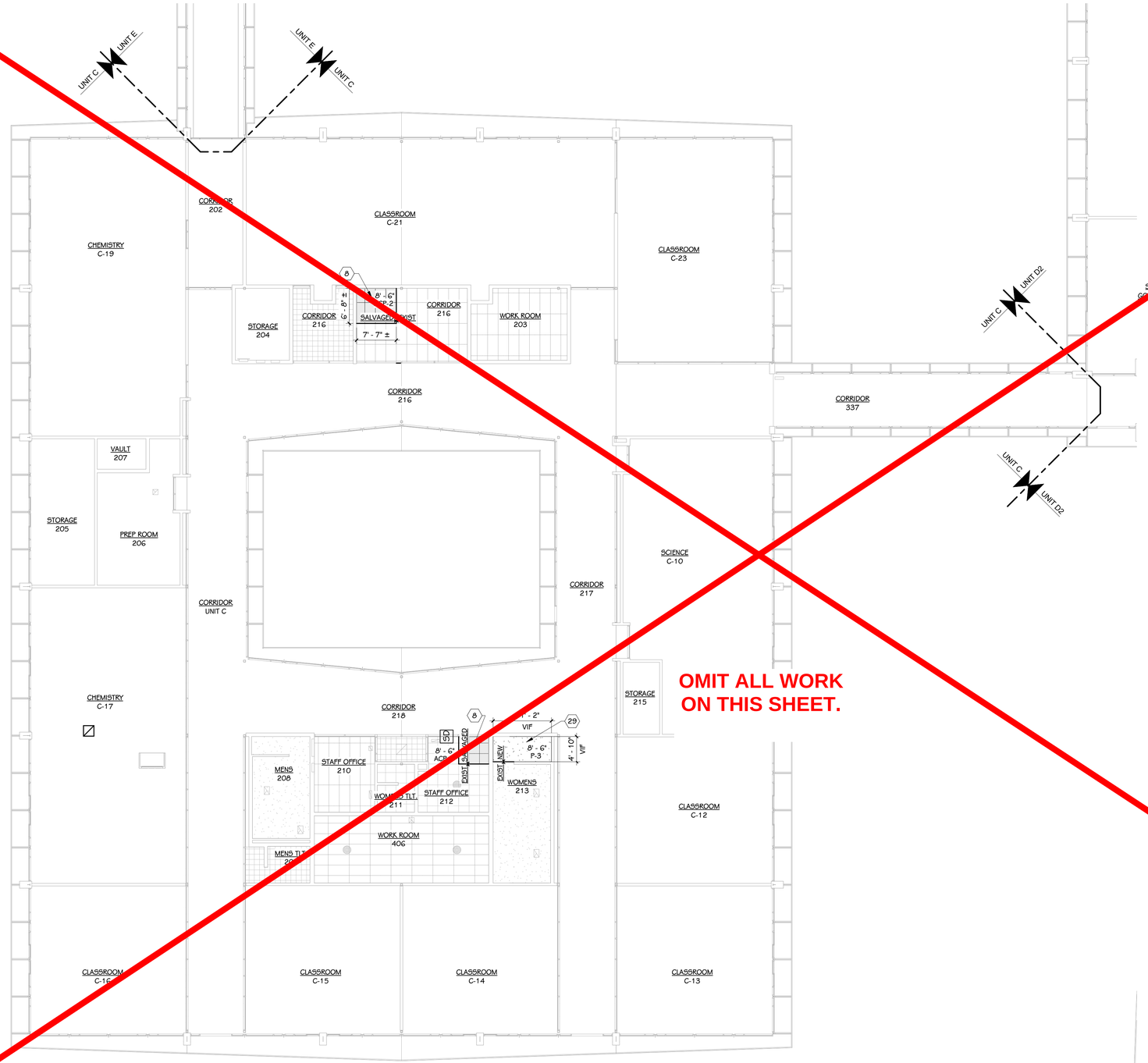
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 REFLECTED CEILING PLAN - UNIT B

DATE
NOVEMBER 22, 2022

SHEET NUMBER
A 201B
21-807.00



OMIT ALL WORK ON THIS SHEET.

LEVEL 1 REFLECTED CEILING PLAN - UNIT C
3/32" = 1'-0"

KEYED NOTES - NEW CONSTRUCTION

1 WHERE REQUIRED PATCH, PRIME AND PAINT WALL AT REMOVED MECH. EQUIPMENT TO MATCH EXISTING COORDINATE WITH NEW EQUIPMENT.
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16 REBUILD WALL AT REMOVED MTL. STUD WALL AND GYPSUM BOARD WITH NEW 5/8" GYPSUM BOARD OVER MTL STUD FRAMING TO MATCH EXISTING. PRIME AND PAINT ENTIRE WALL TO MATCH EXISTING.
17 CAP DUCTS AT VERTICAL PIT WALL WITH 8" CONCRETE DOWELED INTO THE SURROUNDING WALLS. FILL PIT WITH SAND AND FINISH WITH 4" OF CONCRETE SLAB DOWLED INTO THE ADJOINING EXISTING SLAB. FOR SLAB AND WALL DOWEL ALL SIDES WITH #4 DOWELS X 12" LONG AT 8" O.C. DRILL AND EPOXY WITH HILTI HIT HY 200 WITH 4" EMBEDMENT
18 5/8" IMPACT RESISTANT GYPSUM BOARD BULKHEAD OVER 3 5/8" METAL STUD FRAMING AT 16" O.C.
19 NEW 4" CMU WALL TO MATCH SURROUNDING EXISTING WALL. TOOTH IN, PRIME AND PAINT TO MATCH EXISTING.
20 AT REMOVED GLASS PANEL PROVIDE NEW CLEAR ANODIZED LOUVER INSERT, PROVIDE INSULATED METAL BLANK OFF PANEL AT ANY UNUSED LOUVER AREAS - SEE MECH. DWGS
21 IN EXISTING LOUVER OPENING INSTALL 3" INSULATED METAL PANEL (BLACK) TIGHT AGAINST LOUVER AND TIGHT IN OPENING. SECURE IN PLACE AND CAULK ALL SIDES. AT INSIDE FLUSH WITH INTERIOR FACE OF EXISTING CMU WALL ADD 4" CMU INFILL TOOTH IN ALL SIDES.
22 INSTALL SALVAGED WOOD TRIM PRIME AND PAINT TO MATCH EXISTING. SEE DETAILS.
23 MINOR FLOOR PATCHING REQUIRED AT REMOVED UVS, NEW CASEWORK, CHASE, OR OTHER MINOR FLOOR CONFIGURATION CHANGES. MATERIAL AVAILABLE OUT OF OWNER ATTIC STOCK.
24 BREAK METAL CLOSURE PIECE WITH HEMMED EDGES, GROUND SMOOTH, AND ROUNDED CORNERS, AND PAINTED TO MATCH NEW UV UNIT. ATTACH TO UV UNIT AND WINDOW FRAME AS REQUIRED. SIZE AND SHAPE TO BE CONFIRMED IN FIELD. HEIGHT TO BE FULL HEIGHT OF EXPOSED PORTION OF BLANK OFF PANEL.
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29 NEW SUSPENDED PLASTER CEILING AT EXISTING HEIGHT. PRIME AND PAINT TO MATCH EXISTING.
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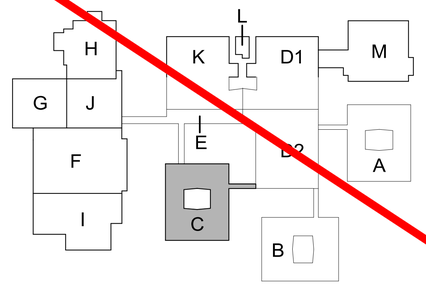
REFLECTED CEILING KEY

GYPSUM BOARD
ACP-1 - LAY-IN ACOUSTICAL TILE GRID
ACP-2 - SALVAGED LAY-IN ACOUSTICAL TILE GRID
OR — LIGHTING - REFER TO ELECTRICAL LIGHTING PLAN
MECHANICAL - REFER TO MECHANICAL SHEET METAL PLAN

REFLECTED CEILING GENERAL NOTES

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.

LOWER LEVEL - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

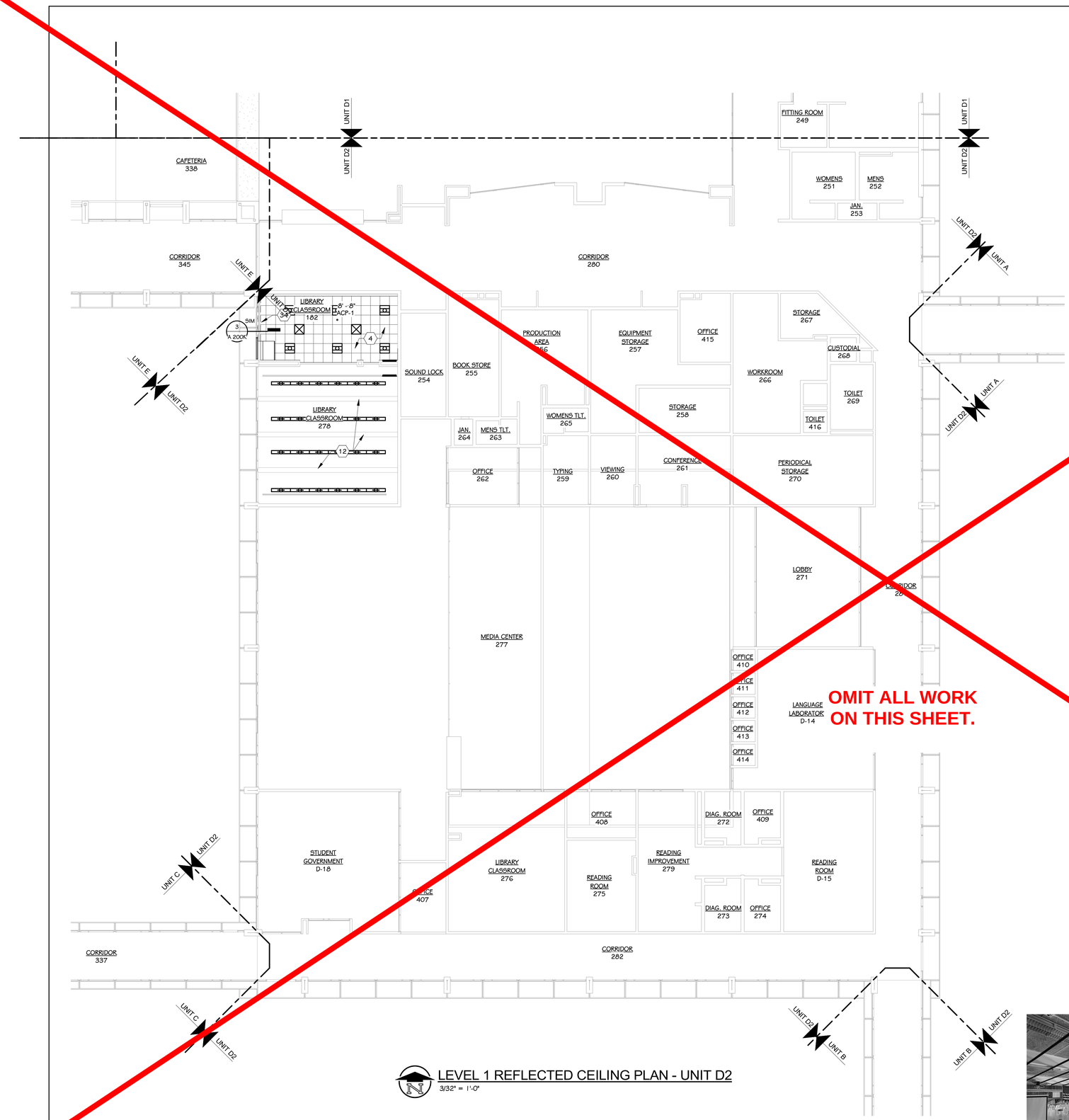
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 REFLECTED CEILING PLAN - UNIT C

DATE
NOVEMBER 22, 2022

SHEET NUMBER
A 201C
21-807.00



LEVEL 1 REFLECTED CEILING PLAN - UNIT D2
3/32" = 1'-0"

ROOM (278)

PAINT TECTUM CEILING SYSTEM ENTIRE ROOM INCLUDING TECTUM PANELS AND STEEL TEE'S.

PAINT ALL CEILING OR BEAM MOUNTED CONDUITS

KEYED NOTES - NEW CONSTRUCTION

1 WHERE REQUIRED PATCH, PRIME AND PAINT WALL AT REMOVED MECH. EQUIPMENT TO MATCH EXISTING COORDINATE WITH NEW EQUIPMENT.
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3 PATCH, PRIME AND PAINT WALL TO MATCH EXISTING.
4 NEW 2X2 ACP CEILING SYSTEM, INSTALL AT EXISTING CEILING HEIGHT.
5 PATCH PRIME AND PAINT WALL AT REMOVED MECH. EQUIPMENT AND REMOVED CASEWORK. PAINT TO MATCH EXISTING.
6 PROVIDE A CLEAR ANODIZED ALUM. CHASE UP ALONG THE SIDE OF THE COLUMN FULL HEIGHT. SIZED TO BE MINIMUM REQUIRED FOR MECHANICAL PIPES. MATCH EXISTING CHASES. FULL HEIGHT TO ABOVE CEILING.
7 INSTALL SALVAGED ALUM. CHASE ASSEMBLY UP ALONG THE WALL. INSTALL IN EXISTING LOCATION.
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REFLECTED CEILING KEY

GYPSUM BOARD

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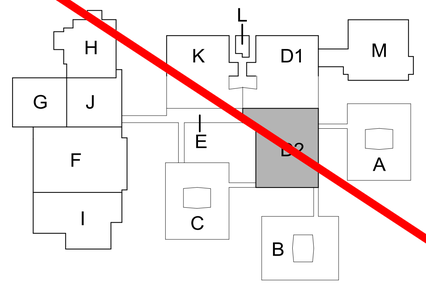
LOWER LEVEL - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

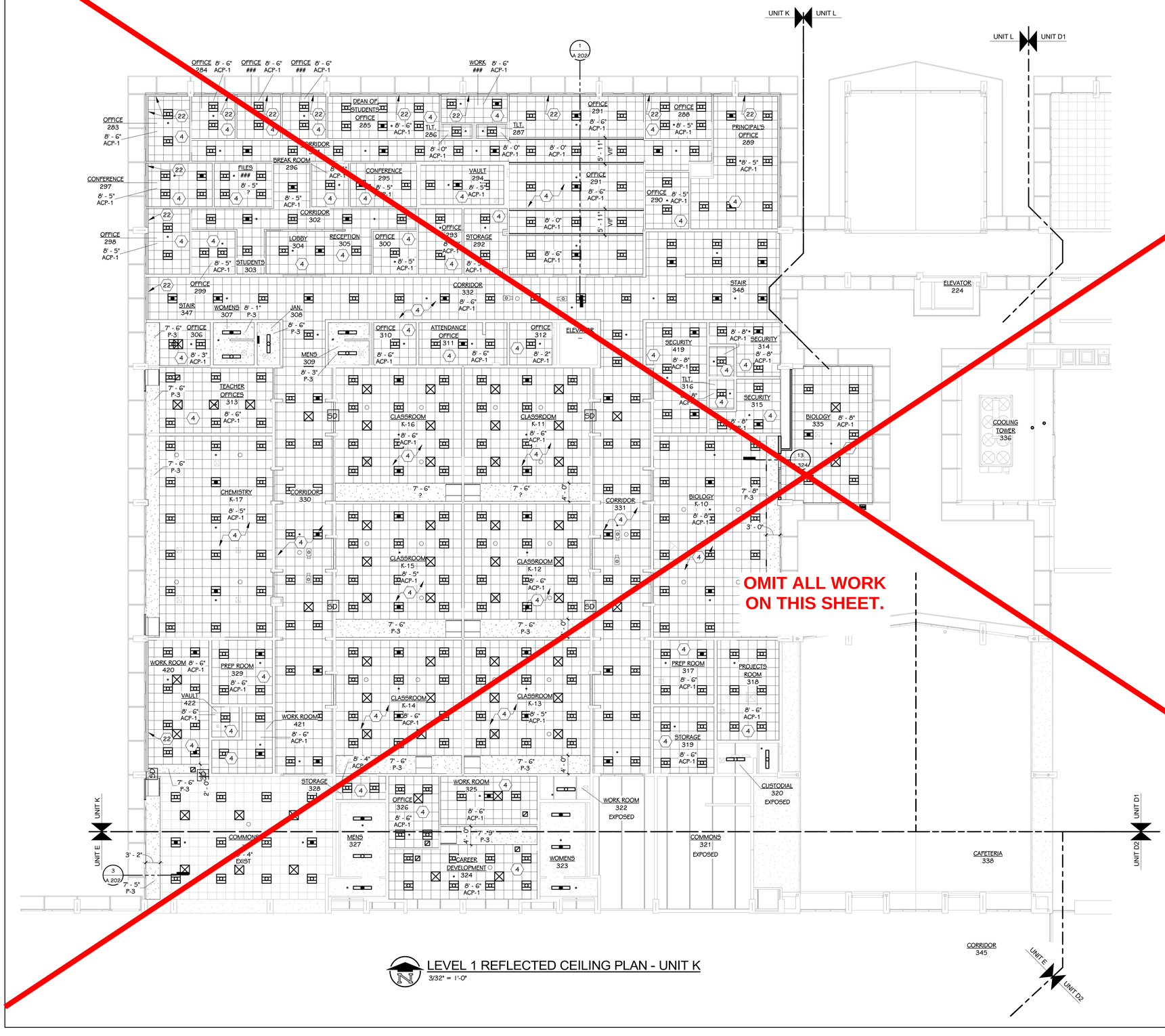
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 REFLECTED CEILING PLAN - UNIT D2

DATE
NOVEMBER 22, 2022

SHEET NUMBER
A 201D2
21-807.00



LEVEL 1 REFLECTED CEILING PLAN - UNIT K
3/32" = 1'-0"

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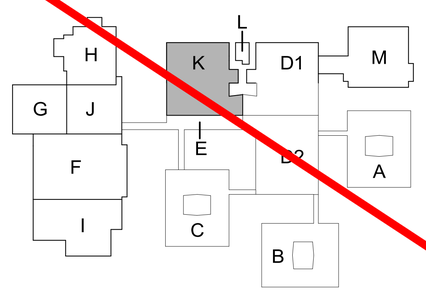
LOWER LEVEL - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
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SHEET TITLE
LEVEL 1 REFLECTED CEILING PLAN - UNIT K

DATE
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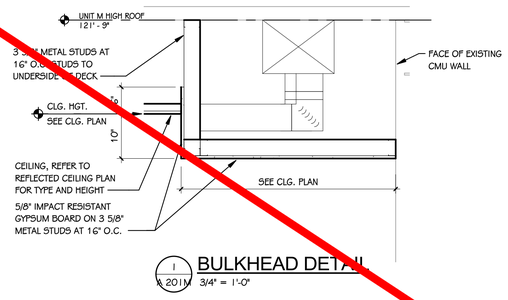
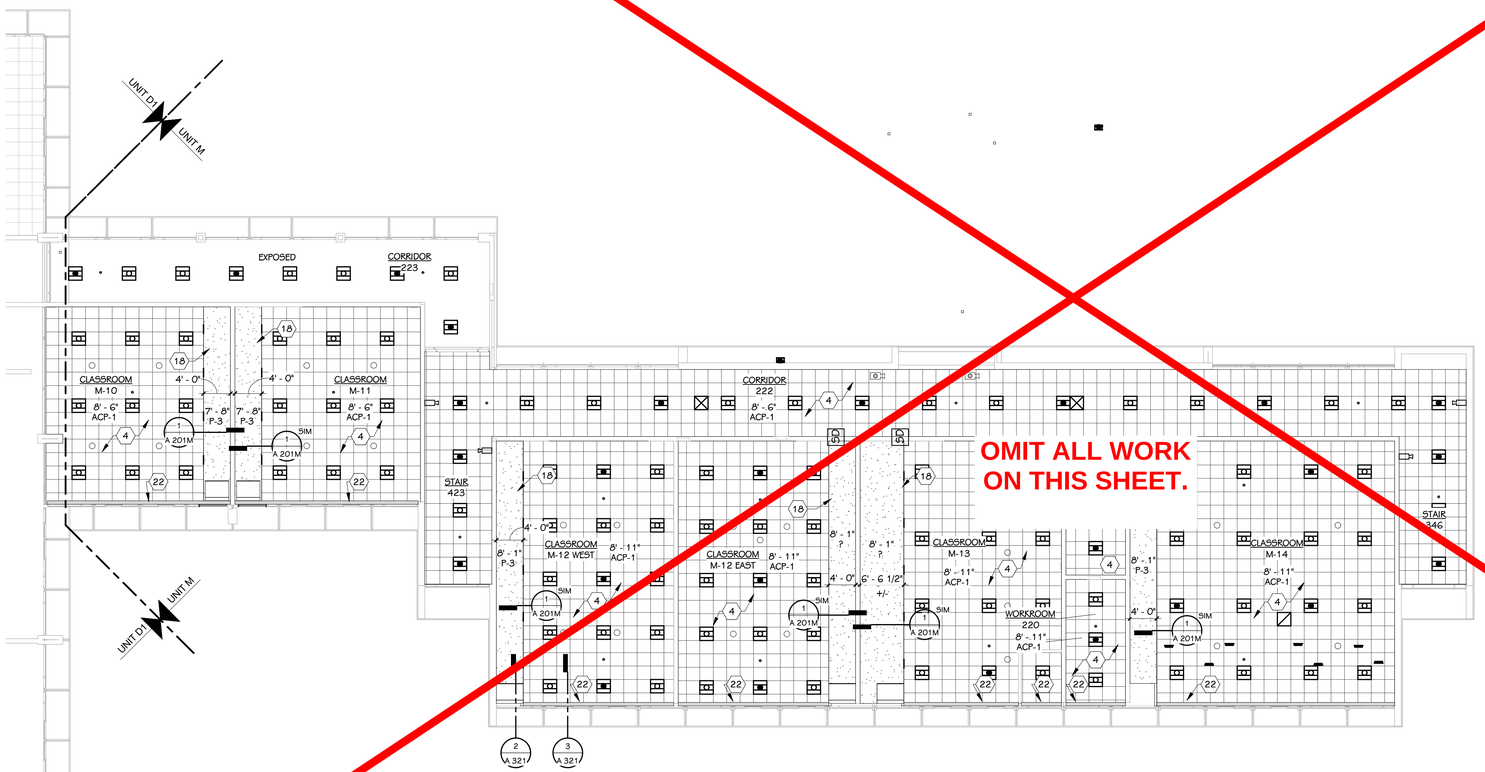
SHEET NUMBER
A 201K
21-807.00



1 / A 201M BULKHEAD DETAIL
3/4" = 1'-0"



LEVEL 1 REFLECTED CEILING PLAN - UNIT M
3/32" = 1'-0"

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30 AT REMOVED DIFUSER OPENING, PROVIDE METAL STUD FRAMING, GYPSUM BOARD AND PRIME AND PAINT TO MATCH EXISTING. PRIME AND PAINT ENTIRE WALL TO ABOVE CEILING TO MATCH EXISTING.
31 NEW EXHAUST FAN / RELIEF HOOD ON EXISTING ROOF CURB FLASH WEATHER TIGHT
31A NEW EXHAUST FAN/RELIEF HOOD OR OTHER MECHANICAL EQUIPMENT ON NEW ROOF CURB. DEMO EXISTING ROOF AS REQUIRED. PATCH NEW CURB INTO EXISTING ROOF WEATHER TIGHT - SEE MECHANICAL DRAWINGS. SEE ROOF CURB AND PENETRATION DETAILS THIS SHEET.
32 REINSTALL SALVAGED CASEWORK AND COUNTERTOP
33 EXISTING UV TO BE REMOVED AND INSTALL NEW UV. REINSTALL EXISTING SALVAGED COVER - SEE PICTURE
34 INSTALL NEW PRIMED AND PAINTED WOOD TRIM TO MATCH EXISTING. SEE DETAILS.
35 NEW ACCESS PANELS 18"x18" - PRIME AND PAINT TO MATCH CEILING - COORD. FINAL LOCATION WITH MECHANICAL

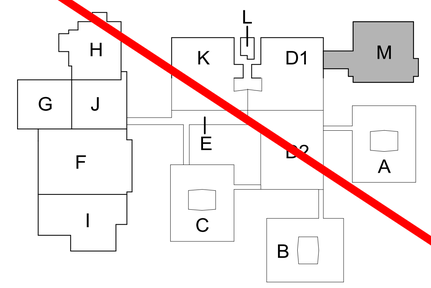
REFLECTED CEILING KEY

GYPSUM BOARD
ACP-1 - LAY-IN ACOUSTICAL TILE GRID
ACP-2 - SALVAGED LAY-IN ACOUSTICAL TILE GRID
OR — LIGHTING - REFER TO ELECTRICAL LIGHTING PLAN
MECHANICAL - REFER TO MECHANICAL SHEET METAL PLAN

REFLECTED CEILING GENERAL NOTES

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.

LOWER LEVEL - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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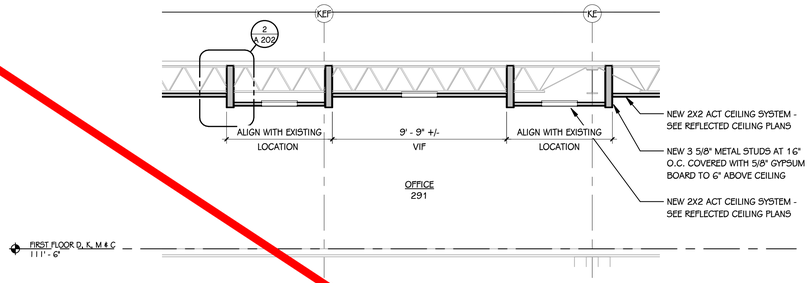
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

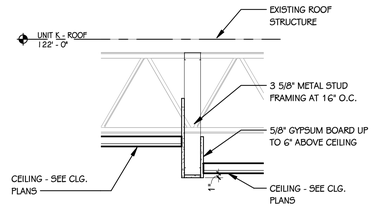
SHEET TITLE
LEVEL 1 REFLECTED CEILING PLAN - UNIT M

DATE
NOVEMBER 22, 2022

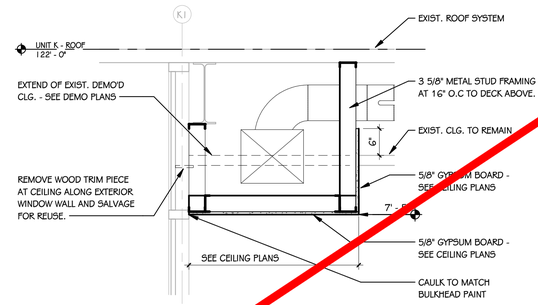
SHEET NUMBER
A 201M
21-807.00



1 / A 202 SECTION - OFFICE
1/4" = 1'-0"



2 / A 202 BULKHEAD DETAIL
3/4" = 1'-0"



3 / A 202 BULKHEAD DETAIL
3/4" = 1'-0"

OMIT ALL WORK ON THIS SHEET.

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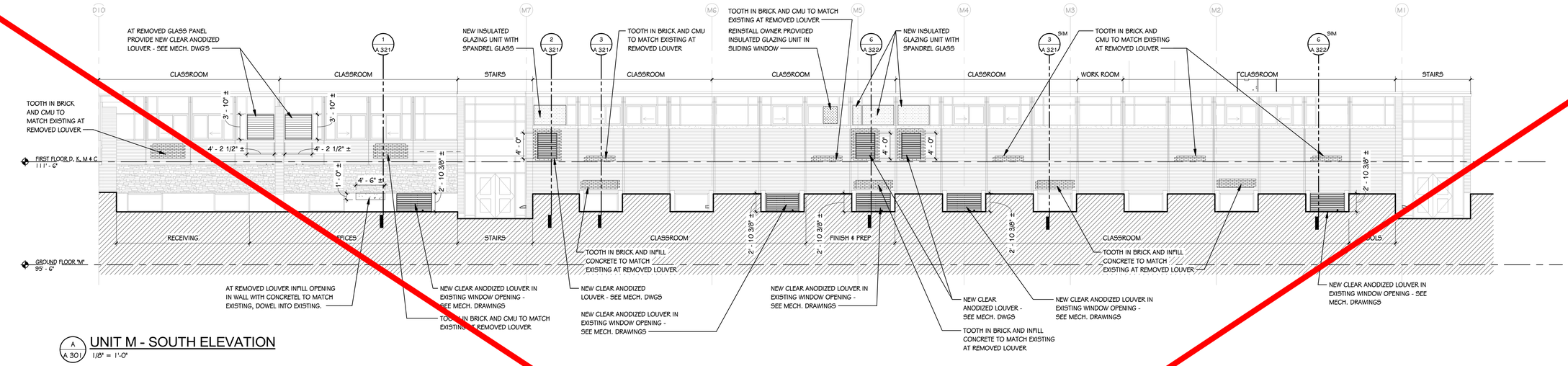
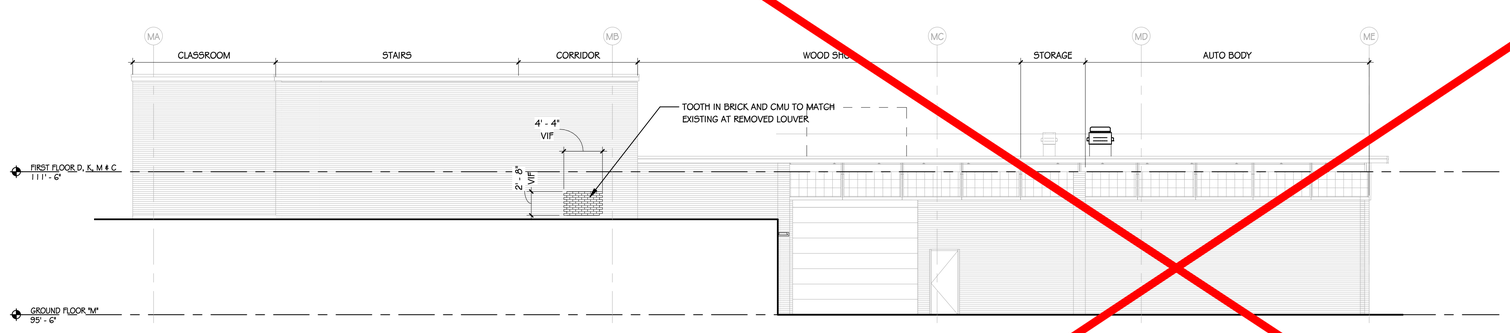
SHEET TITLE
CEILING DETAILS

DATE
NOVEMBER 22, 2022

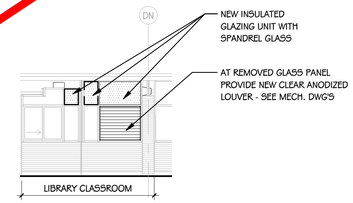
SHEET NUMBER
A 202
21-807.00



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

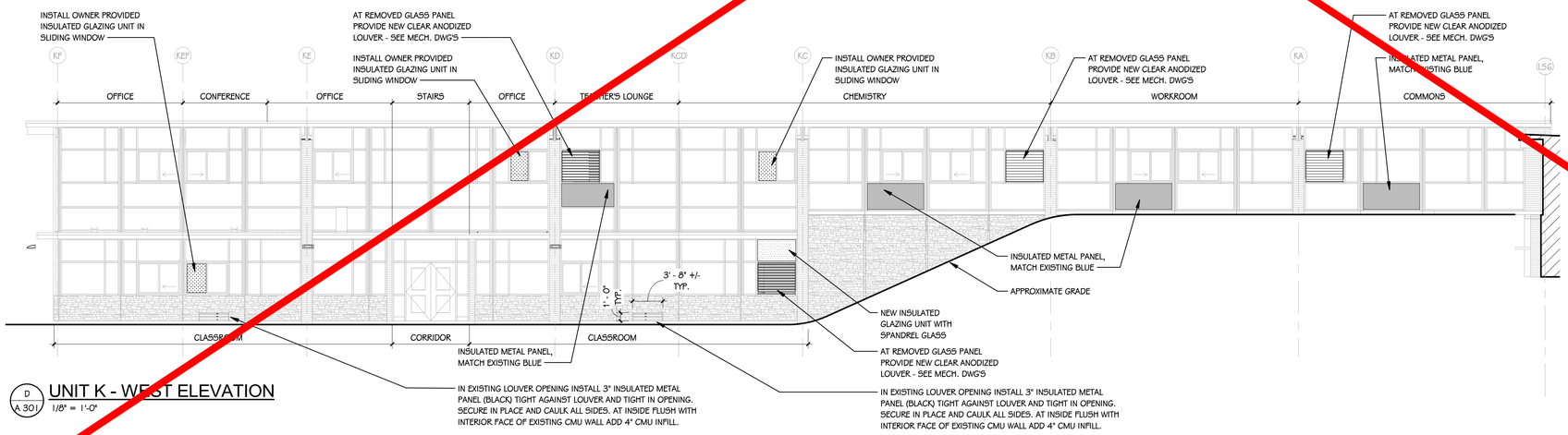


B / A 301 UNIT M - EAST ELEVATION
1/8" = 1'-0"



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

OMIT ALL WORK ON THIS SHEET.



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

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EXTERIOR ELEVATIONS AND DETAILS

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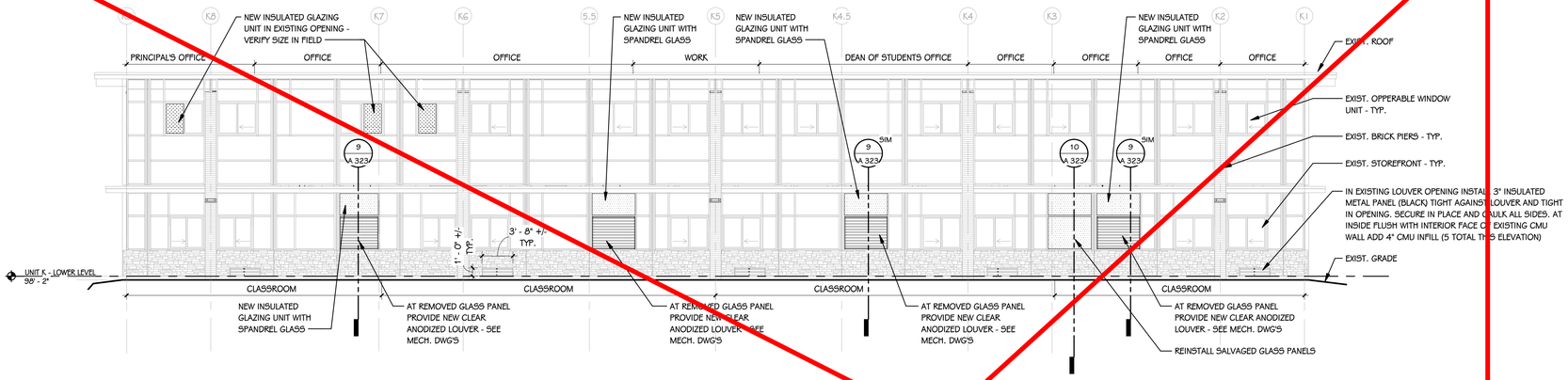
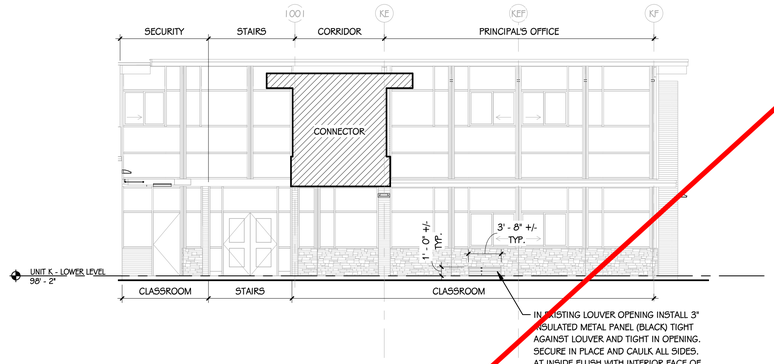
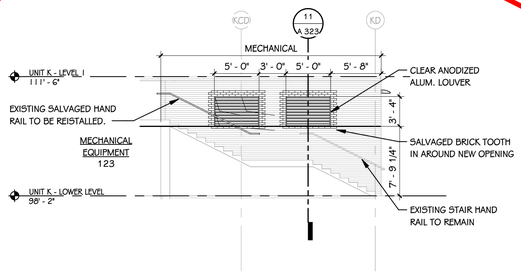
21-807.00



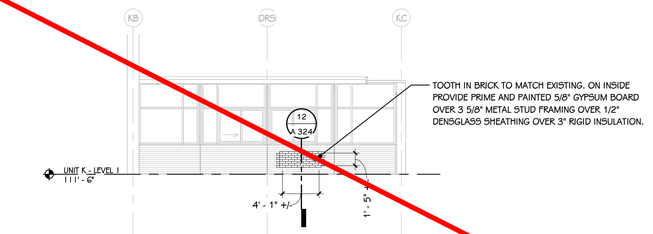
E A 302 **UNIT K - NORTH ELEVATION**
1/8" = 1'-0"



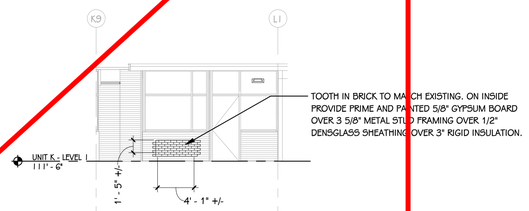
F A 302 **UNIT K - EAST ELEVATION**
1/8" = 1'-0"



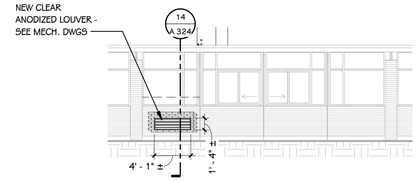
G A 302 **UNIT K - EAST ELEVATION - MECH. RM.**
1/8" = 1'-0"



H A 302 **PARTIAL EXTERIOR ELEVATION**
1/8" = 1'-0"



J A 302 **PARTIAL EXTERIOR ELEVATION**
1/8" = 1'-0"



K A 302 **PARTIAL EXTERIOR ELEVATION - UNIT B**
1/8" = 1'-0"

Project B project scope

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Kalamazoo, Michigan

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EXTERIOR ELEVATIONS AND DETAILS

DATE
NOVEMBER 22, 2022

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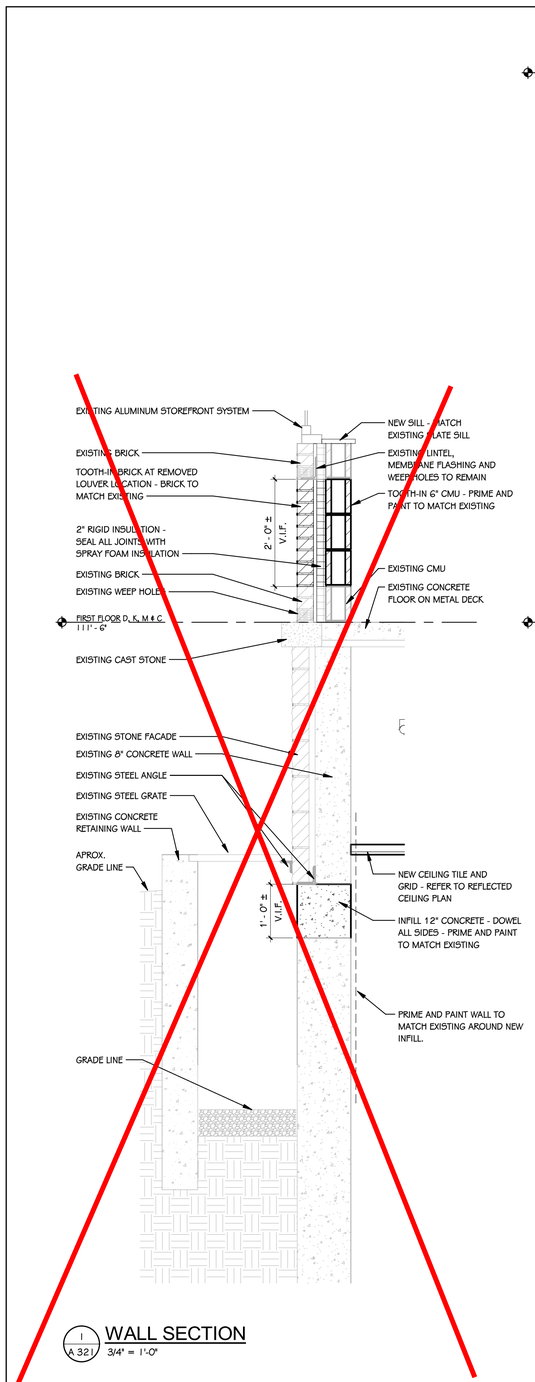
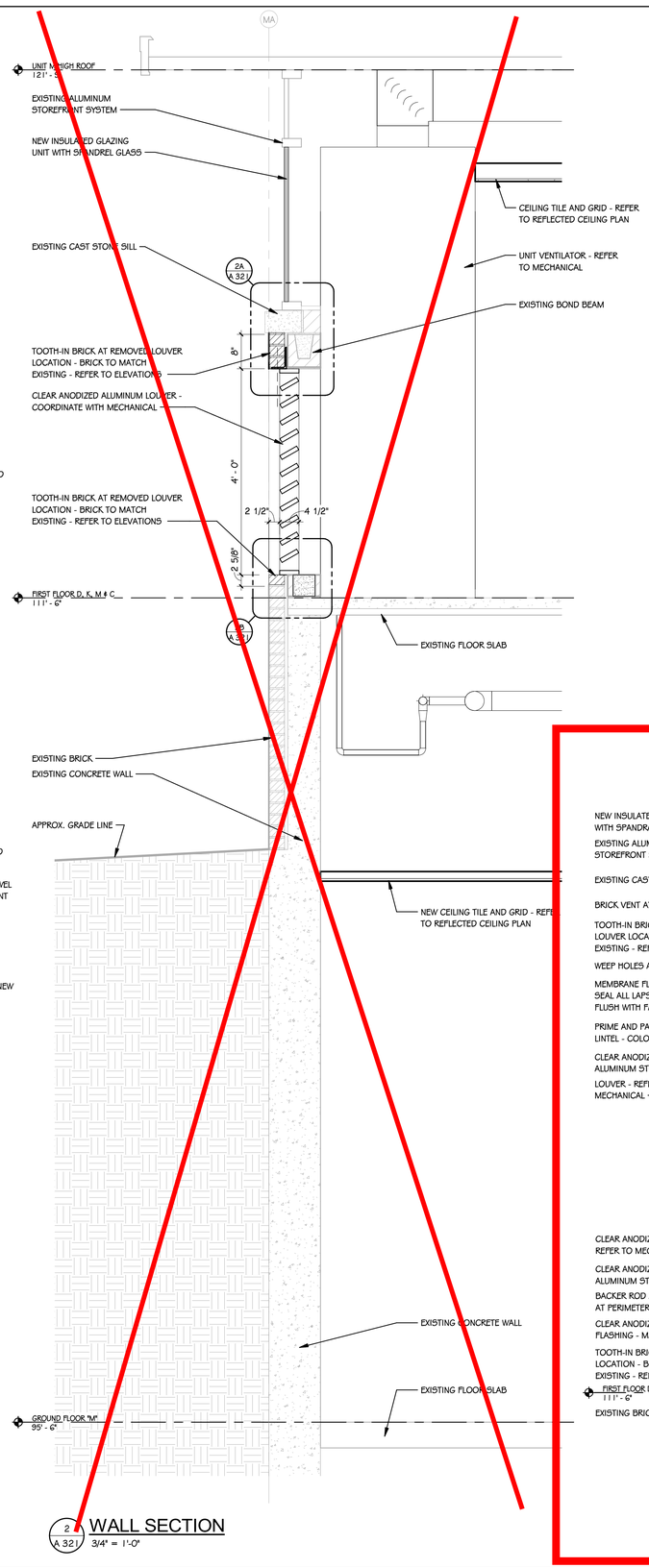
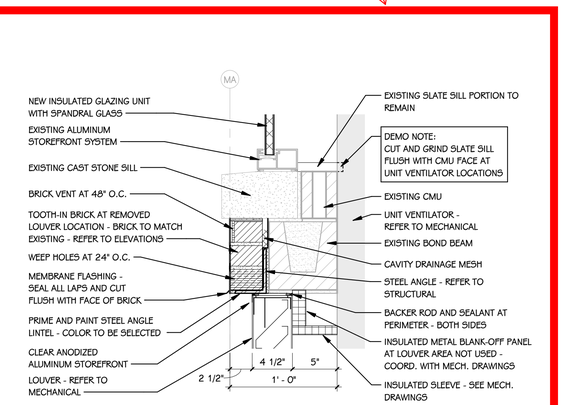


1 / A 321 WALL SECTION
3/4" = 1'-0"

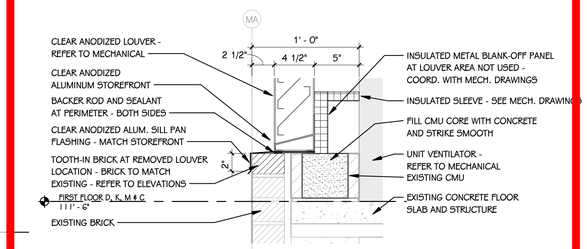


2 / A 321 WALL SECTION
3/4" = 1'-0"

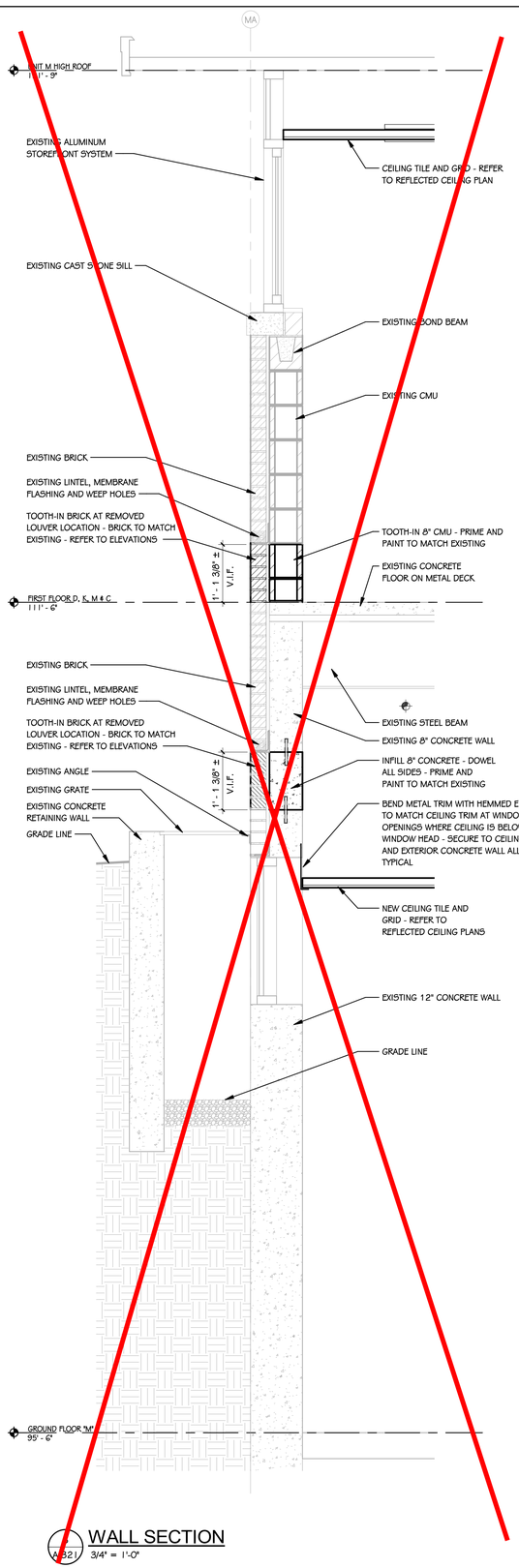
Project B project scope



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



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



1 / A 321 WALL SECTION
3/4" = 1'-0"

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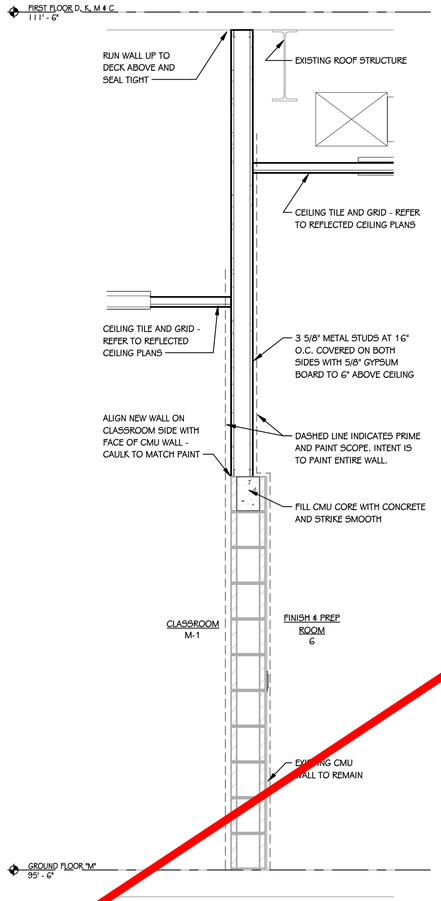
Kalamazoo, Michigan

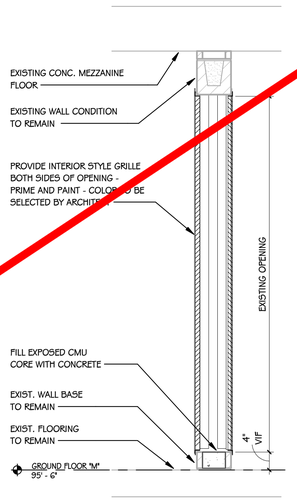
SHEET TITLE
WALL SECTIONS AND DETAILS

DATE
NOVEMBER 22, 2022

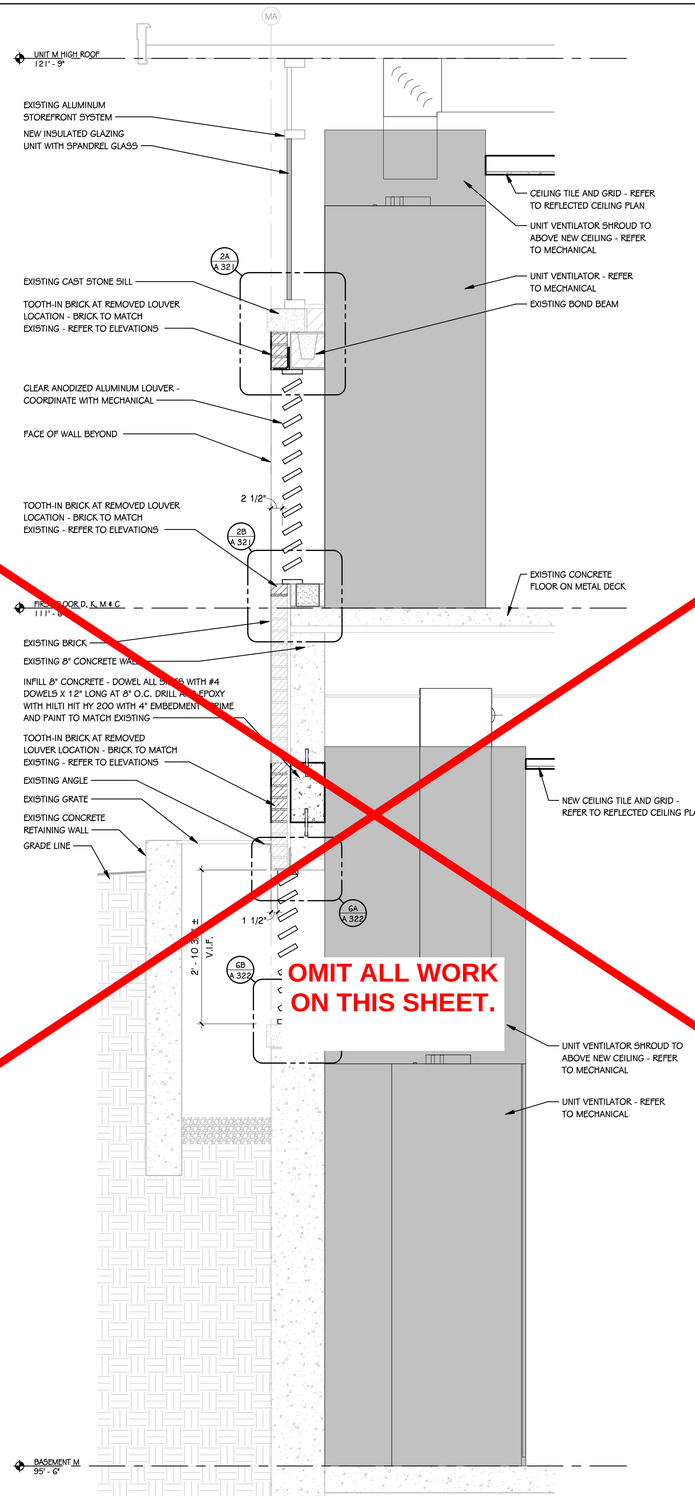
SHEET NUMBER
A 321
21-807.00



4 A 322 WALL SECTION
3/4" = 1'-0"



5 A 322 WALL SECTION
3/4" = 1'-0"



6 A 322 WALL SECTION
3/4" = 1'-0"

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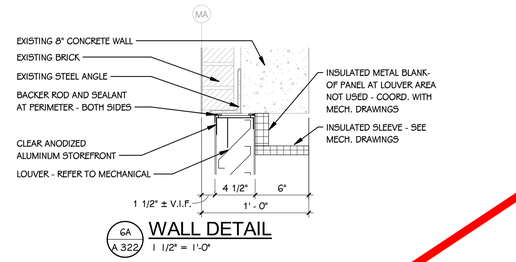
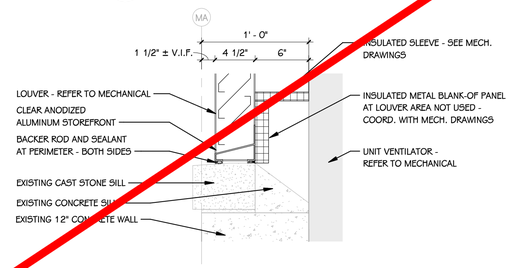
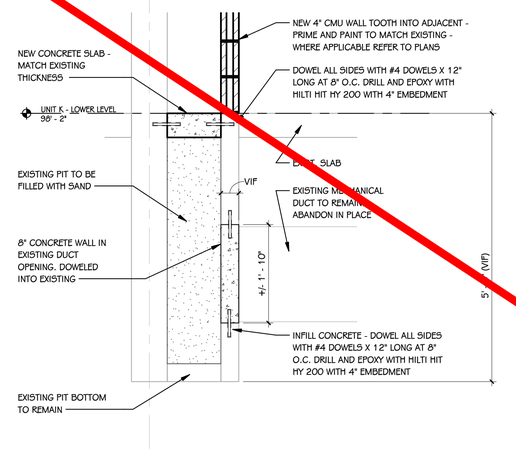


6A A 322 WALL DETAIL
1 1/2" = 1'-0"



6B A 322 WALL DETAIL
1 1/2" = 1'-0"



7 A 322 WALL SECTION
3/4" = 1'-0"

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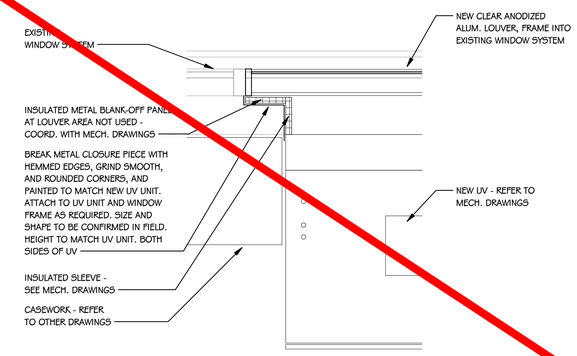
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

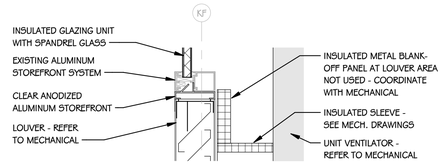
SHEET TITLE
WALL SECTIONS AND DETAILS

DATE
NOVEMBER 22, 2022

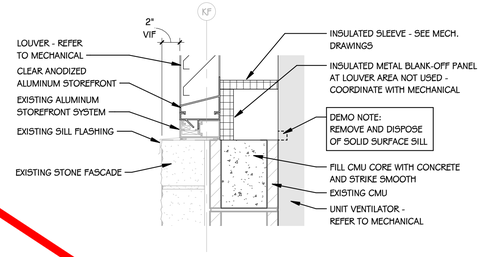
SHEET NUMBER
A 322
21-807.00



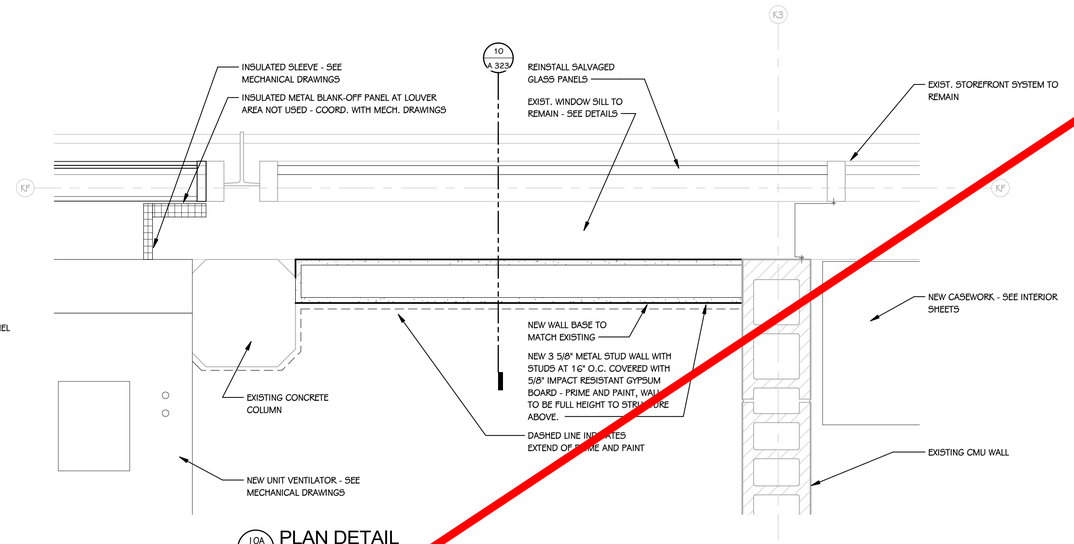
9A A 323 **PLAN DETAIL**
1" = 1'-0"



9B A 323 **WALL DETAIL**
1 1/2" = 1'-0"



9C A 323 **WALL DETAIL**
1 1/2" = 1'-0"



10A A 323 **PLAN DETAIL**
1 1/2" = 1'-0"

9 A 323 **WALL SECTION**
3/4" = 1'-0"

10 A 323 **WALL SECTION**
3/4" = 1'-0"

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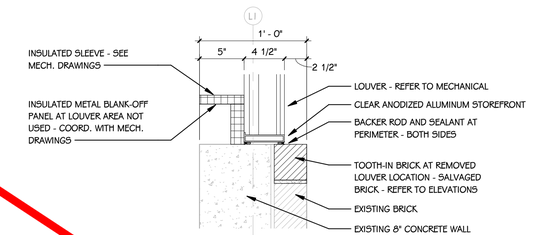
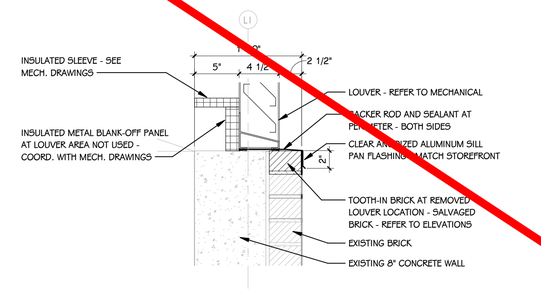
11 A 323 **WALL SECTION**
3/4" = 1'-0"

11A A 323 **WALL DETAIL**
1 1/2" = 1'-0"



9 A 323 **JAMB DETAIL**
1 1/2" = 1'-0"



11C A 323 **WALL DETAIL**
1 1/2" = 1'-0"

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OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
WALL SECTIONS AND DETAILS

DATE
NOVEMBER 22, 2022

SHEET NUMBER
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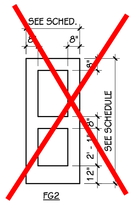
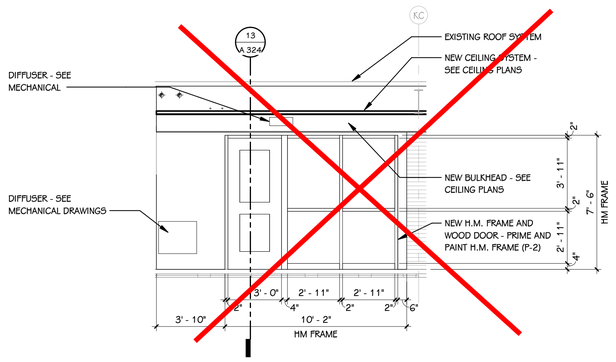
21-807.00

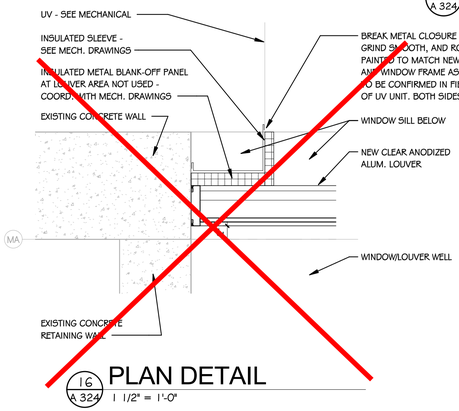
DOOR SCHEDULE - UNIT K FIRST FLOOR

NUMBER		ROOM	FIRE-RATING	DOOR			SIZE		FRAME			DETAILS			GLASS	HDWR. SET	REMARKS
DOOR	ROOM	NAME	DOOR	TYPE	MAT	FIN	WIDTH	HEIGHT	ELEV	MAT	FIN	HEAD	JAMB	SILL			
335	335	BIOLOGY	60 MIN.	FG2	WD.		3' - 0"	7' - 4"	15/A324	H.M.	P-2	13/A324	13A & 13B/A324		S.C.S.D.	1.0	

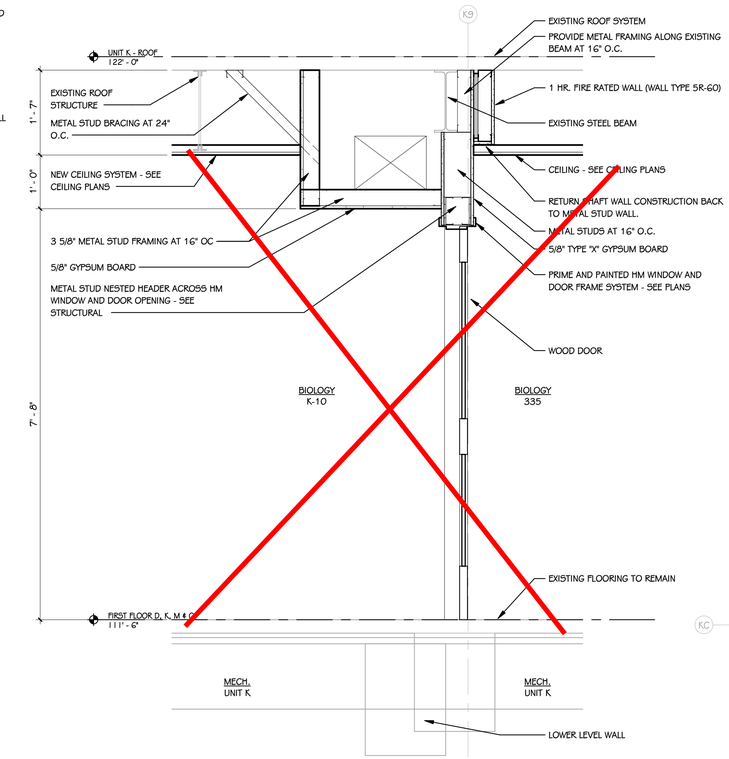




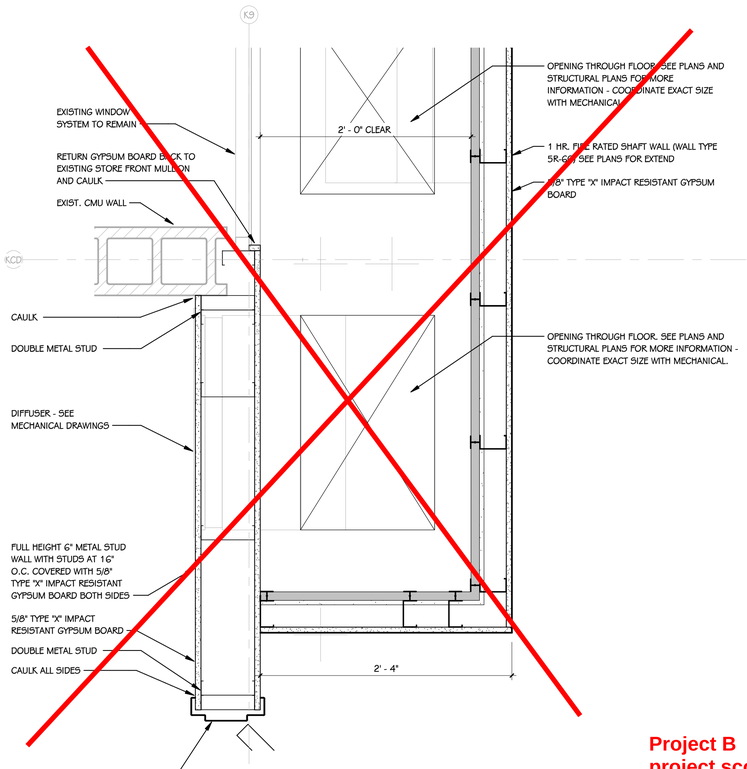
15 / A 324 **INTERIOR ELEVATION**
1/4" = 1'-0"



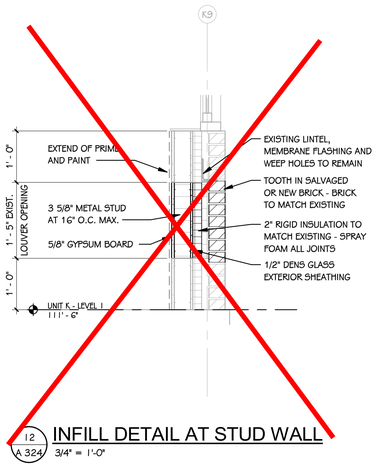
16 / A 324 **PLAN DETAIL**
1 1/2" = 1'-0"



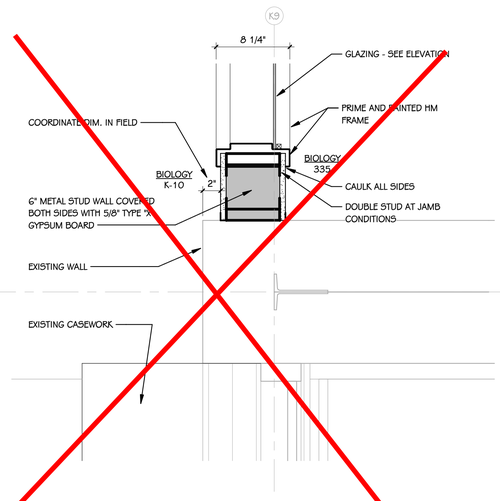
13 / A 324 **WALL SECTION**
3/4" = 1'-0"



13A / A 324 **PLAN DETAIL**
1 1/2" = 1'-0"

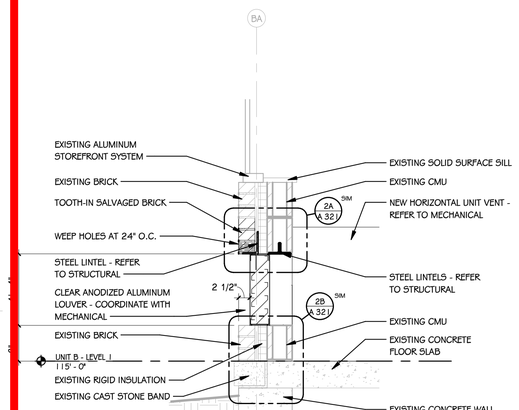


12 / A 324 **INFILL DETAIL AT STUD WALL**
3/4" = 1'-0"



13B / A 324 **PLAN DETAIL**
1 1/2" = 1'-0"

Project B
project scope



14 / A 324 **WALL SECTION**
3/4" = 1'-0"

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Addendum No. 2 December 16, 2022

ISSUED FOR	DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
WALL SECTIONS AND DETAILS

DATE
NOVEMBER 22, 2022

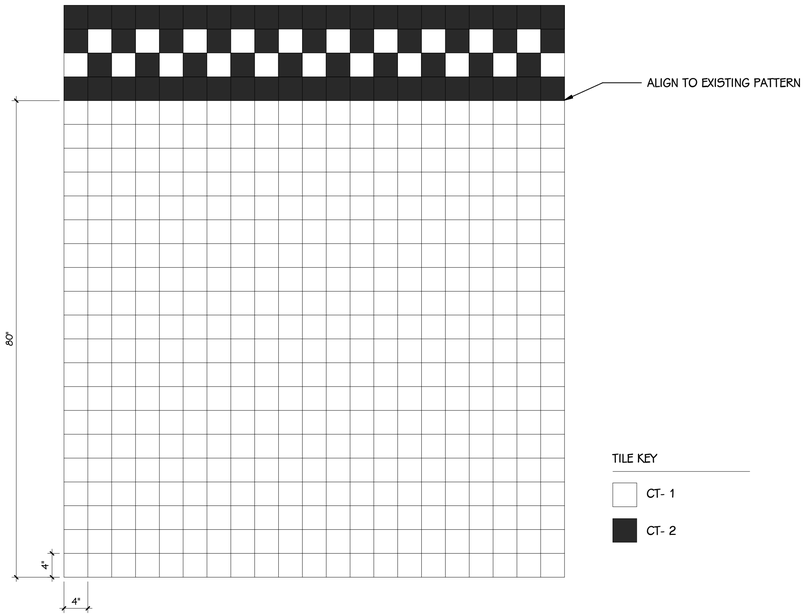
SHEET NUMBER
A 324
21-807.00

MATERIAL SELECTION SCHEDULE

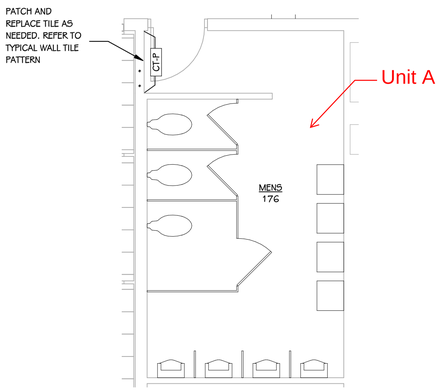
ABBREV	ITEM	MANUFACTURER	PATTERN	COLOR	PRODUCT NO.	SIZE	SINGLE SOURCE	BASIS OF DESIGN	ADDITIONAL MANUFACTURERS	REMARKS
ACP-1	ACOUSTICAL CEILING PANEL	ARMSTRONG	CORTEGA	WHITE	770	2' X 2'	X			
CT-1	CERAMIC TILE	--	--	WHITE	--	4" X 4"	X			
CT-2	CERAMIC TILE	--		NAVY BLUE	--	4" X 4"	X			
EP-1	EPOXY COUNTERTOP	--	--	--	--	--		X		
M-1	METAL PAINT	--	--	NAVY BLUE	--	--		X		
P-1	PAINT	SHERWIN WILLIAMS	--	MATCH EXISTING	--	--	X			--
PL-1	PLASTIC LAMINATE	--	TO MATCH EXISTING	--	--	--	X			--
TZ-1	TERRAZZO	--	TO MATCH EXISITNG	--	--	--	X			
VCT-1	VINYL COMPOSITION TILE	ARMSTRONG	IMPERIAL TEXTURE	SHELTER WHITE				X	AMG	
VCT-2	VINYL COMPOSITION TILE	ARMSTRONG	IMPERIAL TEXTURE	LUNAR BLUE	51932					

NOTES:

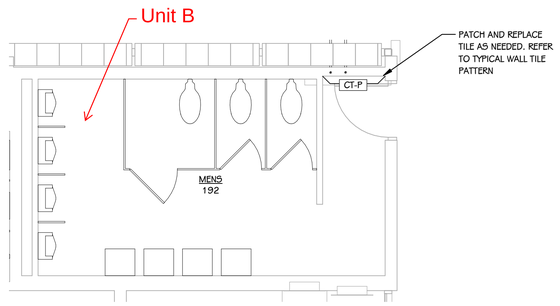
- NO COMPARABLE PRODUCTS WILL BE REVIEWED FOR PRODUCTS DESIGNATED AS SINGLE SOURCE.
- COMPARABLE PRODUCTS WILL BE REVIEWED FOR ITEMS LISTED AS BASIS OF DESIGN. COMPARABLE PRODUCTS ARE REQUIRED TO MEET ANY MINIMUM PERFORMANCE REQUIREMENTS LISTED IN REMARKS AND DESIGN ATTRIBUTES OF SPECIFIED PRODUCT.
- REFER TO PRODUCT SPECIFICATION FOR TRIMS AND ACCESSORIES ASSOCIATED WITH SPECIFIED PRODUCTS ABOVE.



1/1001 CP-P - TYPICAL WALL TILE PATTERN
1" = 1'-0"

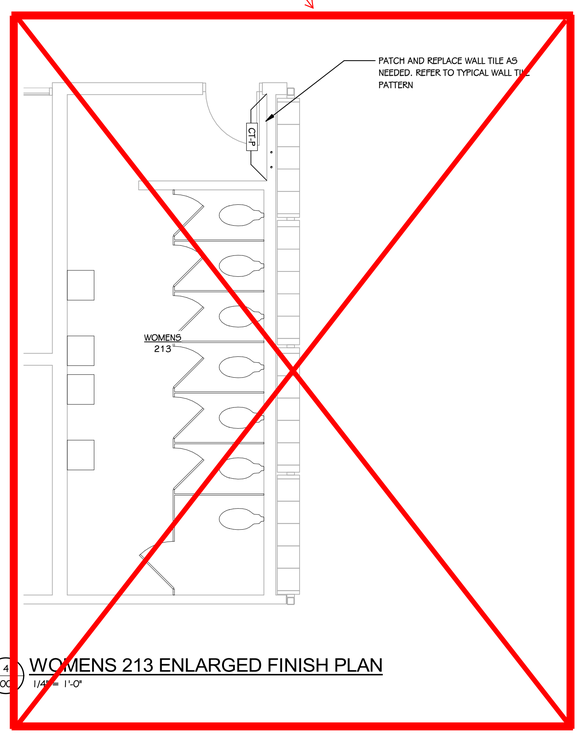


2/1001 MENS 176 ENLARGED FINISH PLAN
1/4" = 1'-0"



3/1001 MENS 192 ENLARGED FINISH PLAN
1/4" = 1'-0"

Unit C - Not in project scope



4/1001 WOMENS 213 ENLARGED FINISH PLAN
1/4" = 1'-0"

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ISSUED FOR DATE

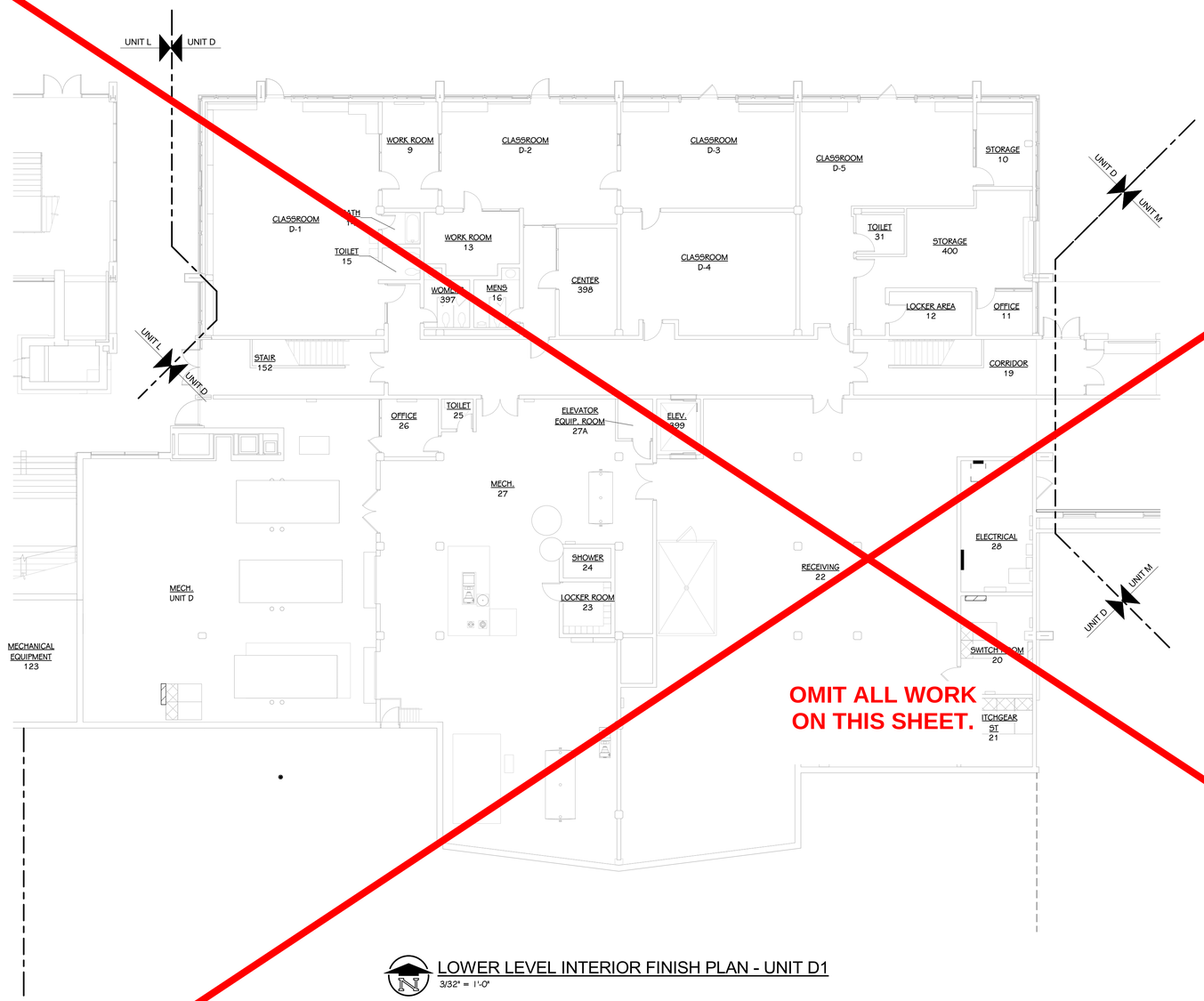
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
MATERIAL SELECTION SCHEDULE AND INTERIOR DETAILS

DATE
NOVEMBER 22, 2022

SHEET NUMBER
1001
21-807.00



OMIT ALL WORK ON THIS SHEET.

LOWER LEVEL INTERIOR FINISH PLAN - UNIT D1
3/32" = 1'-0"

FINISH KEY

P-# — WALL FINISH
RB-# — FLOOR BASE
CPT-# — FLOOR FINISH

REFER TO MATERIAL SELECTION SCHEDULE FOR FINISH INFORMATION

PL-# — COUNTER FINISH
PL-# — CABINET FINISH (BASE AND UPPER)

P-# — INDICATES EXTENT OF ATYPICAL FINISH

VCT / CPT — INDICATES FLOOR MATERIAL TRANSITION
NOTE - REFER TO MATERIAL SELECTION SCHEDULE REMARKS FOR FLOOR TRANSITION TYPE

MULTI — INDICATES MULTIPLE MATERIAL TYPES ON A SURFACE. REFER TO DETAIL OR ELEVATIONS.

- P — INDICATES MATERIAL PATTERN. REFER TO DETAILS

FINISH PLAN GENERAL NOTES

1. REFER TO ARCHITECTURAL FLOOR PLANS AND SPECIFICATION FOR ADDITIONAL INFORMATION ON CONSTRUCTION MATERIALS.
2. REFER TO REFLECTED CEILING PLANS FOR CEILING FINISH AND HEIGHTS.
3. AT AREAS OF EXPOSED CEILING WHERE THE DUCT WORK AND DIFFUSERS ARE TO BE PAINTED, COORDINATE WITH MECHANICAL SPECIFICATIONS AND REFER TO THE REFLECTED CEILING PLANS FOR PAINT COLORS.
4. REFER TO DOOR SCHEDULE FOR FINISH ON DOORS AND FRAMES.
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6. FINISH TAGS APPLY TO LIKE MATERIALS IN ENTIRE ROOM. I.E. CASEWORK TAG MAY ONLY CALLOUT ONE RUN OF CASEWORK, BUT ALL CASEWORK IN ROOM RECEIVE THE SAME FINISHES, UNLESS TAGGED DIFFERENTLY.
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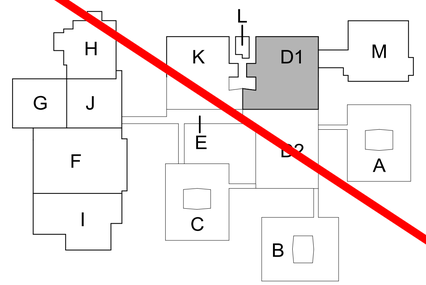
8. PATCH EXISTING FLOORING AND BASE AROUND NEW CONSTRUCTION. USE OWNERS ATTIC STOCK. REFER TO ARCHITECTURAL AND MECHANICAL SHEETS FOR EXTENT.
9. RUBBER BASE (RB) TO BE REMOVED BUT NOT REPLACED AT NEW UV UNITS.

LOWER LEVEL - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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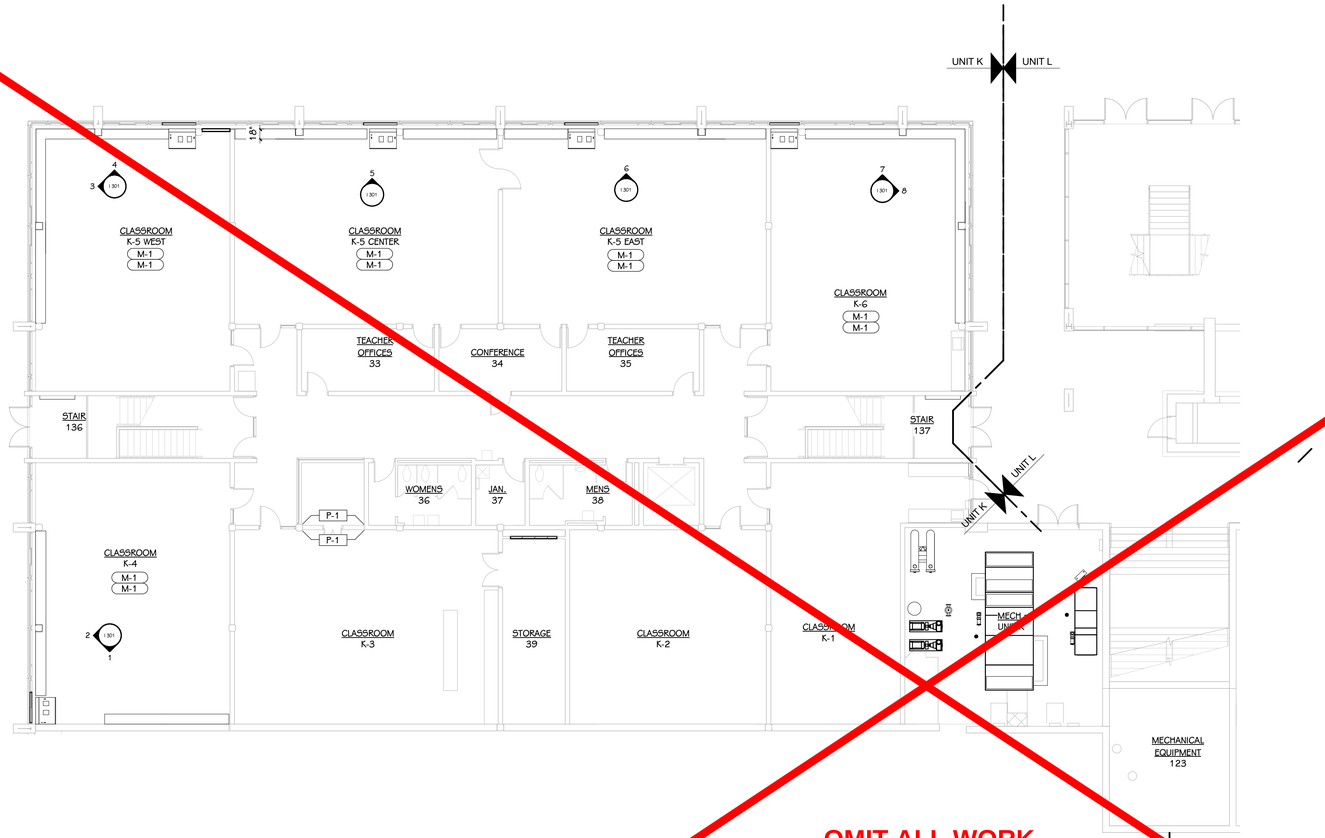
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL FINISH PLAN - UNIT D1

DATE
NOVEMBER 22, 2022

SHEET NUMBER
A100D1
21-807.00



OMIT ALL WORK ON THIS SHEET.

LOWER LEVEL INTERIOR FINISH PLAN - UNIT K
3/32" = 1'-0"

FINISH KEY

P-# — WALL FINISH
RB-# — FLOOR BASE
CPT-# — FLOOR FINISH

REFER TO MATERIAL SELECTION SCHEDULE FOR FINISH INFORMATION

PL-# — COUNTER FINISH
PL-# — CABINET FINISH (BASE AND UPPER)

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FINISH PLAN GENERAL NOTES

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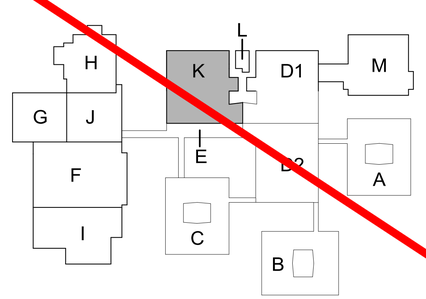
9. RUBBER BASE (RB) TO BE REMOVED BUT NOT REPLACED AT NEW UV UNITS.

LOWER LEVEL - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL FINISH PLAN - UNIT K

DATE
NOVEMBER 22, 2022

SHEET NUMBER
A100K
21-807.00

LEVEL 1 INTERIOR FINISH PLAN - UNIT A
3/32" = 1'-0"

FINISH KEY

REFER TO MATERIAL SELECTION SCHEDULE FOR FINISH INFORMATION

- P-# / RB-# / CPT-# — WALL FINISH / FLOOR BASE / FLOOR FINISH
- PL-# / PL-# — COUNTER FINISH / CABINET FINISH (BASE AND UPPER)
- P-# — INDICATES EXTENT OF ATYPICAL FINISH
- VCT / CPT — INDICATES FLOOR MATERIAL TRANSITION. NOTE - REFER TO MATERIAL SELECTION SCHEDULE REMARKS FOR FLOOR TRANSITION TYPE
- MULTI — INDICATES MULTIPLE MATERIAL TYPES ON A SURFACE. REFER TO DETAIL OR ELEVATIONS.
- - P — INDICATES MATERIAL PATTERN. REFER TO DETAILS

FINISH PLAN GENERAL NOTES

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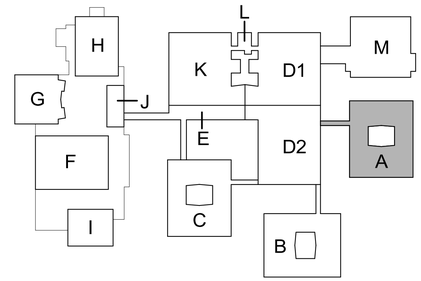
9. RUBBER BASE (RB) TO BE REMOVED BUT NOT REPLACED AT NEW UV UNITS.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 FINISH PLAN - UNIT A

DATE
NOVEMBER 22, 2022

SHEET NUMBER
I 101A
21-807.00

LEVEL 1 INTERIOR FINISH PLAN - UNIT B
3/32" = 1'-0"

FINISH KEY

P-# — WALL FINISH
RB-# — FLOOR BASE
CPT-# — FLOOR FINISH

REFER TO MATERIAL SELECTION SCHEDULE FOR FINISH INFORMATION

PL-# — COUNTER FINISH
PL-# — CABINET FINISH (BASE AND UPPER)

P-# — INDICATES EXTENT OF ATYPICAL FINISH

VCT / CPT — INDICATES FLOOR MATERIAL TRANSITION
NOTE - REFER TO MATERIAL SELECTION SCHEDULE REMARKS FOR FLOOR TRANSITION TYPE

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- P — INDICATES MATERIAL PATTERN. REFER TO DETAILS

FINISH PLAN GENERAL NOTES

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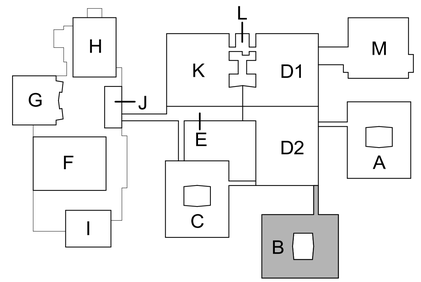
9. RUBBER BASE (RB) TO BE REMOVED BUT NOT REPLACED AT NEW UV UNITS.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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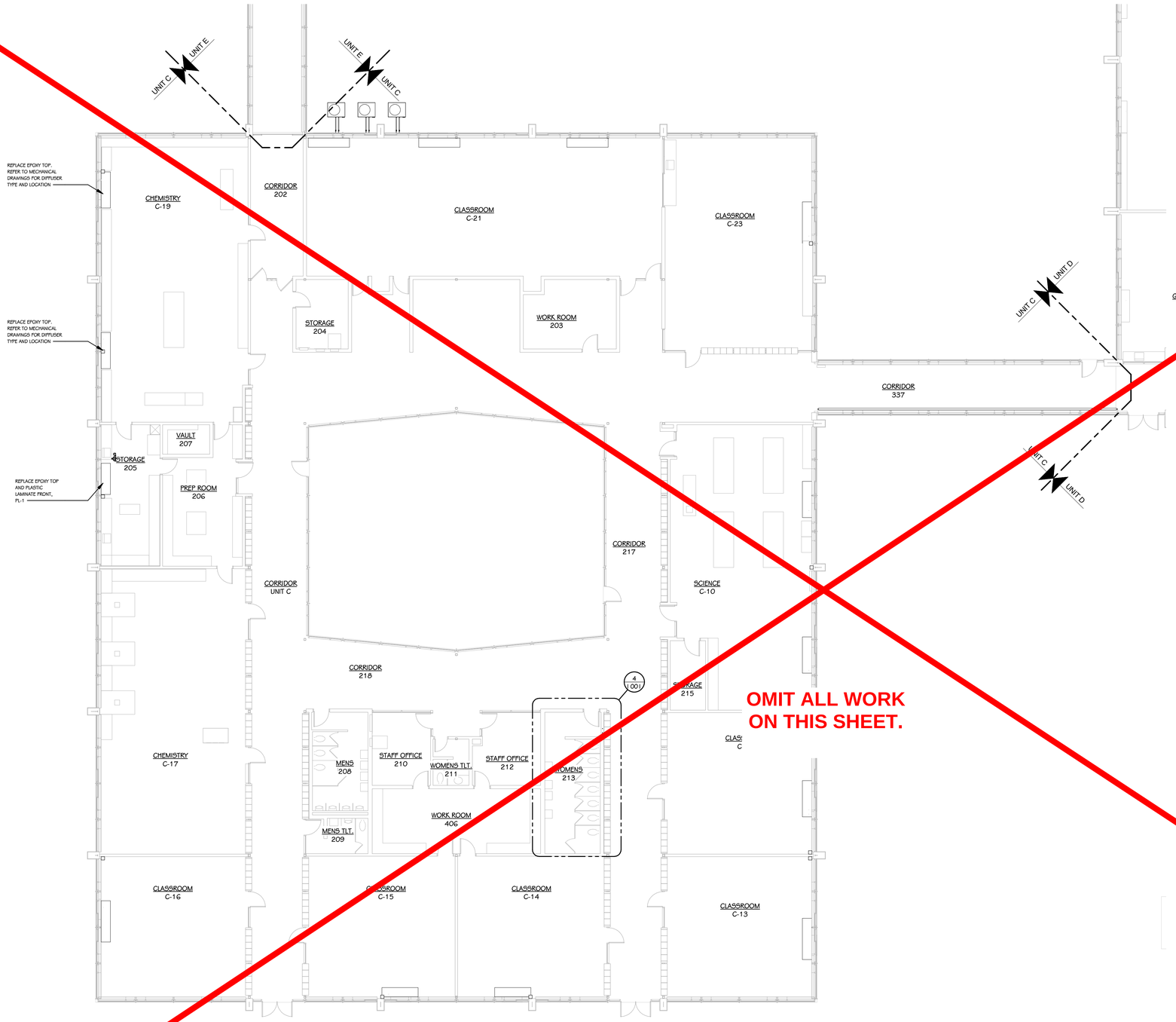
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 FINISH PLAN - UNIT B

DATE
NOVEMBER 22, 2022

SHEET NUMBER
I101B
21-807.00



OMIT ALL WORK ON THIS SHEET.

LEVEL 1 INTERIOR FINISH PLAN - UNIT C
3/32" = 1'-0"

FINISH KEY

REFER TO MATERIAL SELECTION SCHEDULE FOR FINISH INFORMATION

- P-# / RB-# / CPT-# — WALL FINISH / FLOOR BASE / FLOOR FINISH
- PL-# / PL-# — COUNTER FINISH / CABINET FINISH (BASE AND UPPER)
- P-# — INDICATES EXTENT OF ATYPICAL FINISH
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FINISH PLAN GENERAL NOTES

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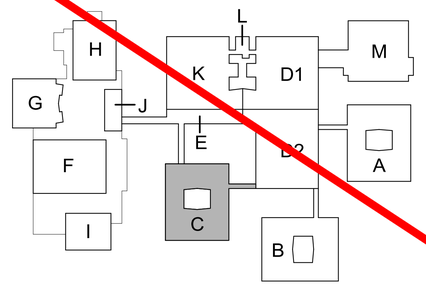
LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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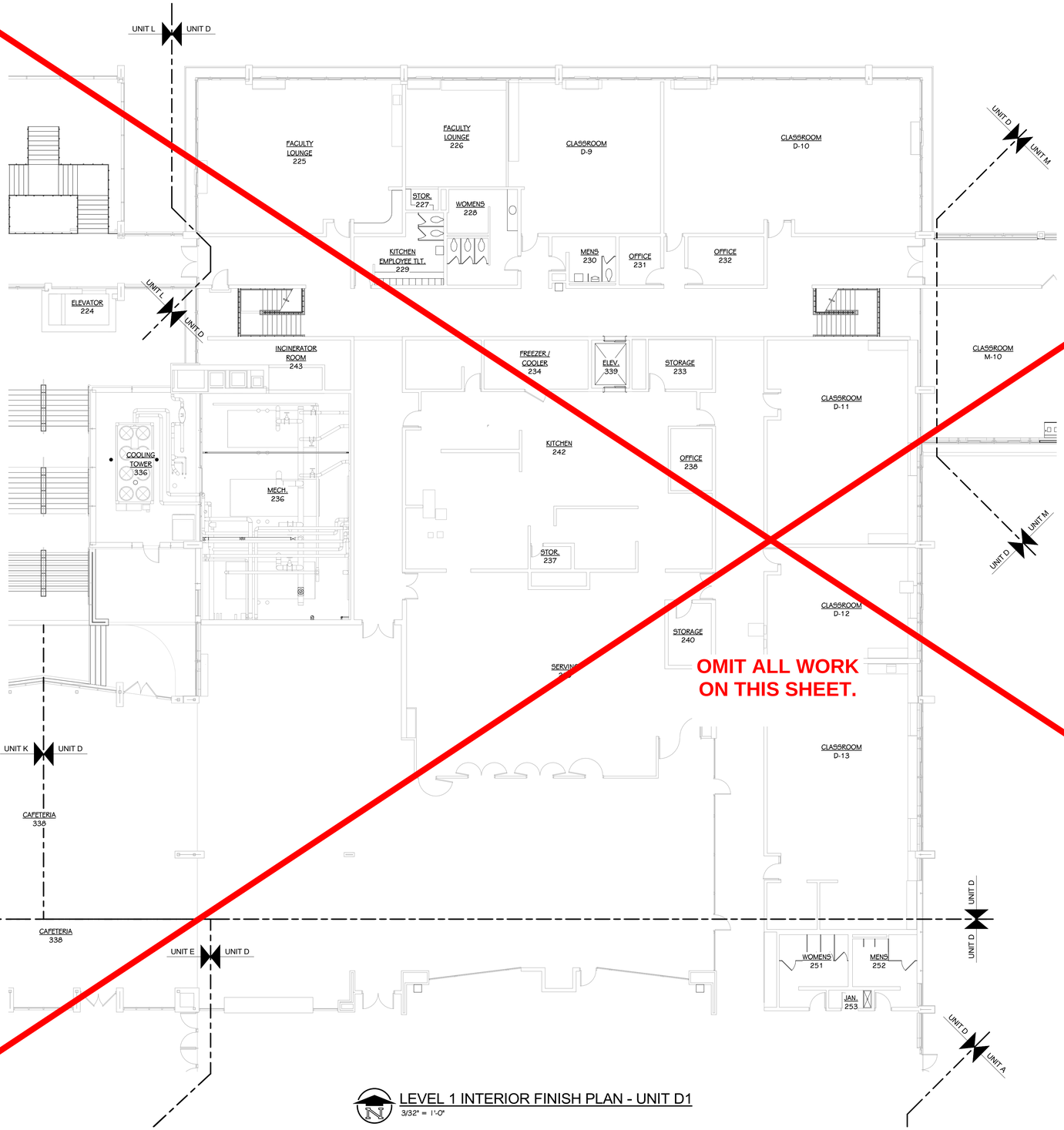
OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 FINISH PLAN - UNIT C

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M1101C

21-807.00



LEVEL 1 INTERIOR FINISH PLAN - UNIT D1
3/32" = 1'-0"

FINISH KEY

P-#
RB-#
CPT-#
WALL FINISH
FLOOR BASE
FLOOR FINISH

REFER TO MATERIAL SELECTION SCHEDULE FOR FINISH INFORMATION

PL-#
PL-#
COUNTER FINISH
CABINET FINISH (BASE AND UPPER)

P-#
INDICATES EXTENT OF ATYPICAL FINISH

VCT CPT
INDICATES FLOOR MATERIAL TRANSITION
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MULTI
INDICATES MULTIPLE MATERIAL TYPES ON A SURFACE. REFER TO DETAIL OR ELEVATIONS.

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INDICATES MATERIAL PATTERN. REFER TO DETAILS

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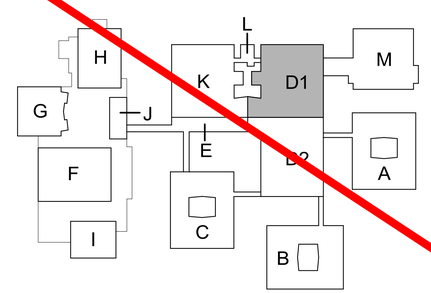
LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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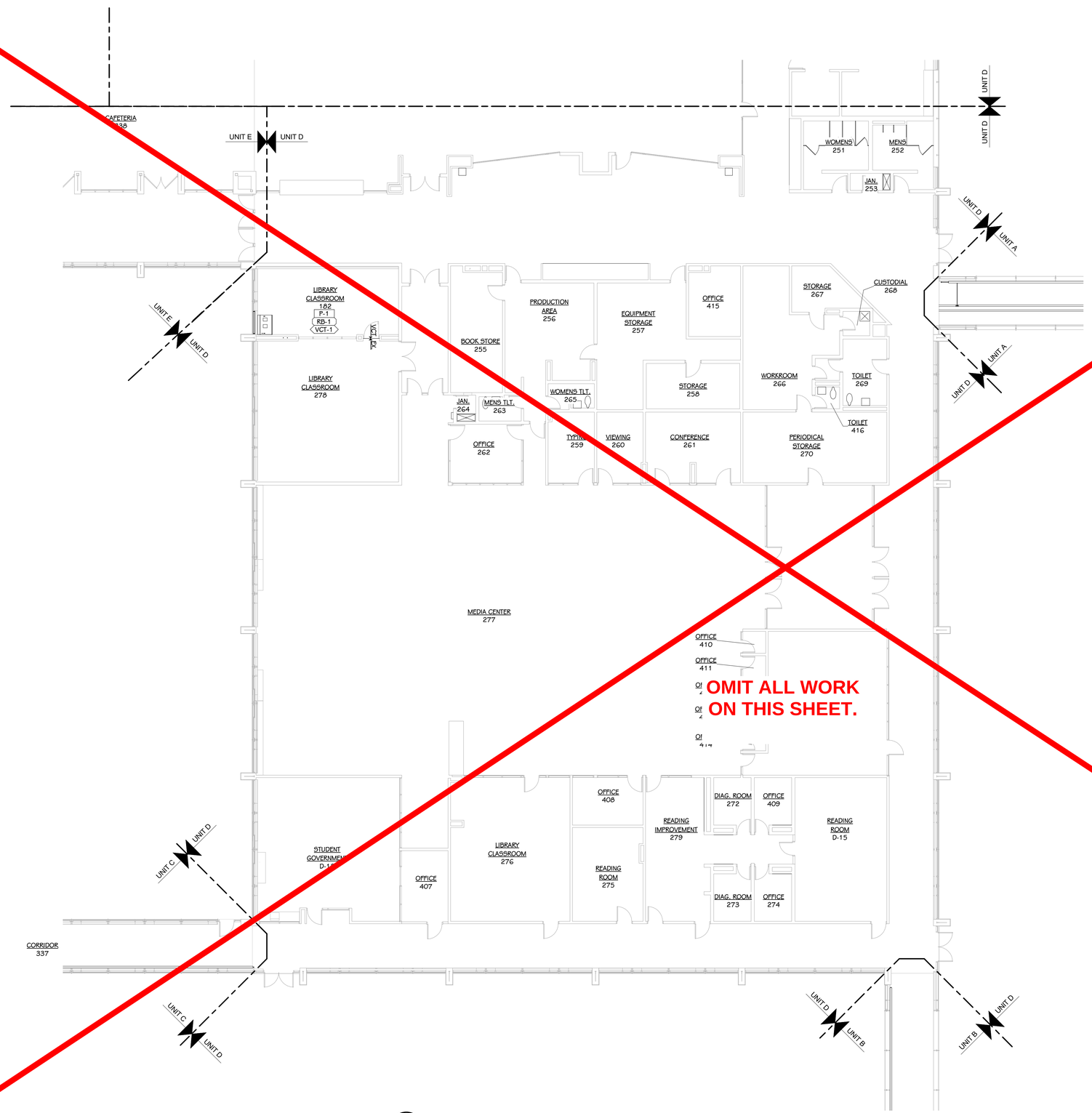
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 FINISH PLAN - UNIT D1

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M101D1

21-807.00



LEVEL 1 INTERIOR FINISH PLAN - UNIT D2
3/32" = 1'-0"

FINISH KEY

P-# WALL FINISH
RB-# FLOOR BASE
CPT-# FLOOR FINISH

REFER TO MATERIAL SELECTION SCHEDULE FOR FINISH INFORMATION

PL-# COUNTER FINISH
PL-# CABINET FINISH (BASE AND UPPER)

P-# INDICATES EXTENT OF ATYPICAL FINISH

VCT, CPT INDICATES FLOOR MATERIAL TRANSITION
NOTE - REFER TO MATERIAL SELECTION SCHEDULE REMARKS FOR FLOOR TRANSITION TYPE

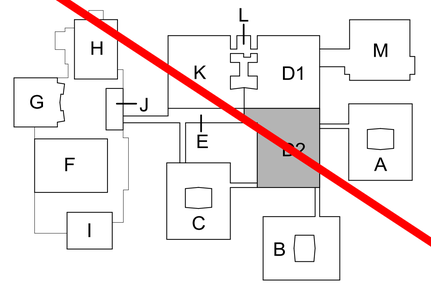
MULTI INDICATES MULTIPLE MATERIAL TYPES ON A SURFACE. REFER TO DETAIL OR ELEVATIONS.

- P INDICATES MATERIAL PATTERN. REFER TO DETAILS

FINISH PLAN GENERAL NOTES

1. REFER TO ARCHITECTURAL FLOOR PLANS AND SPECIFICATION FOR ADDITIONAL INFORMATION ON CONSTRUCTION MATERIALS.
2. REFER TO REFLECTED CEILING PLANS FOR CEILING FINISH AND HEIGHTS.
3. AT AREAS OF EXPOSED CEILING WHERE THE DUCT WORK AND DIFFUSERS ARE TO BE PAINTED, COORDINATE WITH MECHANICAL SPECIFICATIONS AND REFER TO THE REFLECTED CEILING PLANS FOR PAINT COLORS.
4. REFER TO DOOR SCHEDULE FOR FINISH ON DOORS AND FRAMES.
5. WALL MOUNTED DIFFUSERS, GRILLES, ACCESS PANELS, ELECTRICAL PANELS, ETC. ARE TO BE PAINTED WITH AN OIL-BASED PAINT TO MATCH THE ADJACENT WALL FINISH.
6. FINISH TAGS APPLY TO LIKE MATERIALS IN ENTIRE ROOM. I.E. CASEWORK TAG MAY ONLY CALLOUT ONE RUN OF CASEWORK, BUT ALL CASEWORK IN ROOM RECEIVE THE SAME FINISHES, UNLESS TAGGED DIFFERENTLY.
7. CASEWORK FINISH TAGS DO NOT APPLY TO CUSTOM MILLWORK PIECES. REFER TO THEIR SECTIONS AND/OR ELEVATIONS FOR FINISH MATERIALS.
8. PATCH EXISTING FLOORING AND BASE AROUND NEW CONSTRUCTION. USE OWNERS ATTIC STOCK. REFER TO ARCHITECTURAL AND MECHANICAL SHEETS FOR EXTENT.
9. RUBBER BASE (RB) TO BE REMOVED BUT NOT REPLACED AT NEW UV UNITS.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

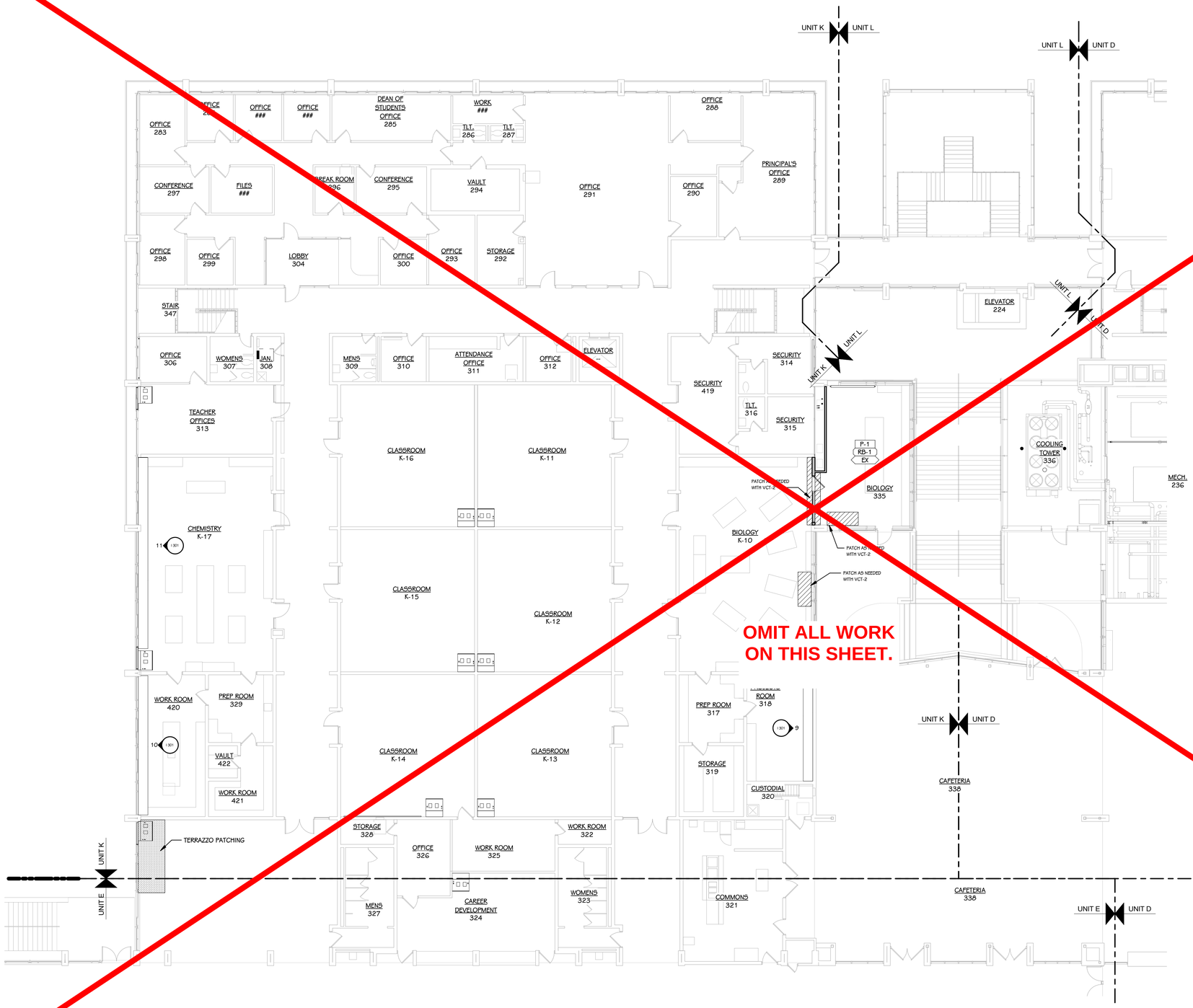
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 FINISH PLAN - UNIT D2

DATE
NOVEMBER 22, 2022

SHEET NUMBER
A101D2
21-807.00



LEVEL 1 INTERIOR FINISH PLAN - UNIT K
3/32" = 1'-0"

FINISH KEY

P-# WALL FINISH
RB-# FLOOR BASE
CPT-# FLOOR FINISH

REFER TO MATERIAL SELECTION SCHEDULE FOR FINISH INFORMATION

PL-# COUNTER FINISH
PL-# CABINET FINISH (BASE AND UPPER)

P-# INDICATES EXTENT OF ATYPICAL FINISH

VCT / CPT INDICATES FLOOR MATERIAL TRANSITION
NOTE - REFER TO MATERIAL SELECTION SCHEDULE REMARKS FOR FLOOR TRANSITION TYPE

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FINISH PLAN GENERAL NOTES

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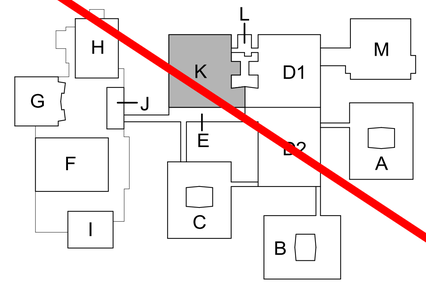

KEY PLAN
SCALE: NO SCALE

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PROJECT TITLE
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OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 FINISH PLAN - UNIT K

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NOVEMBER 22, 2022

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A101K
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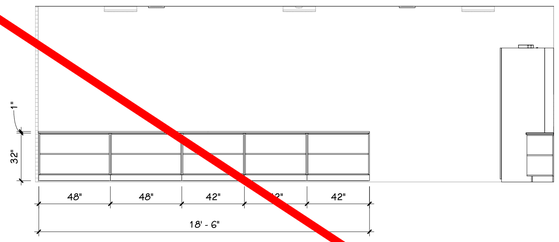
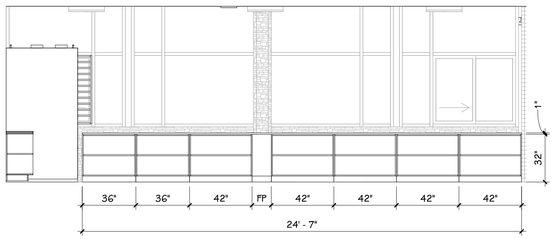
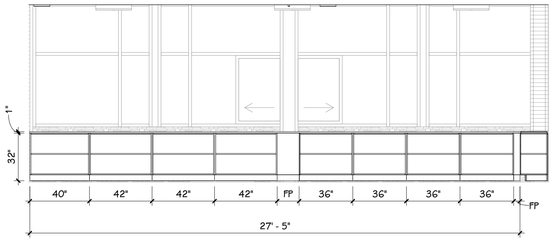


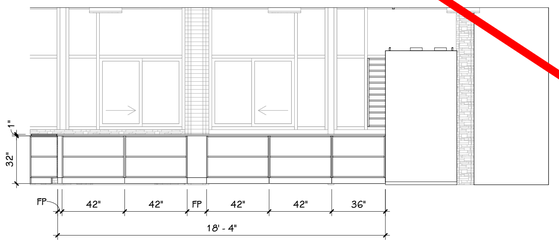
1 / I 301 CLASSROOM K-4 - SOUTH
1/4" = 1'-0"



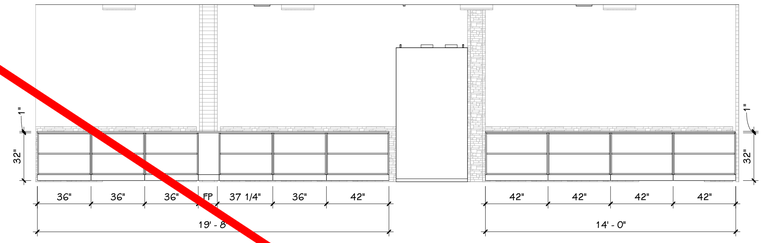
2 / I 301 CLASSROOM K-4 - WEST
1/4" = 1'-0"



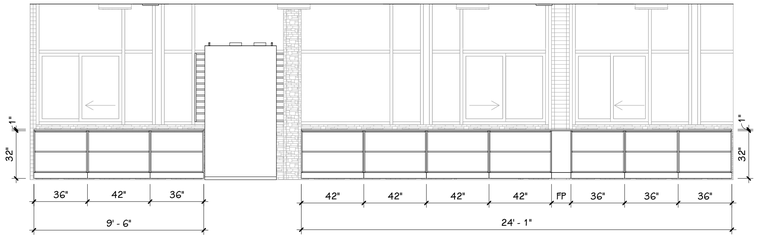
3 / I 301 CLASSROOM K-5 WEST - WEST
1/4" = 1'-0"



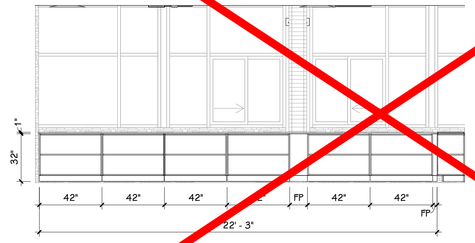
4 / I 301 CLASSROOM K-5 WEST - NORTH
1/4" = 1'-0"



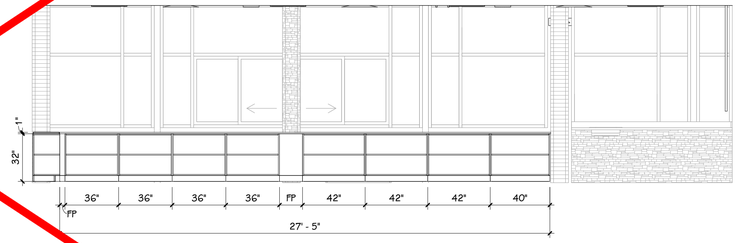
5 / I 301 CLASSROOM K-5 CENTER - NORTH
1/4" = 1'-0"



6 / I 301 CLASSROOM K-5 EAST - NORTH
1/4" = 1'-0"

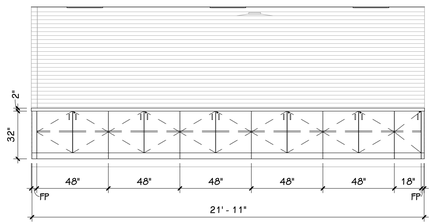


7 / I 301 CLASSROOM K-6 - NORTH
1/4" = 1'-0"

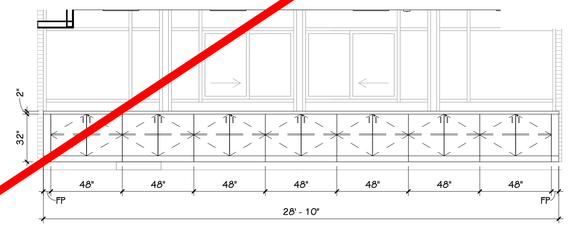


8 / I 301 CLASSROOM K-6 - EAST
1/4" = 1'-0"

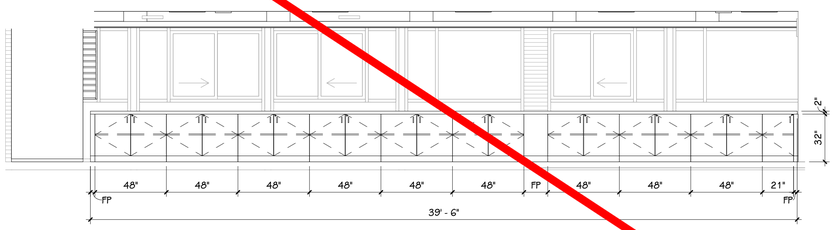
OMIT ALL WORK ON THIS SHEET.



9 / I 301 PROJECTS ROOM 318 - EAST
1/4" = 1'-0"



10 / I 301 WORK ROOM 420 - WEST
1/4" = 1'-0"



11 / I 301 CLASSROOM K-17 - WEST
1/4" = 1'-0"

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PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
INTERIOR ELEVATIONS

DATE
NOVEMBER 22, 2022

SHEET NUMBER
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21-807.00

ABBREVIATIONS

A.C.D.	AUTOMATIC CONTROL DAMPER
A.F.F.	ABOVE FINISHED FLOOR
A.G.	ABOVE GRADE
A.P.D.	AIR PRESSURE DROP
B.D.	BALANCING DAMPER
B.D.D.	BACKDRAFT DAMPER
B.F.	BARRIER FREE
BTUH	BRITISH THERMAL UNIT PER HOUR
B.V.	BALANCING VALVE
C.B.	CATCH BASIN
C.B.V.	CALIBRATED BALANCING VALVE
C.F.H.	CUBIC FEET PER HOUR
C.F.M.	CUBIC FEET PER MINUTE
C.H.	CABINET HEATER
C.I.	CAST IRON
C.M.	CEILING MOUNTED
C.O.	CLEAN OUT
C.V.	CONTROL VALVE
D.F.	DRINKING FOUNTAIN
DN.	DOWN
D.S.	DOWN SPOUT
E.A.	EXHAUST AIR
E.A.T.	ENTERING AIR TEMPERATURE
E.D.B.	ENTERING DRY BULB
E.F.	EXHAUST FAN
E.S.P.	EXTERNAL STATIC PRESSURE
E.W.B.	ENTERING WET BULB
E.W.C.	ELECTRIC WATER COOLER
E.W.T.	ENTERING WATER TEMPERATURE
EXIST.	EXISTING
F.C.	FLEXIBLE CONNECTION
F.D.	FLOOR DRAIN
(FD)	FIRE DAMPER
F.H.C.	FIRE HOSE CABINET
F.I.	FIELD INSTALLED
F.M.	FLOOR MOUNTED
F.P.M.	FEET PER MINUTE
F.R.	FIN RADIATION
G.P.M.	GALLONS PER MINUTE
H.B.	HOSE BIBB
HP	HORSE POWER
I.E.	INVERT ELEVATION
L.A.T.	LEAVING AIR TEMPERATURE
LAV.	LAVATORY
L.D.B.	LEAVING DRY BULB
LOUV.	LOUVER
L.W.B	LEAVING WET BULB
L.W.T.	LEAVING WATER TEMPERATURE
M.A.	MIXED AIR
M.A.T.	MIXED AIR TEMPERATURE
MAX.	MAXIMUM
M.B.	MOP BASIN
MBH	BRITISH THERMAL UNIT PER HOUR (THOUSANDS)
MFR.(S)	MANUFACTURER(S)
M.H.	MANHOLE
MIN.	MINIMUM
MTG.	MOUNTING
M.V.	MANUAL AIR VENT
N.C.	NORMALLY CLOSED
N.F.W.H.	NON-FREEZE WALL HYDRANT
N.I.C.	NOT IN CONTRACT
N.O.	NORMALLY OPEN
O.A.	OUTSIDE AIR
O.A.I.	OUTSIDE AIR INTAKE
OCT.	OCTAVE
P.A.	PIPE ANCHOR
P.D.	PRESSURE DROP
P.I.V	POST INDICATOR VALVE
P.R.V.	PRESSURE REDUCING VALVE
P.T.	PRESSURE / TEMPERATURE TAPPING
R.A.	RETURN AIR
R.D.	ROOF DRAIN
R.H.	RELATIVE HUMIDITY
R.I.O.	ROUGH IN ONLY
R.P.M.	REVOLUTIONS PER MINUTE
RPPBP	REDUCED PRESSURE PRINCIPAL BACKFLOW PREVENTER
R.V.	RELIEF VALVE
S.A.	SUPPLY AIR
SENS.	SENSIBLE
SHR.	SHOWER
SK.	SINK
S.O.V.	SHUT-OFF VALVE
S.P.	STATIC PRESSURE
S.SK.	SERVICE SINK
TEMP.	TEMPERATURE
TOT.	TOTAL
T.R.	TEMPERATURE RISE
T.S.	TIP SPEED
T.S.P.	TOTAL STATIC PRESSURE
T.U.	TERMINAL UNIT BOX
T.W.C.	TEPID WATER CONNECTION
U.H.	UNIT HEATER
URN.	URINAL
V.	VENT
VEL.	VELOCITY
V.I.	VIBRATION ISOLATORS
V.I.F.	VERIFY IN FIELD
V.S.	VENT STACK
V.T.R.	VENT THRU ROOF
W.	WASTE
W.C.	WATER CLOSET
W.M.	WALL MOUNTED
W.P.D.	WATER PRESSURE DROP
W.SK.	WASH SINK

CONTROL SYMBOLS

- CONTROL VALVE
- FLOW METER (PROBE TYPE)
- THREE-WAY CONTROL VALVE
- (F) FREEZE STAT
- M MOTORIZED ACTUATOR
- (HS) HUMIDITY SENSOR
- (TS) TEMPERATURE SENSOR
- (CO2) CARBON DIOXIDE SENSOR
- (DP) DIFFERENTIAL PRESSURE SENSOR
- (AS) AIRFLOW SENSOR
- (ES) ENTHALPY SENSOR (TEMP / HUMIDITY)
- (MS) MOISTURE SENSOR
- (DS) DUCT SMOKE SENSOR

MECHANICAL SYMBOLS

- AW — ACID WASTE
- AWV — ACID WASTE VENT
- BALANCING VALVE
- BUTTERFLY VALVE
- CALIBRATED BALANCING VALVE
- CAP
- CHECK VALVE
- CR — CHILLER RETURN
- CS — CHILLER SUPPLY
- CWR — CHILLED WATER RETURN
- CWS — CHILLED WATER SUPPLY
- COLD WATER (DOMESTIC)
- A — COMPRESSED AIR
- COND — CONDENSATE
- CD — CONDENSATE DRAIN
- CONTROL VALVE
- CTR — COOLING TOWER RETURN
- CTS — COOLING TOWER SUPPLY
- FIRE DAMPER (HORIZONTAL)
- FIRE DAMPER (VERTICAL)
- FIRE/SMOKE DAMPER
- FP — FIRE PROTECTION
- FLOW METER (PROBE TYPE)
- FLOW METER (WAFER TYPE)
- FLOW SWITCH
- FD — FOOTING DRAIN
- FOR — FUEL OIL RETURN
- FOS — FUEL OIL SUPPLY
- G — GAS
- GAS COCK
- HR — HEATING HOT WATER RETURN
- HS — HEATING HOT WATER SUPPLY
- HPR — HEAT PUMP RETURN
- HPS — HEAT PUMP SUPPLY
- HOT WATER RETURN (DOMESTIC)
- HOT WATER SUPPLY (DOMESTIC)
- (H) HUMIDISTAT
- MA — MEDICAL AIR
- MVAC — MEDICAL VACUUM
- OUTSIDE STEM AND YOKE VALVE
- O_2 — OXYGEN
- PRESSURE GAUGE
- PRESSURE REDUCING VALVE
- PRESSURE RELIEF VALVE
- PRESSURE / TEMPERATURE TAPPING
- PHR — PRIMARY HEATING HOT WATER RETURN
- PHS — PRIMARY HEATING HOT WATER SUPPLY
- PC — PUMPED CONDENSATE
- REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER
- SAN — SANITARY SEWER (ABOVE FLOOR)
- SAN — SANITARY SEWER (BELOW FLOOR)
- SHUT-OFF VALVE
- (S) SMOKE DAMPER
- SCW — SOFT COLD WATER
- SHW — SOFT HOT WATER
- SHWR — SOFT HOT WATER RETURN
- SPRING CHECK VALVE
- STM (#) — STEAM
- STEAM TRAP
- ST — STORM SEWER (ABOVE FLOOR)
- ST (OF) — STORM SEWER (OVERFLOW SYSTEM)
- ST — STORM (BELOW FLOOR)
- STRAINER
- (TS) TEMPERATURE SENSOR
- TW — TEPID WATER
- TWR — TEPID WATER RETURN
- THERMOMETER
- (T) THERMOSTAT
- THREE-WAY CONTROL VALVE
- THROTTLING VALVE
- TRIPLE DUTY VALVE (ANGLE)
- TRIPLE DUTY VALVE (STRAIGHT)
- UNION
- VAC — VACUUM
- VACUUM BREAKER
- V — VENT

GENERAL MECHANICAL NOTES

1 DETAILS SHOWN ILLUSTRATE DESIGN INTENT, NOT ALL POSSIBLE CONDITIONS. DRAWINGS ARE NOT TO BE CONSIDERED FABRICATION DRAWINGS.

2 IF THE CONTRACTOR ELECTS TO PROVIDE EQUIPMENT OTHER THAN BASIS OF DESIGN, THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE THE LAYOUT AND CLEARANCE REQUIREMENTS IN ALL SPACES CONTAINING EQUIPMENT AND PROVIDE EQUIPMENT MEETING THE SPECIFICATIONS AND ACHIEVING CODE REQUIRED CLEARANCES WITHIN THE SPACE PROVIDED.

3 COORDINATE ALL NEW CONSTRUCTION WORK OR ACTIVITY WITH THAT WHICH IS REQUIRED BY OTHER TRADES OR INSTALLERS IN ORDER TO PROVIDE A COMPLETE SYSTEM INCLUDING ALL NECESSARY COMPONENTS, FITTINGS, AND OFFSETS.

4 INSTALLER SHALL VERIFY ALL EXISTING JOBSITE CONDITIONS AND DIMENSIONS AND BE RESPONSIBLE FOR THE SAME. NOTIFY THE ENGINEER OF DISCREPANCIES PRIOR TO COMMENCING WORK.

5 FIRE SEAL ALL PENETRATIONS, SUCH AS PIPES, DUCTS, CONDUIT, ETC. THROUGH FIRE AND/OR SMOKE RATED ASSEMBLIES.

6 MECHANICAL INSTALLER IS RESPONSIBLE FOR PATCHING OF WALLS, CEILINGS, AND FLOORS WHERE FIXTURES, MECHANICAL EQUIPMENT, SHEET METAL, OR PIPING HAS BEEN REMOVED, RELOCATED, OR INSTALLED.

7 ALL PIPING SHALL AVOID LOCATIONS DIRECTLY ABOVE ALL ELECTRICAL EQUIPMENT. COORDINATE WITH ELECTRICAL.

8 ALL LOW VOLTAGE CABLING SHALL BE RUN IN CONDUIT BETWEEN DEVICE AND CABLE TRAY OR TECHNOLOGY RACK. NO CABLING SHALL BE VISIBLE IN EXPOSED CEILING SPACES. EXPOSED CONDUIT SHALL BE PAINTED TO MATCH SURFACE IT IS SUPPORTED FROM. WIRING ROUTED IN ACCESSIBLE CEILING SPACES SHALL BE INDEPENDENTLY SUPPORTED WITH COMM HOOKS OR RINGS.

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OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
MECHANICAL AND PLUMBING SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES

DATE
NOVEMBER 22, 2022

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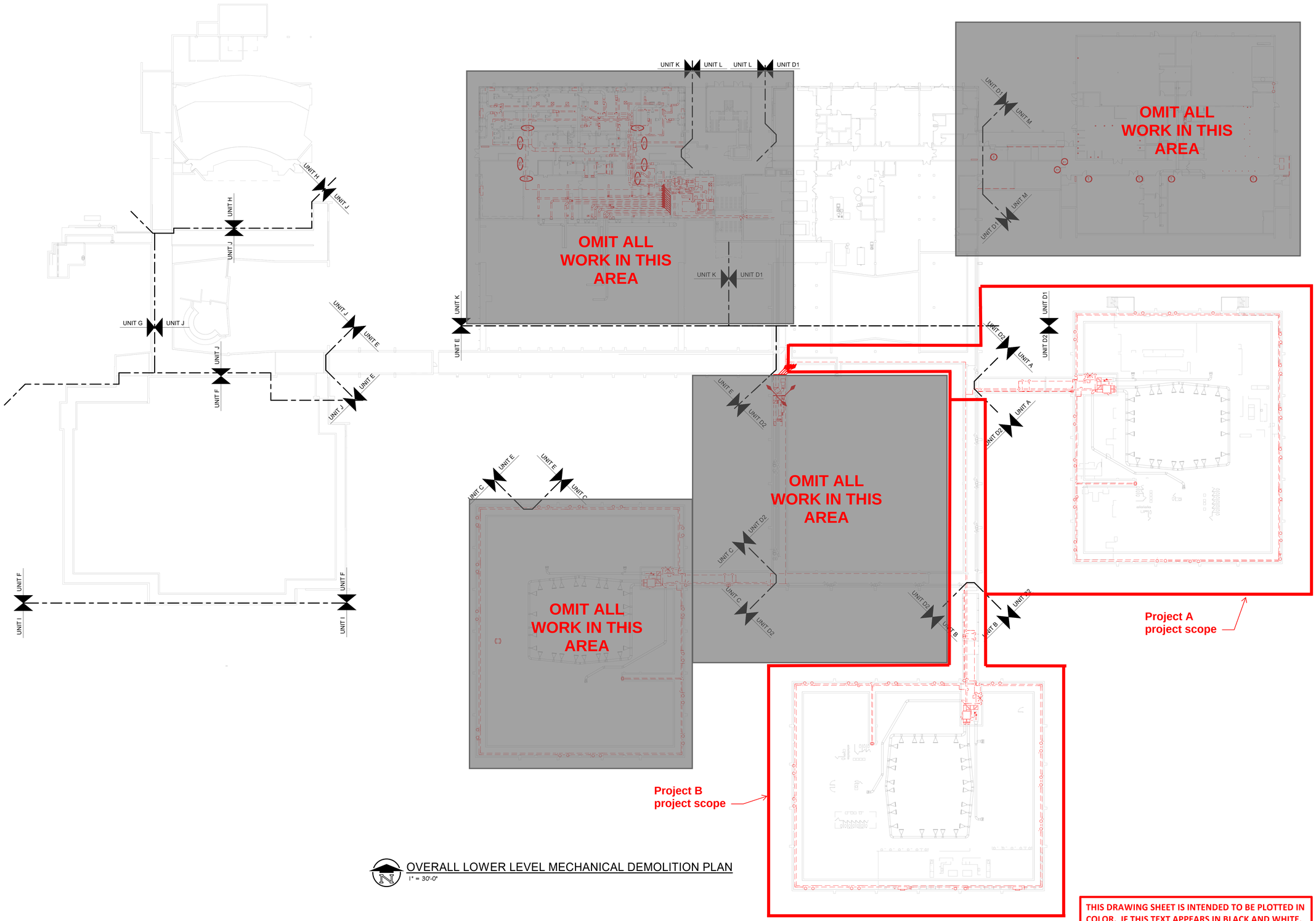

OVERALL LOWER LEVEL MECHANICAL DEMOLITION PLAN

1" = 30'-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.

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OWNER
KALAMAZOO PUBLIC SCHOOLS

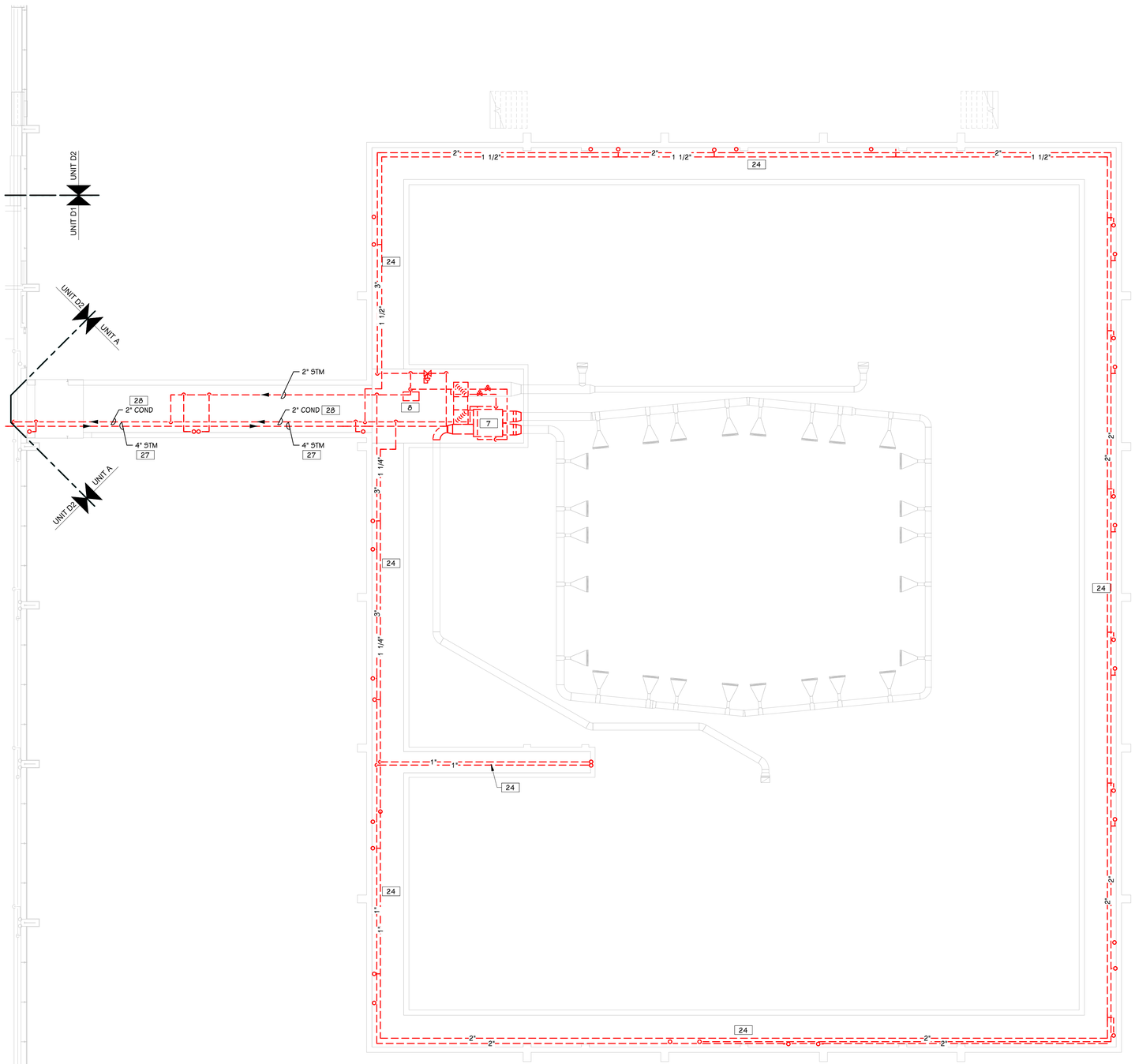
Kalamazoo, Michigan

SHEET TITLE
OVERALL LOWER LEVEL MECHANICAL DEMOLITION PLAN

DATE
NOVEMBER 22, 2022

SHEET NUMBER
MD 100

21-807.00



LOWER LEVEL MECHANICAL DEMOLITION PLAN - UNIT A

3/32" = 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.

KEYED NOTES - DEMOLITION

1 DEMO UNIT VENTILATOR AND ALL ASSOCIATED PIPING AND CONTROLS. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

2 DEMO UNIT VENTILATOR AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW UNIT INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

3 DEMO CABINET HEATER AND ALL ASSOCIATED PIPING AND CONTROLS.

4 DEMO EXHAUST FAN AND PREPARE EXIST. ROOF CURB FOR NEW EXHAUST FAN INSTALLATION.

5 DEMO ACCU ON ROOF AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

6 DEMO GRADE MOUNTED ACCU AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

7 DEMO AIR HANDLING UNIT AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW UNIT INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

8 DEMO LABORATORY VACUUM PUMP SYSTEM.

9 DEMO AIR HANDLING UNIT AND ALL ASSOCIATED PIPING, DUCTWORK, AND CONTROLS. DEMO PIPING BACK TO MAINS AND CAP. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

10 DEMO ALL DUCTWOK ASSOCIATED WITH AHU DEMOLITION.

11 DEMO CONDENSATE PUMP AND ALL ASSOCIATED PIPING AND CONTROLS.

12 DEMO TERMINAL UNIT AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW TERMINAL UNIT INSTALLATION.

13 DEMO FIN TUBE AND ALL ASSOCIATED PIPING AND CONTROLS.

14 DEMO UNIT HEATER AND ALL ASSOCIATED PIPING AND CONTROLS.

15 DEMO DUST COLLECTION SYSTEM AND ALL ASSOCIATED DUCTWORK.

16 DEMO EXHAUST FANS, WELDING HOODS, AND ALL ASSOCIATED DUCTWORK. DEMO EXHAUST DUCT THRU ROOF & PATCH ROOF.

17 DEMO CARBON MONOXIDE EXHAUST FAN AND ALL ASSOCIATED DUCTWORK. DEMO EXHAUST DUCT THRU ROOF & PATCH ROOF.

18 DEMO CARBON MONOXIDE EXHAUST FAN. PREPARE EXIST. DUCTWORK FOR NEW EXHAUST FAN INSTALLTION.

19 DEMO MAKE-UP AIR UNIT AND EXHAUST FAN SERVING PAINT BOOTH. PREPARE EXIST. DUCTWORK FOR NEW EXHAUT FAN AND MAKE-UP AIR UNIT INSTALLATION.

20 DEMO GRILLE OR DIFFUSER AND ASSOCIATED DUCTWORK.

21 DEMO SIDEWALL SUPPLY OR RETURN GRILLE AND PATCH WALL.

22 DEMO EXHAUST FAN AND ASSOCIATED CONTROLS. PREPARE EXIST. ROOF CURB FOR NEW RELIEF HOOD INSTALLATION.

23 DEMO ROOF TOP UNIT AND ALL ASSOCIATED DUCTWORK, PIPING AND CONTROLS. PREPARE EXIST. ROOF CURB AND NATURAL GAS PIPING ON ROOF FOR NEW RTU INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

24 DEMO ALL STEAM AND CONDENSATE PIPING LOCATED IN TUNNEL.

25 DEMO HEATING SUPPLY AND RETURN PIPING AS INDICATED.

26 DEMO EXHAUST DUCT THRU ROOF & PATCH ROOF.

27 DEMO STEAM PIPING SERVING UNITS A, B, AND C BACK TO MAIN AND CAP.

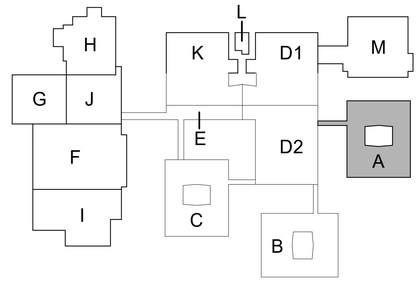
28 DEMO CONDENSATE PIPING SERVING UNITS A, B, AND C BACK TO MAINS AND CAP.

29 DEMO GRILLE OR DIFFUSER AND PREPARE EXISTING DUCTWORK FOR NEW GRILLE OR DIFFUSER INSTALLATION.

30 DEMO PAINT BOOTH SYSTEM INCLUDING EXHAUST FAN ON ROOF, AND ALL ASSOCIATED DUCTWORK, AND CONTROLS.

31 DEMO DUCTWORK AS INDICATED. COORDINATE DEMO WITH NEW WORK.

LOWER LEVEL - KEY PLAN



KEY PLAN

SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

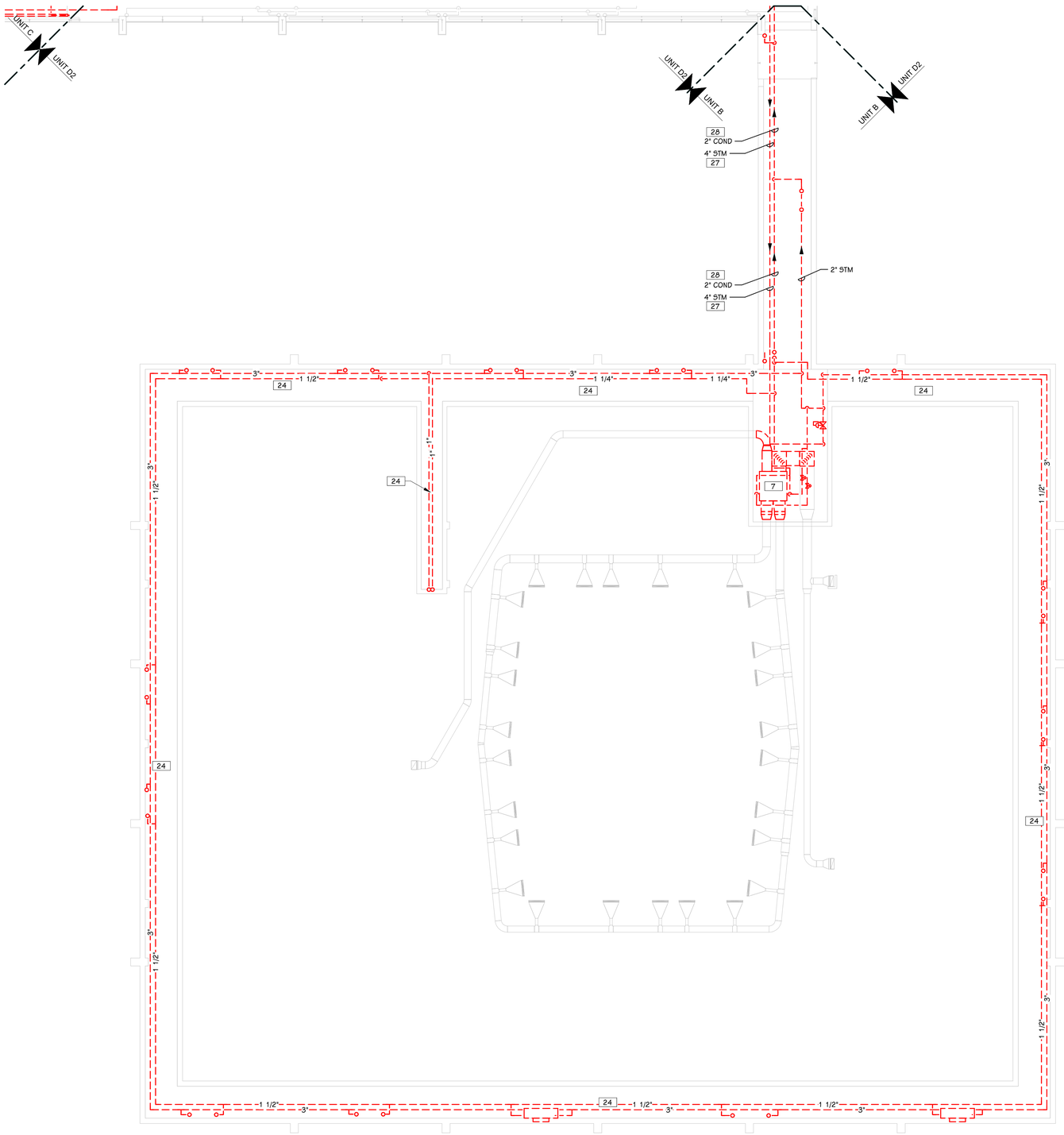
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL MECHANICAL DEMOLITION PLAN - UNIT A

DATE
NOVEMBER 22, 2022

SHEET NUMBER
MD 100A

21-807.00


UNIT C
UNIT D2
UNIT D2
UNIT B
UNIT B
UNIT D2
28
2" COND
4" STM
27
28
2" COND
4" STM
27
2" STM
3"
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24
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7
3"
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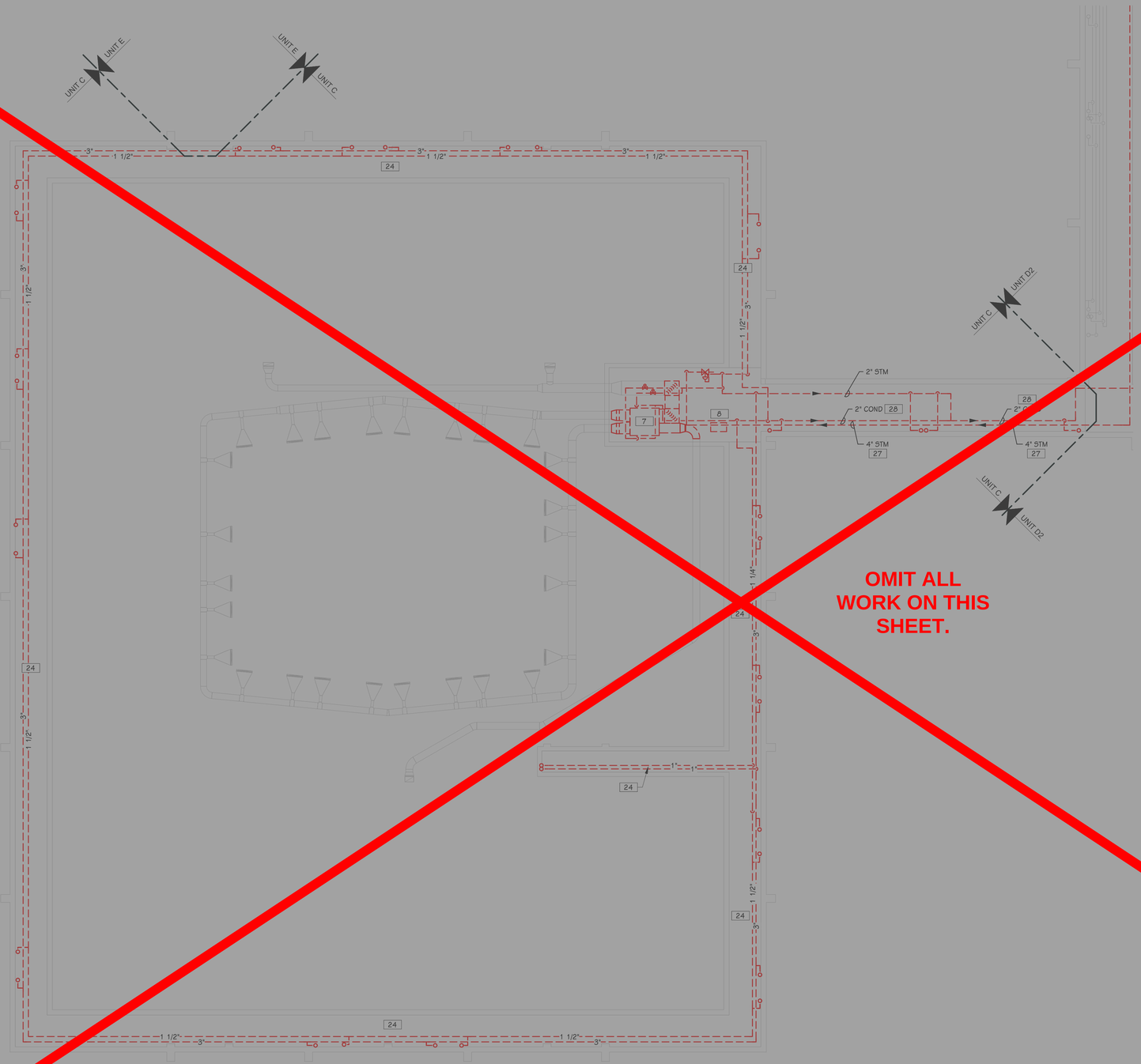

OMIT ALL WORK ON THIS SHEET.

LOWER LEVEL MECHANICAL DEMOLITION PLAN - UNIT C
3/32" = 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.

KEYED NOTES - DEMOLITION

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3 DEMO CABINET HEATER AND ALL ASSOCIATED PIPING AND CONTROLS.

4 DEMO EXHAUST FAN AND PREPARE EXIST. ROOF CURB FOR NEW EXHAUST FAN INSTALLATION.

5 DEMO ACCU ON ROOF AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

6 DEMO GRADE MOUNTED ACCU AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

7 DEMO AIR HANDLING UNIT AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW UNIT INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

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10 DEMO ALL DUCTWOK ASSOCIATED WITH AHU DEMOLITION.

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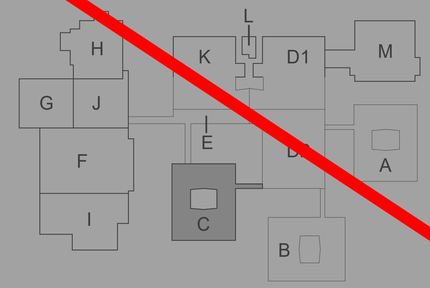
LOWER LEVEL - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL MECHANICAL DEMOLITION PLAN - UNIT C

DATE
NOVEMBER 22, 2022

SHEET NUMBER
MD 100C
21-807.00

OMIT ALL WORK ON THIS SHEET.

LOWER LEVEL MECHANICAL DEMOLITION PLAN - UNIT D1
3/32" = 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.

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7 DEMO AIR HANDLING UNIT AND ALL A… CIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW UNIT INSTA… TION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION…

8 DEMO LABORATORY … CUUM PUMP SYSTEM.

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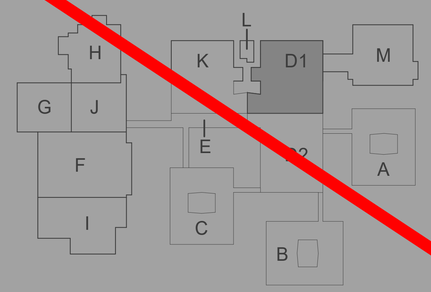
LOWER LEVEL - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

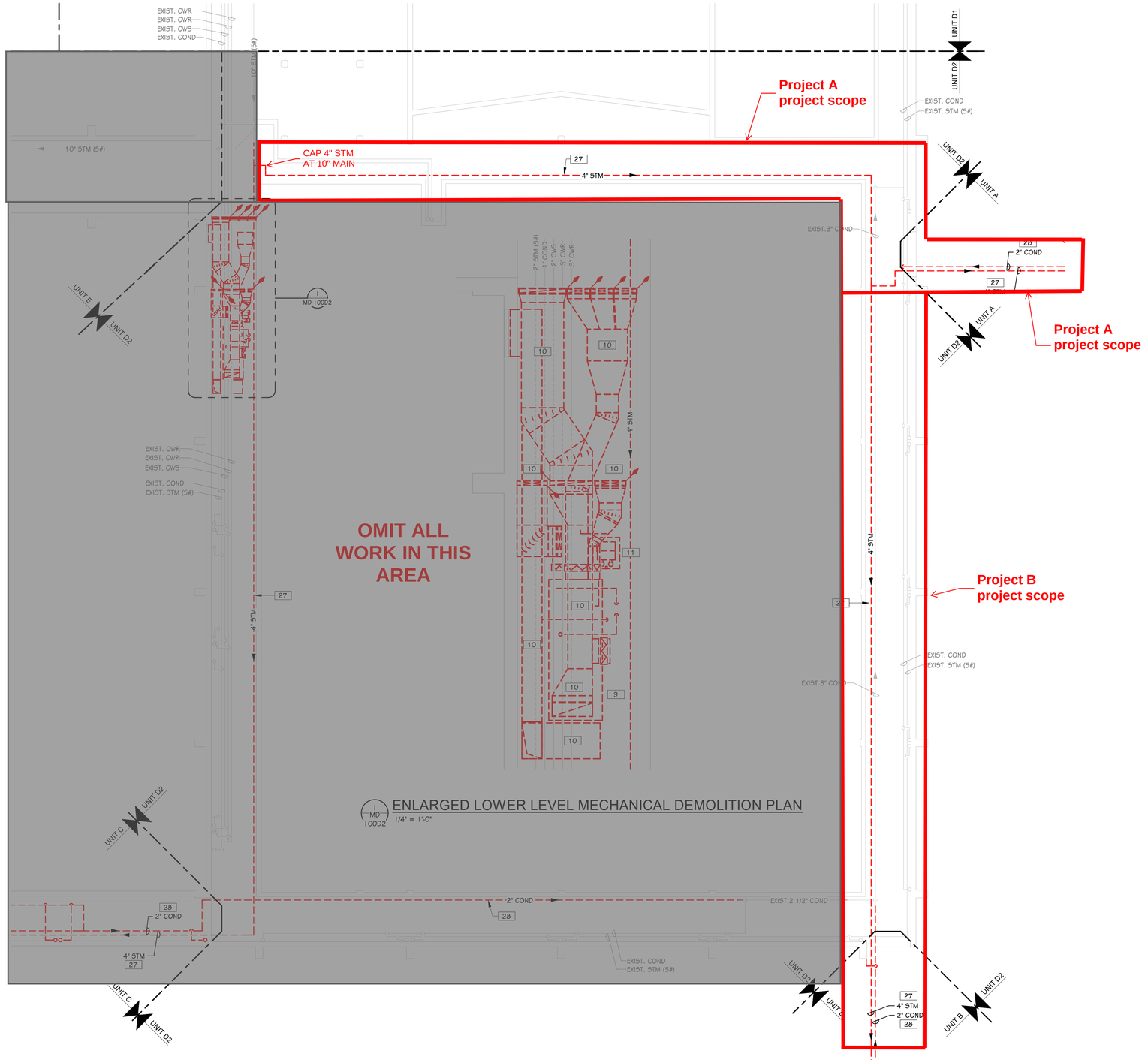
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL MECHANICAL DEMOLITION PLAN - UNIT D1

DATE
NOVEMBER 22, 2022

SHEET NUMBER
MD 100D1
21-807.00



ENLARGED LOWER LEVEL MECHANICAL DEMOLITION PLAN
MD 100D2 1/4" = 1'-0"

LOWER LEVEL MECHANICAL DEMOLITION PLAN - UNIT D2
3/32" = 1'-0"

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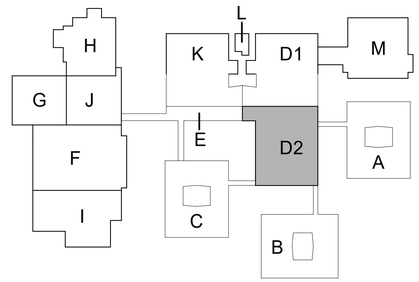
LOWER LEVEL - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

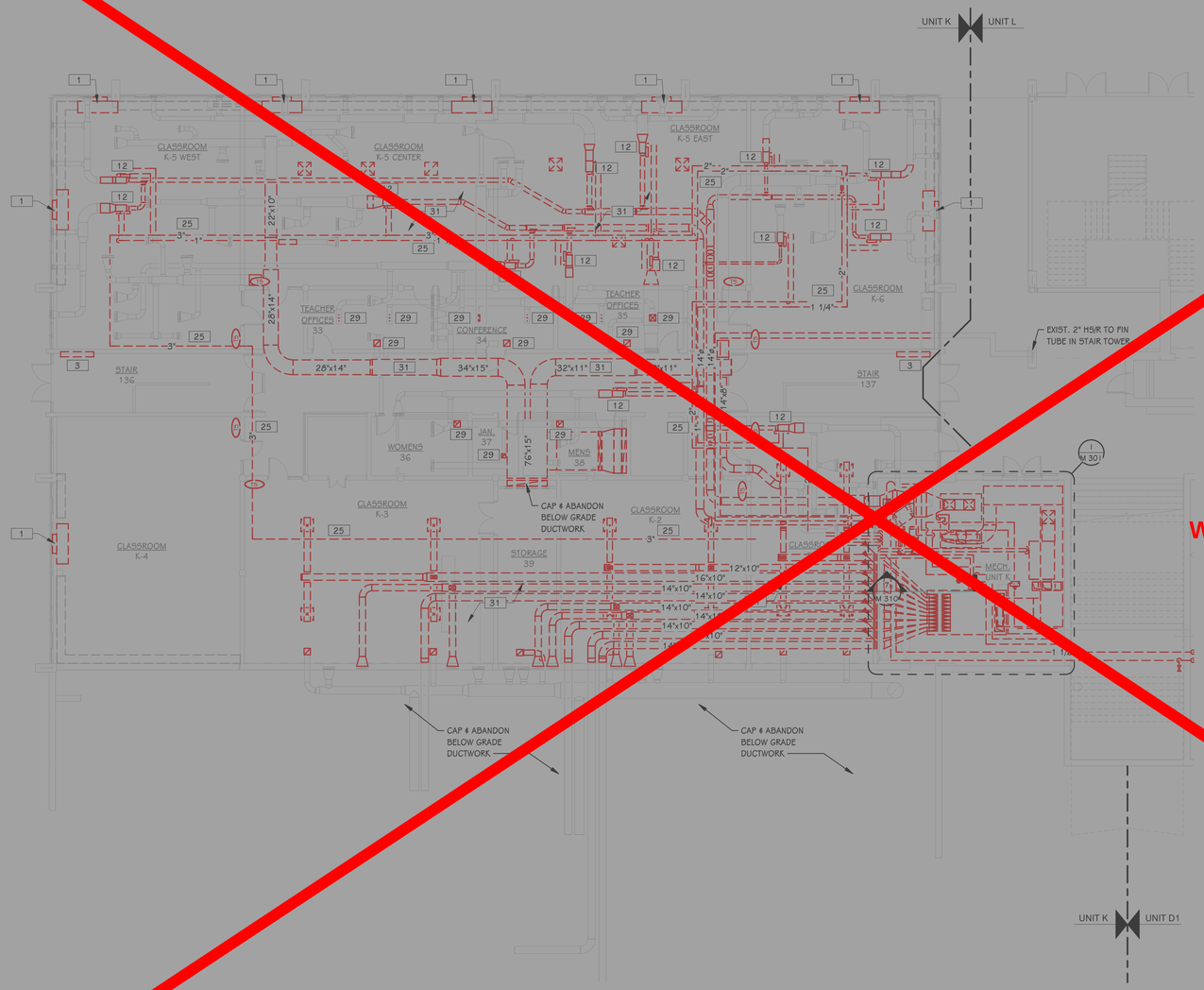
OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL MECHANICAL DEMOLITION PLAN - UNIT D2

DATE
NOVEMBER 22, 2022

SHEET NUMBER
MD 100D2

21-807.00



LOWER LEVEL MECHANAICAL DEMOLITION PLAN - UNIT K
3/32" = 1'-0"

OMIT ALL WORK ON THIS SHEET.

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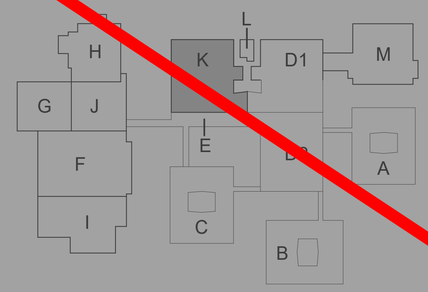

KEY PLAN
SCALE: NO SCALE

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OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL MECHANICAL DEMOLITION PLAN - UNIT K

DATE
NOVEMBER 22, 2022

SHEET NUMBER
MD 100K

21-807.00

LOWER LEVEL MECHANICAL DEMOLITION PLAN - UNIT M

3/32" = 1'-0"

OMIT ALL WORK ON THIS SHEET.

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KEYED NOTES - DEMOLITION

1 DEMO UNIT VENTILATOR AND ALL ASSOCIATED PIPING AND CONTROLS. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

2 DEMO UNIT VENTILATOR AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW UNIT INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

3 DEMO CABINET HEATER AND ALL ASSOCIATED PIPING AND CONTROLS.

4 DEMO EXHAUST FAN AND PREPARE EXIST. ROOF CURB FOR NEW EXHAUST FAN INSTALLATION.

5 DEMO ACCU ON ROOF AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

6 DEMO GRADE MOUNTED ACCU AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

7 DEMO AIR HANDLING UNIT AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW UNIT INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

8 DEMO LABORATORY VACUUM PUMP SYSTEM.

9 DEMO AIR HANDLING UNIT AND ALL ASSOCIATED PIPING, DUCTWORK, AND CONTROLS. DEMO PIPING BACK TO MAINS AND CAP. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

10 DEMO ALL DUCTWOK ASSOCIATED WITH AHU DEMOLITION.

11 DEMO CONDENSATE PUMP AND ALL ASSOCIATED PIPING AND CONTROLS.

12 DEMO TERMINAL UNIT AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW TERMINAL UNIT INSTALLATION.

13 DEMO FIN TUBE AND ALL ASSOCIATED PIPING AND CONTROLS.

14 DEMO UNIT HEATER AND ALL ASSOCIATED PIPING AND CONTROLS.

15 DEMO DUST COLLECTION SYSTEM AND ALL ASSOCIATED DUCTWORK.

16 DEMO EXHAUST FANS, WELDING HOODS, AND ALL ASSOCIATED DUCTWORK. DEMO EXHAUST DUCT THRU ROOF & PATCH ROOF.

17 DEMO CARBON MONOXIDE EXHAUST FAN AND ALL ASSOCIATED DUCTWORK. DEMO EXHAUST DUCT THRU ROOF & PATCH ROOF.

18 DEMO CARBON MONOXIDE EXHAUST FAN. PREPARE EXIST. DUCTWORK FOR NEW EXHAUST FAN INSTALLTION.

19 DEMO MAKE-UP AIR UNIT AND EXHAUST FAN SERVING PAINT BOOTH. PREPARE EXIST. DUCTWORK FOR NEW EXHAUT FAN AND MAKE-UP AIR UNIT INSTALLATION.

20 DEMO GRILLE OR DIFFUSER AND ASSOCIATED DUCTWORK.

21 DEMO SIDEWALL SUPPLY OR RETURN GRILLE AND PATCH WALL.

22 DEMO EXHAUST FAN AND ASSOCIATED CONTROLS. PREPARE EXIST. ROOF CURB FOR NEW RELIEF HOOD INSTALLATION.

23 DEMO ROOF TOP UNIT AND ALL ASSOCIATED DUCTWORK, PIPING AND CONTROLS. PREPARE EXIST. ROOF CURB AND NATURAL GAS PIPING ON ROOF FOR NEW RTU INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

24 DEMO ALL STEAM AND CONDENSATE PIPING LOCATED IN TUNNEL.

25 DEMO HEATING SUPPLY AND RETURN PIPING AS INDICATED.

26 DEMO EXHAUST DUCT THRU ROOF & PATCH ROOF.

27 DEMO STEAM PIPING SERVING UNITS A, B, AND C BACK TO MAIN AND CAP.

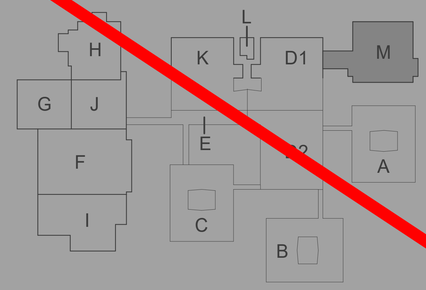
28 DEMO CONDENSATE PIPING SERVING UNITS A, B, AND C BACK TO MAINS AND CAP.

29 DEMO GRILLE OR DIFFUSER AND PREPARE EXISTING DUCTWORK FOR NEW GRILLE OR DIFFUSER INSTALLATION.

30 DEMO PAINT BOOTH SYSTEM INCLUDING EXHAUST FAN ON ROOF, AND ALL ASSOCIATED DUCTWORK, AND CONTROLS.

31 DEMO DUCTWORK AS INDICATED. COORDINATE DEMO WITH NEW WORK.

LOWER LEVEL - KEY PLAN



KEY PLAN

SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

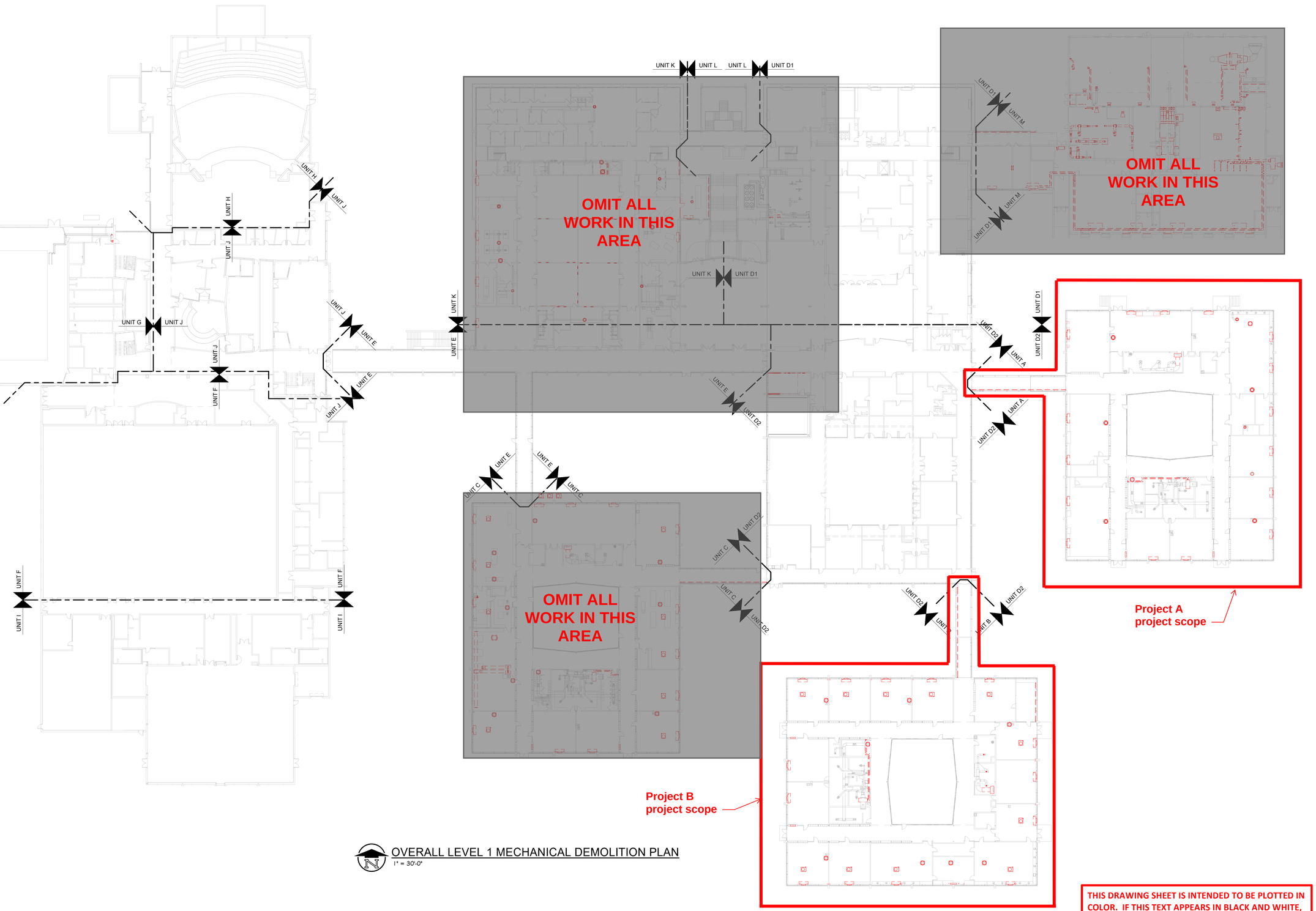
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL MECHANICAL DEMOLITION PLAN - UNIT M

DATE
NOVEMBER 22, 2022

SHEET NUMBER
MD 100M

21-807.00



OVERALL LEVEL 1 MECHANICAL DEMOLITION PLAN

1" = 30'-0"

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PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

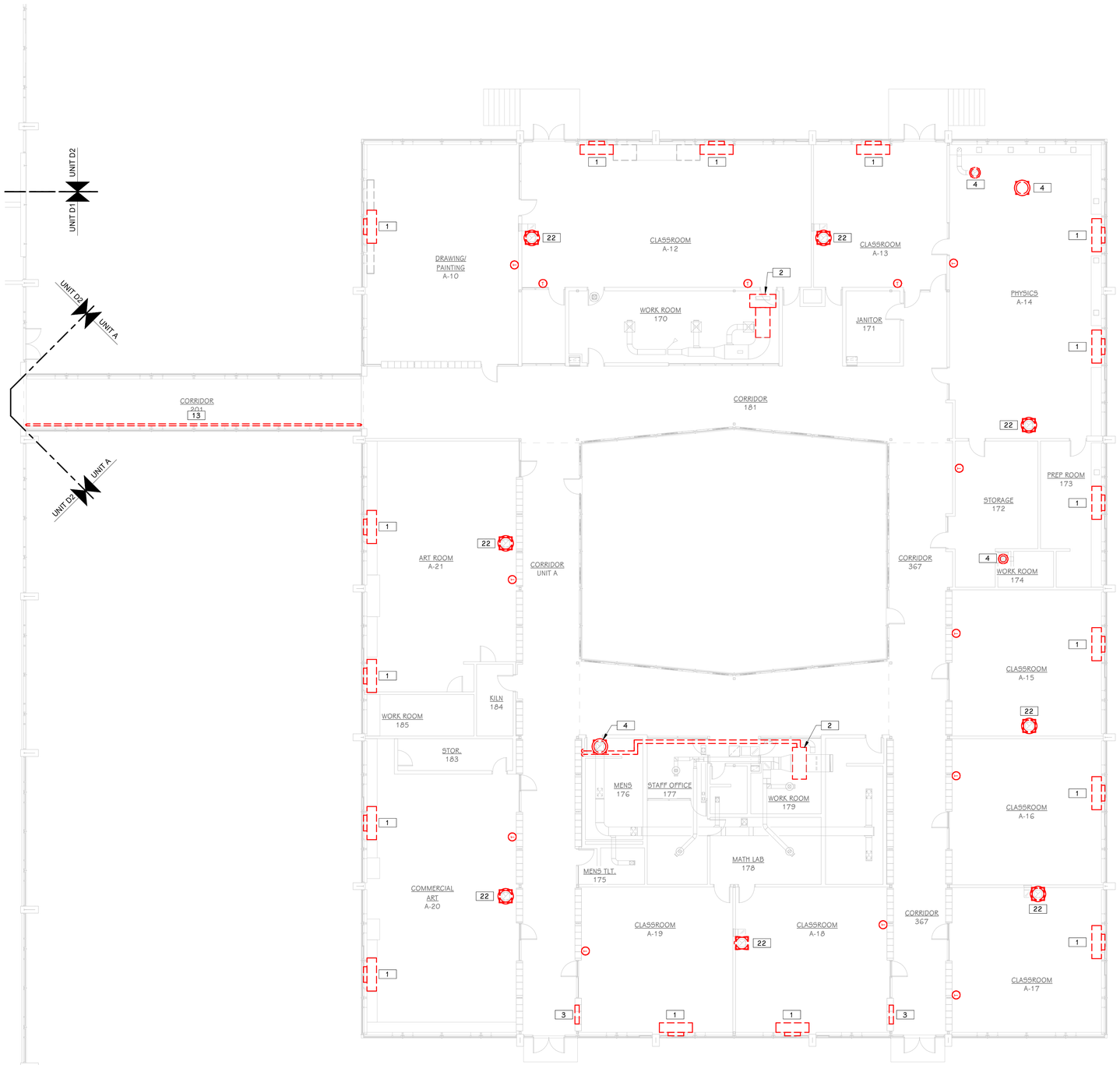
Kalamazoo, Michigan

SHEET TITLE
OVERALL LEVEL 1 MECHANICAL DEMOLITION PLAN

DATE
NOVEMBER 22, 2022

SHEET NUMBER
MD 101

21-807.00



LEVEL 1 MECHANICAL DEMOLITION PLAN - UNIT A

3/32" = 1'-0"

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3 DEMO CABINET HEATER AND ALL ASSOCIATED PIPING AND CONTROLS.

4 DEMO EXHAUST FAN AND PREPARE EXIST. ROOF CURB FOR NEW EXHAUST FAN INSTALLATION.

5 DEMO ACCU ON ROOF AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

6 DEMO GRADE MOUNTED ACCU AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

7 DEMO AIR HANDLING UNIT AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW UNIT INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

8 DEMO LABORATORY VACUUM PUMP SYSTEM.

9 DEMO AIR HANDLING UNIT AND ALL ASSOCIATED PIPING, DUCTWORK, AND CONTROLS. DEMO PIPING BACK TO MAINS AND CAP. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

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12 DEMO TERMINAL UNIT AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW TERMINAL UNIT INSTALLATION.

13 DEMO FIN TUBE AND ALL ASSOCIATED PIPING AND CONTROLS.

14 DEMO UNIT HEATER AND ALL ASSOCIATED PIPING AND CONTROLS.

15 DEMO DUST COLLECTION SYSTEM AND ALL ASSOCIATED DUCTWORK.

16 DEMO EXHAUST FANS, WELDING HOODS, AND ALL ASSOCIATED DUCTWORK. DEMO EXHAUST DUCT THRU ROOF & PATCH ROOF.

17 DEMO CARBON MONOXIDE EXHAUST FAN AND ALL ASSOCIATED DUCTWORK. DEMO EXHAUST DUCT THRU ROOF & PATCH ROOF.

18 DEMO CARBON MONOXIDE EXHAUST FAN. PREPARE EXIST. DUCTWORK FOR NEW EXHAUST FAN INSTALLTION.

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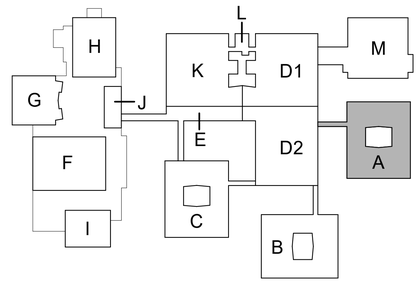
LEVEL 1 - KEY PLAN



KEY PLAN

SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

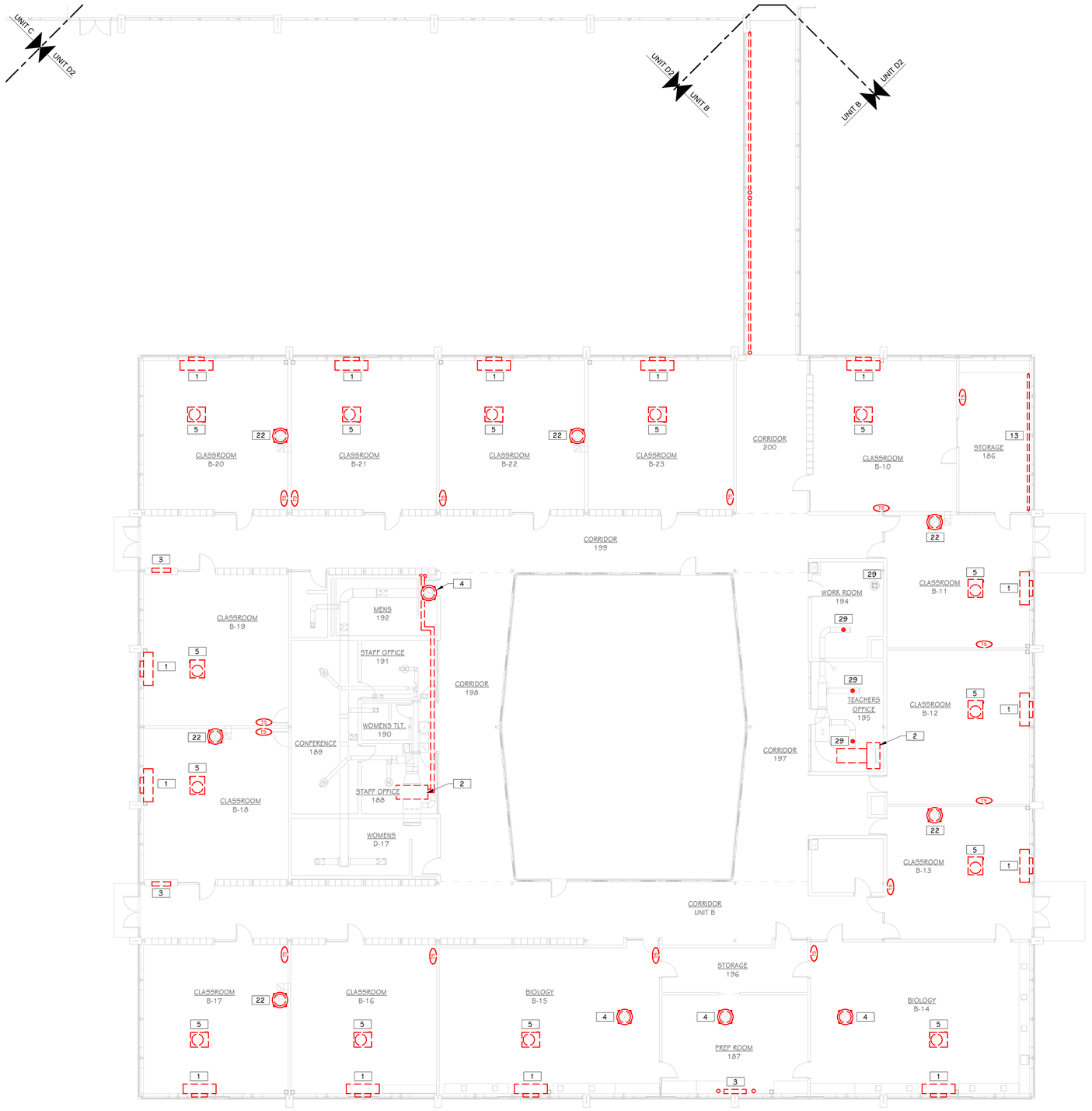
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 MECHANICAL DEMOLITION PLAN - UNIT A

DATE
NOVEMBER 22, 2022

SHEET NUMBER
MD 101A

21-807.00



LEVEL 1 MECHANICAL DEMOLITION PLAN - UNIT B

3/32" = 1'-0"

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2 DEMO UNIT VENTILATOR AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW UNIT INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

3 DEMO CABINET HEATER AND ALL ASSOCIATED PIPING AND CONTROLS.

4 DEMO EXHAUST FAN AND PREPARE EXIST. ROOF CURB FOR NEW EXHAUST FAN INSTALLATION.

5 DEMO ACCU ON ROOF AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

6 DEMO GRADE MOUNTED ACCU AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

7 DEMO AIR HANDLING UNIT AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW UNIT INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

8 DEMO LABORATORY VACUUM PUMP SYSTEM.

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12 DEMO TERMINAL UNIT AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW TERMINAL UNIT INSTALLATION.

13 DEMO FIN TUBE AND ALL ASSOCIATED PIPING AND CONTROLS.

14 DEMO UNIT HEATER AND ALL ASSOCIATED PIPING AND CONTROLS.

15 DEMO DUST COLLECTION SYSTEM AND ALL ASSOCIATED DUCTWORK.

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17 DEMO CARBON MONOXIDE EXHAUST FAN AND ALL ASSOCIATED DUCTWORK. DEMO EXHAUST DUCT THRU ROOF & PATCH ROOF.

18 DEMO CARBON MONOXIDE EXHAUST FAN. PREPARE EXIST. DUCTWORK FOR NEW EXHAUST FAN INSTALLTION.

19 DEMO MAKE-UP AIR UNIT AND EXHAUST FAN SERVING PAINT BOOTH. PREPARE EXIST. DUCTWORK FOR NEW EXHAUT FAN AND MAKE-UP AIR UNIT INSTALLATION.

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21 DEMO SIDEWALL SUPPLY OR RETURN GRILLE AND PATCH WALL.

22 DEMO EXHAUST FAN AND ASSOCIATED CONTROLS. PREPARE EXIST. ROOF CURB FOR NEW RELIEF HOOD INSTALLATION.

23 DEMO ROOF TOP UNIT AND ALL ASSOCIATED DUCTWORK, PIPING AND CONTROLS. PREPARE EXIST. ROOF CURB AND NATURAL GAS PIPING ON ROOF FOR NEW RTU INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

24 DEMO ALL STEAM AND CONDENSATE PIPING LOCATED IN TUNNEL.

25 DEMO HEATING SUPPLY AND RETURN PIPING AS INDICATED.

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27 DEMO STEAM PIPING SERVING UNITS A, B, AND C BACK TO MAIN AND CAP.

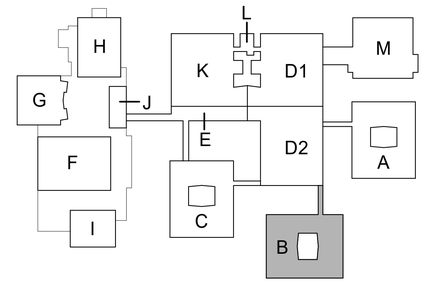
28 DEMO CONDENSATE PIPING SERVING UNITS A, B, AND C BACK TO MAINS AND CAP.

29 DEMO GRILLE OR DIFFUSER AND PREPARE EXISTING DUCTWORK FOR NEW GRILLE OR DIFFUSER INSTALLATION.

30 DEMO PAINT BOOTH SYSTEM INCLUDING EXHAUST FAN ON ROOF, AND ALL ASSOCIATED DUCTWORK, AND CONTROLS.

31 DEMO DUCTWORK AS INDICATED. COORDINATE DEMO WITH NEW WORK.

LEVEL 1 - KEY PLAN



KEY PLAN

SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 MECHANICAL DEMOLITION PLAN - UNIT B

DATE
NOVEMBER 22, 2022

SHEET NUMBER
MD 101B

21-807.00

LEVEL 1 MECHANICAL DEMOLITION - UNIT C

3/32" = 1'-0"

OMIT ALL WORK ON THIS SHEET.

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KEYED NOTES - DEMOLITION

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2 DEMO UNIT VENTILATOR AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW UNIT INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

3 DEMO CABINET HEATER AND ALL ASSOCIATED PIPING AND CONTROLS.

4 DEMO EXHAUST FAN AND PREPARE EXIST. ROOF CURB FOR NEW EXHAUST FAN INSTALLATION.

5 DEMO ACCU ON ROOF AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

6 DEMO GRADE MOUNTED ACCU AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

7 DEMO AIR HANDLING UNIT AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW UNIT INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

8 DEMO LABORATORY VACUUM PUMP SYSTEM.

9 DEMO AIR HANDLING UNIT AND ALL ASSOCIATED PIPING, DUCTWORK, AND CONTROLS. DEMO PIPING BACK TO MAINS AND CAP. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

10 DEMO ALL DUCTWOK ASSOCIATED WITH AHU DEMOLITION.

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12 DEMO TERMINAL UNIT AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW TERMINAL UNIT INSTALLATION.

13 DEMO FIN TUBE AND ALL ASSOCIATED PIPING AND CONTROLS.

14 DEMO UNIT HEATER AND ALL ASSOCIATED PIPING AND CONTROLS.

15 DEMO DUST COLLECTION SYSTEM AND ALL ASSOCIATED DUCTWORK.

16 DEMO EXHAUST FANS, WELDING HOODS, AND ALL ASSOCIATED DUCTWORK. DEMO EXHAUST DUCT THRU ROOF & PATCH ROOF.

17 DEMO CARBON MONOXIDE EXHAUST FAN AND ALL ASSOCIATED DUCTWORK. DEMO EXHAUST DUCT THRU ROOF & PATCH ROOF.

18 DEMO CARBON MONOXIDE EXHAUST FAN. PREPARE EXIST. DUCTWORK FOR NEW EXHAUST FAN INSTALLTION.

19 DEMO MAKE-UP AIR UNIT AND EXHAUST FAN SERVING PAINT BOOTH. PREPARE EXIST. DUCTWORK FOR NEW EXHAUT FAN AND MAKE-UP AIR UNIT INSTALLATION.

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21 DEMO SIDEWALL SUPPLY OR RETURN GRILLE AND PATCH WALL.

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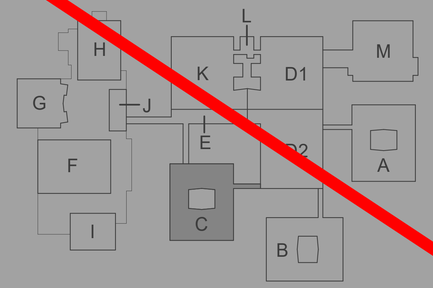
LEVEL 1 - KEY PLAN



KEY PLAN

SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

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LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

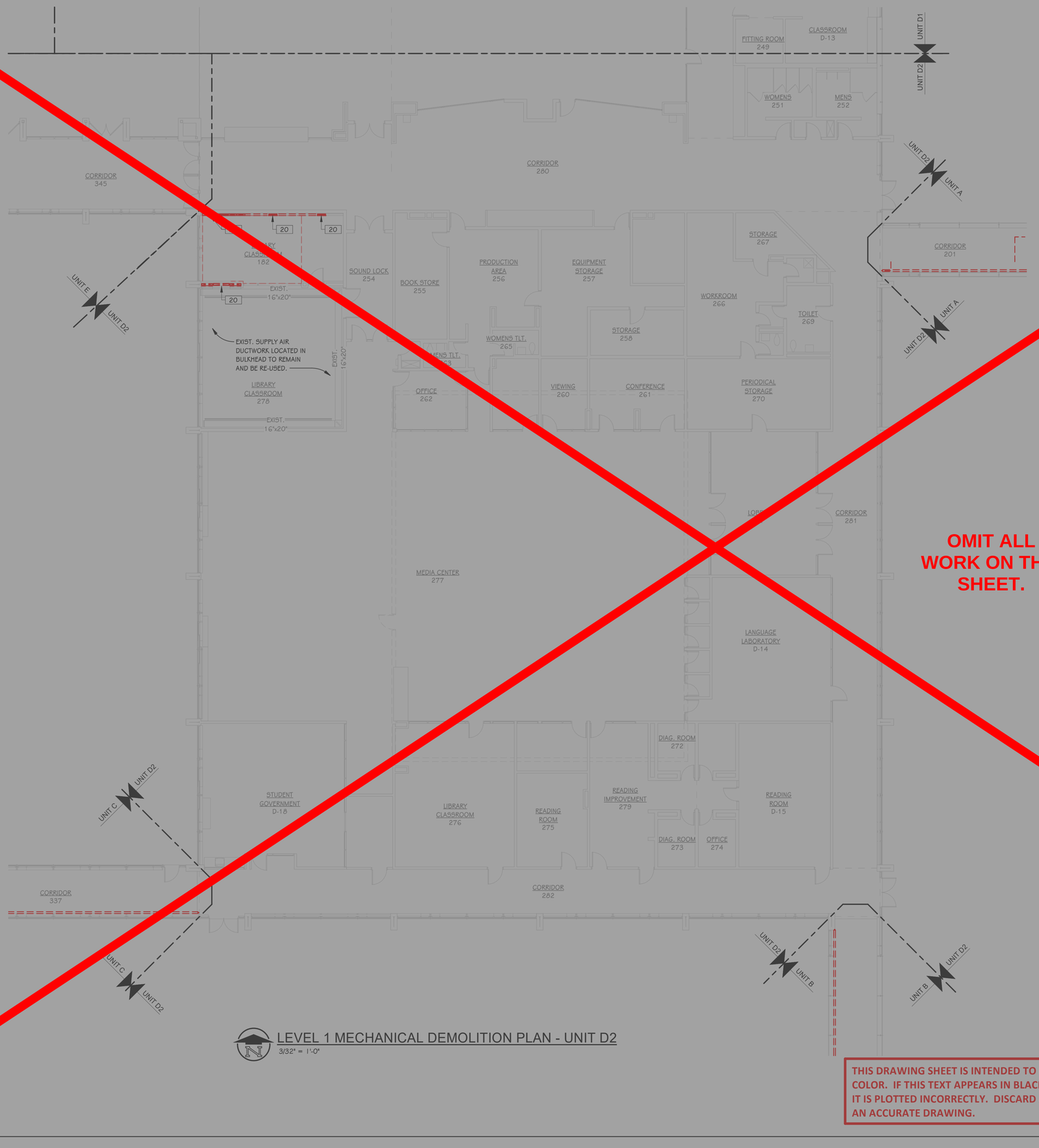
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 MECHANICAL DEMOLITION PLAN - UNIT C

DATE
NOVEMBER 22, 2022

SHEET NUMBER
MD 101C

21-807.00



LEVEL 1 MECHANICAL DEMOLITION PLAN - UNIT D2

3/32" = 1'-0"

OMIT ALL WORK ON THIS SHEET.

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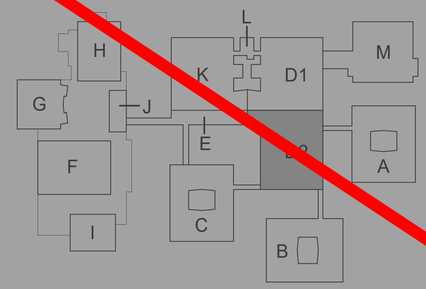
31 DEMO DUCTWORK AS INDICATED. COORDINATE DEMO WITH NEW WORK.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 MECHANICAL DEMOLITION PLAN - UNIT D2

DATE
NOVEMBER 22, 2022

SHEET NUMBER
MD 101D2

21-807.00

OMIT ALL WORK ON THIS SHEET.

LEVEL 1 MECHANICAL DEMOLITION PLAN - UNIT K
3/32" = 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.

KEYED NOTES - DEMOLITION

1 DEMO UNIT VENTILATOR AND ALL ASSOCIATED PIPING AND CONTROLS. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

2 DEMO UNIT VENTILATOR AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW UNIT INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

3 DEMO CABINET HEATER AND ALL ASSOCIATED PIPING AND CONTROLS.

4 DEMO EXHAUST FAN AND PREPARE EXIST. ROOF CURB FOR NEW EXHAUST FAN INSTALLATION.

5 DEMO ACCU ON ROOF AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

6 DEMO GRADE MOUNTED ACCU AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

7 DEMO AIR HANDLING UNIT AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW UNIT INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

8 DEMO LABORATORY VACUUM PUMP SYSTEM.

9 DEMO AIR HANDLING UNIT AND ALL ASSOCIATED PIPING, DUCTWORK, AND CONTROLS. DEMOLISH PIPING BACK TO MAINS AND CAP. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

10 DEMO ALL DUCTWOK ASSOCIATED WITH AHU DEMOLITION.

11 DEMO CONDENSATE PUMP AND ALL ASSOCIATED PIPING AND CONTROLS.

12 DEMO TERMINAL UNIT AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW TERMINAL UNIT INSTALLATION.

13 DEMO FIN TUBE AND ALL ASSOCIATED PIPING AND CONTROLS.

14 DEMO UNIT HEATER AND ALL ASSOCIATED PIPING AND CONTROLS.

15 DEMO DUST COLLECTION SYSTEM AND ALL ASSOCIATED DUCTWORK.

16 DEMO EXHAUST FANS, WELDING HOODS, AND ALL ASSOCIATED DUCTWORK. DEMO EXHAUST DUCT THRU ROOF & PATCH ROOF.

17 DEMO CARBON MONOXIDE EXHAUST FAN AND ALL ASSOCIATED DUCTWORK. DEMO EXHAUST DUCT THRU ROOF & PATCH ROOF.

18 DEMO CARBON MONOXIDE EXHAUST FAN. PREPARE EXIST. DUCTWORK FOR NEW EXHAUST FAN INSTALLTION.

19 DEMO MAKE-UP AIR UNIT AND EXHAUST FAN SERVING PAINT BOOTH. PREPARE EXIST. DUCTWORK FOR NEW EXHAUT FAN AND MAKE-UP AIR UNIT INSTALLATION.

20 DEMO GRILLE OR DIFFUSER AND ASSOCIATED DUCTWORK.

21 DEMO SIDEWALL SUPPLY OR RETURN GRILLE AND PATCH WALL.

22 DEMO EXHAUST FAN AND ASSOCIATED CONTROLS. PREPARE EXIST. ROOF CURB FOR NEW RELIEF HOOD INSTALLATION.

23 DEMO ROOF TOP UNIT AND ALL ASSOCIATED DUCTWORK, PIPING AND CONTROLS. PREPARE EXIST. ROOF CURB AND NATURAL GAS PIPING ON ROOF FOR NEW RTU INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

24 DEMO ALL STEAM AND CONDENSATE PIPING LOCATED IN TUNNEL.

25 DEMO HEATING SUPPLY AND RETURN PIPING AS INDICATED.

26 DEMO EXHAUST DUCT THRU ROOF & PATCH ROOF.

27 DEMO STEAM PIPING SERVING UNITS A, B, AND C BACK TO MAIN AND CAP.

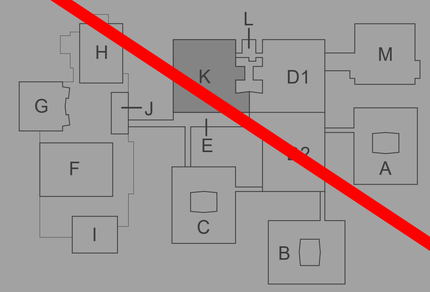
28 DEMO CONDENSATE PIPING SERVING UNITS A, B, AND C BACK TO MAINS AND CAP.

29 DEMO GRILLE OR DIFFUSER AND PREPARE EXISTING DUCTWORK FOR NEW GRILLE OR DIFFUSER INSTALLATION.

30 DEMO PAINT BOOTH SYSTEM INCLUDING EXHAUST FAN ON ROOF, AND ALL ASSOCIATED DUCTWORK, AND CONTROLS.

31 DEMO DUCTWORK AS INDICATED. COORDINATE DEMO WITH NEW WORK.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

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PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 MECHANICAL DEMOLITION PLAN - UNIT K

DATE
NOVEMBER 22, 2022

SHEET NUMBER
MD 101K
21-807.00

LEVEL 1 MECHANICAL DEMOLITION PLAN - UNIT M
3/32" = 1'-0"

OMIT ALL WORK ON THIS SHEET.

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3 DEMO CABINET HEATER AND ALL ASSOCIATED PIPING AND CONTROLS.

4 DEMO EXHAUST FAN AND PREPARE EXIST. ROOF CURB FOR NEW EXHAUST FAN INSTALLATION.

5 DEMO ACCU ON ROOF AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

6 DEMO GRADE MOUNTED ACCU AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

7 DEMO AIR HANDLING UNIT AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW UNIT INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

8 DEMO LABORATORY VACUUM PUMP SYSTEM.

9 DEMO AIR HANDLING UNIT AND ALL ASSOCIATED PIPING, DUCTWORK, AND CONTROLS. DEMO PIPING BACK TO MAINS AND CAP. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

10 DEMO ALL DUCTWOK ASSOCIATED WITH AHU DEMOLITION.

11 DEMO CONDENSATE PUMP AND ALL ASSOCIATED PIPING AND CONTROLS.

12 DEMO TERMINAL UNIT AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW TERMINAL UNIT INSTALLATION.

13 DEMO FIN TUBE AND ALL ASSOCIATED PIPING AND CONTROLS.

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15 DEMO DUST COLLECTION SYSTEM AND ALL ASSOCIATED DUCTWORK.

16 DEMO EXHAUST FANS, WELDING HOODS, AND ALL ASSOCIATED DUCTWORK. DEMO EXHAUST DUCT THRU ROOF & PATCH ROOF.

17 DEMO CARBON MONOXIDE EXHAUST FAN AND ALL ASSOCIATED DUCTWORK. DEMO EXHAUST DUCT THRU ROOF & PATCH ROOF.

18 DEMO CARBON MONOXIDE EXHAUST FAN. PREPARE EXIST. DUCTWORK FOR NEW EXHAUST FAN INSTALLTION.

19 DEMO MAKE-UP AIR UNIT AND EXHAUST FAN SERVING PAINT BOOTH. PREPARE EXIST. DUCTWORK FOR NEW EXHAUT FAN AND MAKE-UP AIR UNIT INSTALLATION.

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23 DEMO ROOF TOP UNIT AND ALL ASSOCIATED DUCTWORK, PIPING AND CONTROLS. PREPARE EXIST. ROOF CURB AND NATURAL GAS PIPING ON ROOF FOR NEW RTU INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

24 DEMO ALL STEAM AND CONDENSATE PIPING LOCATED IN TUNNEL.

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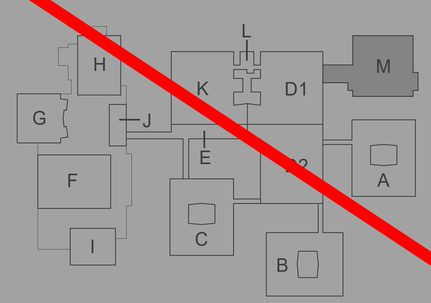
LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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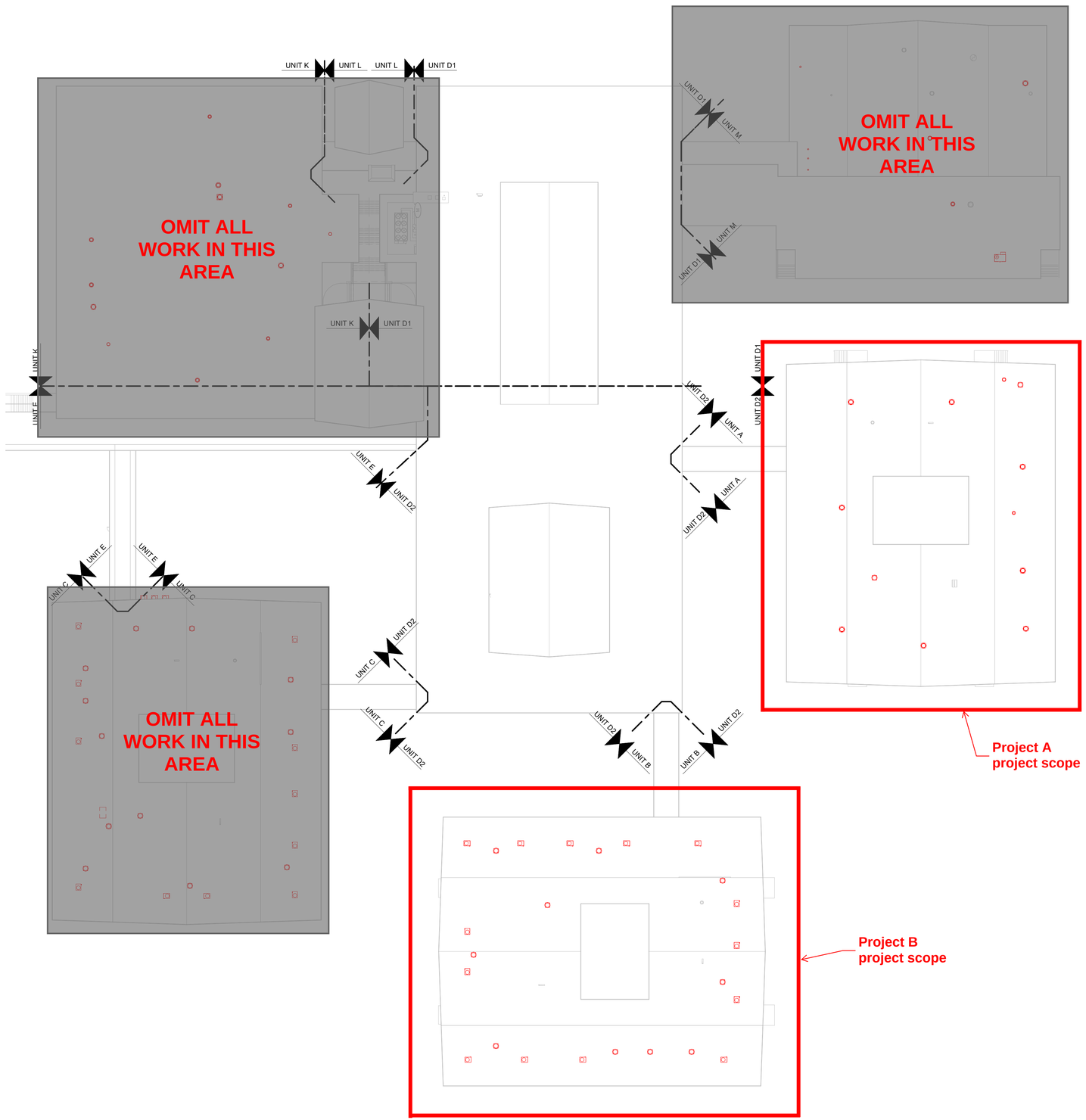
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 MECHANICAL DEMOLITION PLAN - UNIT M

DATE
NOVEMBER 22, 2022

SHEET NUMBER
MD 101M
21-807.00



ROOF MECHANICAL DEMOLITION PLAN - OVERALL
1" = 30'-0"

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1 DEMO UNIT VENTILATOR AND ALL ASSOCIATED PIPING AND CONTROLS. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

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3 DEMO CABINET HEATER AND ALL ASSOCIATED PIPING AND CONTROLS.

4 DEMO EXHAUST FAN AND PREPARE EXIST. ROOF CURB FOR NEW EXHAUST FAN INSTALLATION.

5 DEMO ACCU ON ROOF AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

6 DEMO GRADE MOUNTED ACCU AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

7 DEMO AIR HANDLING UNIT AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW UNIT INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

8 DEMO LABORATORY VACUUM PUMP SYSTEM.

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10 DEMO ALL DUCTWOK ASSOCIATED WITH AHU DEMOLITION.

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15 DEMO DUST COLLECTION SYSTEM AND ALL ASSOCIATED DUCTWORK.

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18 DEMO CARBON MONOXIDE EXHAUST FAN. PREPARE EXIST. DUCTWORK FOR NEW EXHAUST FAN INSTALLTION.

19 DEMO MAKE-UP AIR UNIT AND EXHAUST FAN SERVING PAINT BOOTH. PREPARE EXIST. DUCTWORK FOR NEW EXHAUT FAN AND MAKE-UP AIR UNIT INSTALLATION.

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21 DEMO SIDEWALL SUPPLY OR RETURN GRILLE AND PATCH WALL.

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24 DEMO ALL STEAM AND CONDENSATE PIPING LOCATED IN TUNNEL.

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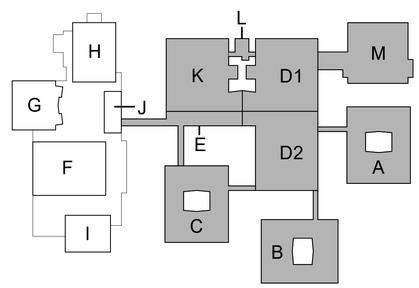
30 DEMO PAINT BOOTH SYSTEM INCLUDING EXHAUST FAN ON ROOF, AND ALL ASSOCIATED DUCTWORK, AND CONTROLS.

31 DEMO DUCTWORK AS INDICATED. COORDINATE DEMO WITH NEW WORK.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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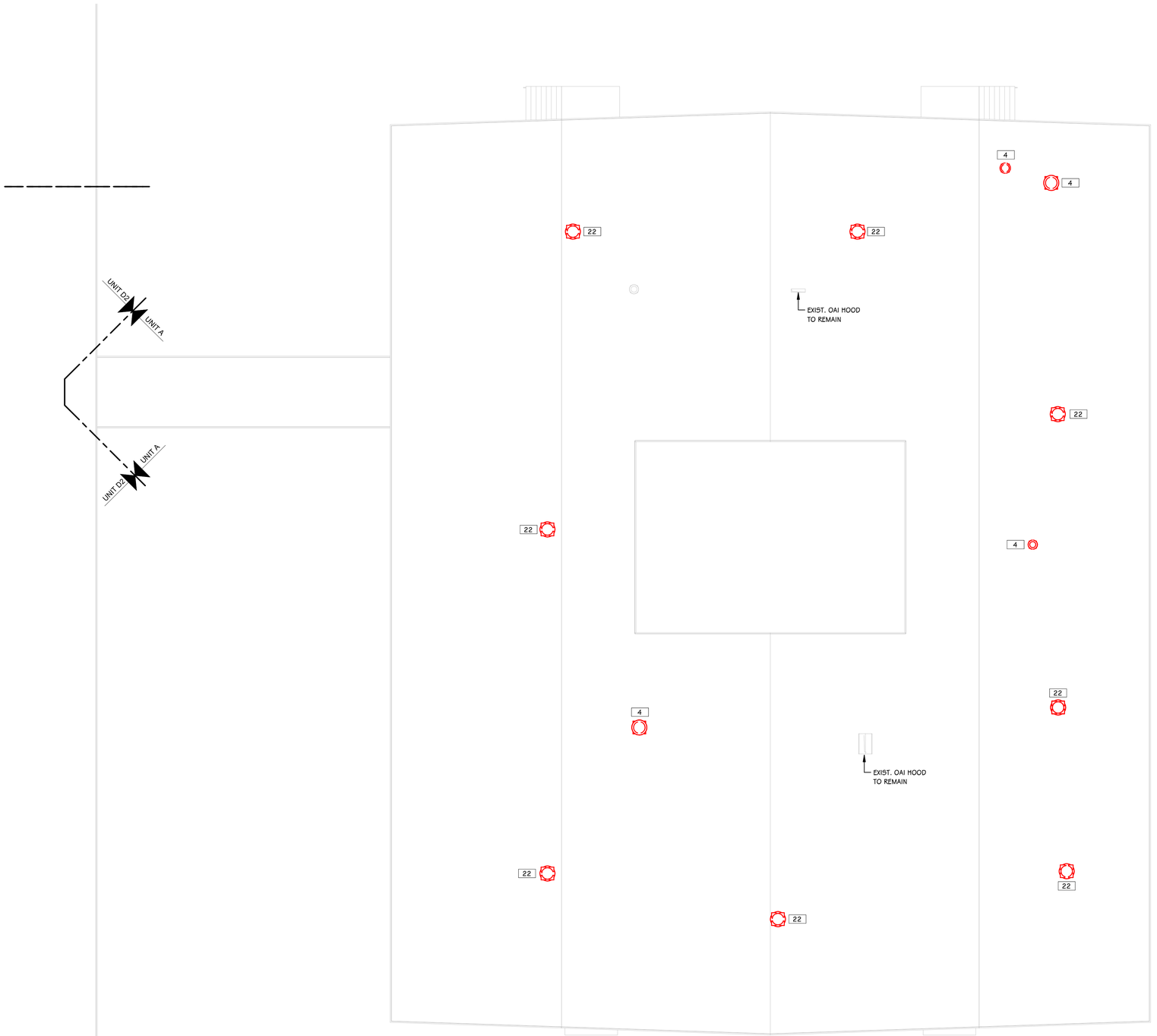
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ROOF MECHANICAL DEMOLITION PLAN - OVERALL

DATE
NOVEMBER 22, 2022

SHEET NUMBER
MD 150
21-807.00



ROOF MECHANICAL DEMOLITION PLAN - UNIT A
3/32" = 1'-0"

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3 DEMO CABINET HEATER AND ALL ASSOCIATED PIPING AND CONTROLS.

4 DEMO EXHAUST FAN AND PREPARE EXIST. ROOF CURB FOR NEW EXHAUST FAN INSTALLATION.

5 DEMO ACCU ON ROOF AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

6 DEMO GRADE MOUNTED ACCU AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

7 DEMO AIR HANDLING UNIT AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW UNIT INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

8 DEMO LABORATORY VACUUM PUMP SYSTEM.

9 DEMO AIR HANDLING UNIT AND ALL ASSOCIATED PIPING, DUCTWORK, AND CONTROLS. DEMO PIPING BACK TO MAINS AND CAP. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

10 DEMO ALL DUCTWOK ASSOCIATED WITH AHU DEMOLITION.

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12 DEMO TERMINAL UNIT AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW TERMINAL UNIT INSTALLATION.

13 DEMO FIN TUBE AND ALL ASSOCIATED PIPING AND CONTROLS.

14 DEMO UNIT HEATER AND ALL ASSOCIATED PIPING AND CONTROLS.

15 DEMO DUST COLLECTION SYSTEM AND ALL ASSOCIATED DUCTWORK.

16 DEMO EXHAUST FANS, WELDING HOODS, AND ALL ASSOCIATED DUCTWORK. DEMO EXHAUST DUCT THRU ROOF & PATCH ROOF.

17 DEMO CARBON MONOXIDE EXHAUST FAN AND ALL ASSOCIATED DUCTWORK. DEMO EXHAUST DUCT THRU ROOF & PATCH ROOF.

18 DEMO CARBON MONOXIDE EXHAUST FAN. PREPARE EXIST. DUCTWORK FOR NEW EXHAUST FAN INSTALLTION.

19 DEMO MAKE-UP AIR UNIT AND EXHAUST FAN SERVING PAINT BOOTH. PREPARE EXIST. DUCTWORK FOR NEW EXHAUT FAN AND MAKE-UP AIR UNIT INSTALLATION.

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24 DEMO ALL STEAM AND CONDENSATE PIPING LOCATED IN TUNNEL.

25 DEMO HEATING SUPPLY AND RETURN PIPING AS INDICATED.

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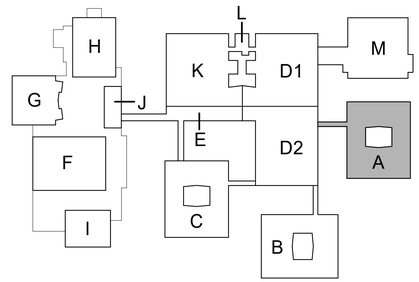
31 DEMO DUCTWORK AS INDICATED. COORDINATE DEMO WITH NEW WORK.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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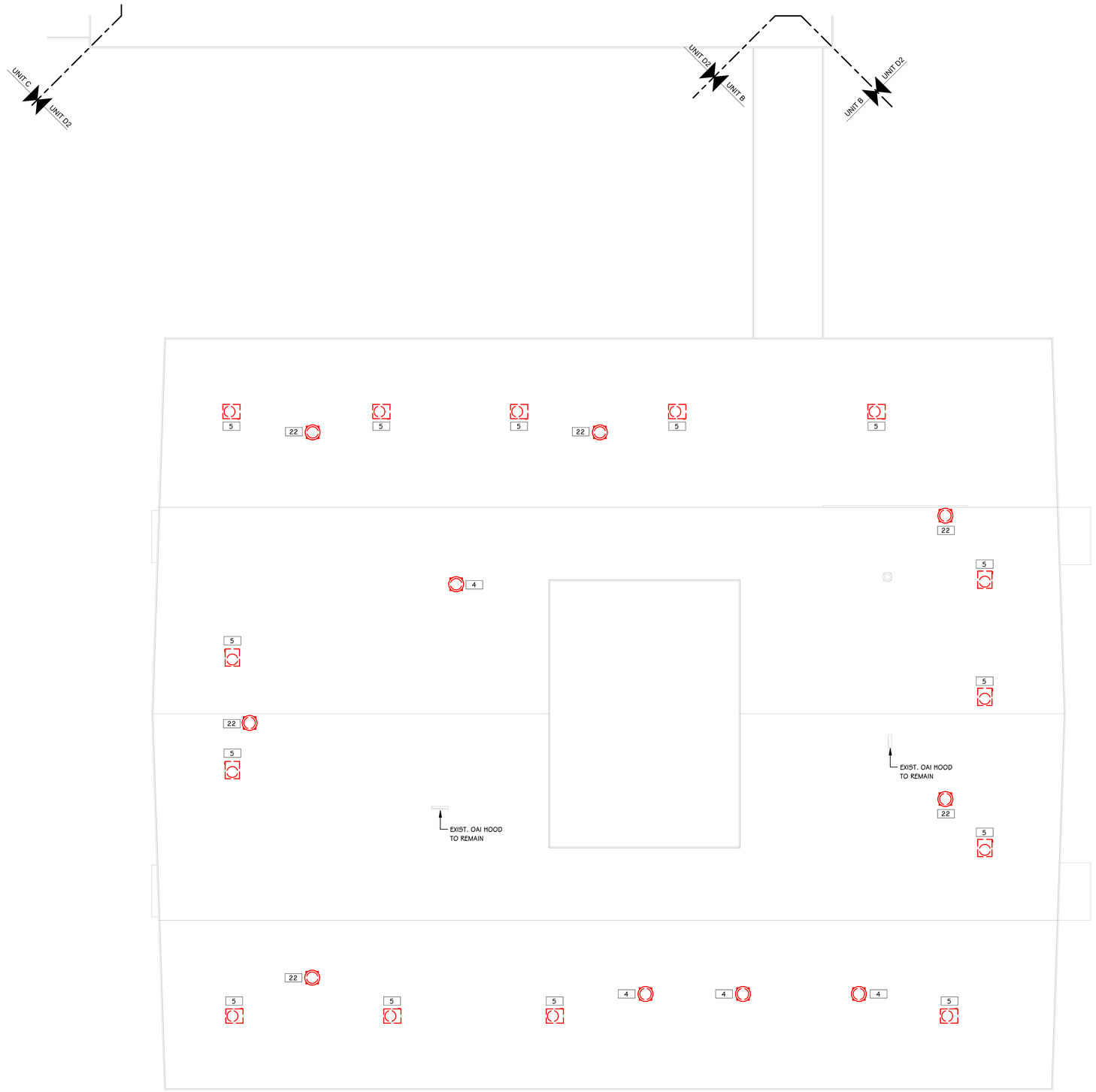
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ROOF MECHANICAL DEMOLITION PLAN - UNIT A

DATE
NOVEMBER 22, 2022

SHEET NUMBER
MD 150A
21-807.00



ROOF MECHANICAL DEMOLITION PLAN - UNIT B

3/32" = 1'-0"

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5 DEMO ACCU ON ROOF AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

6 DEMO GRADE MOUNTED ACCU AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

7 DEMO AIR HANDLING UNIT AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW UNIT INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

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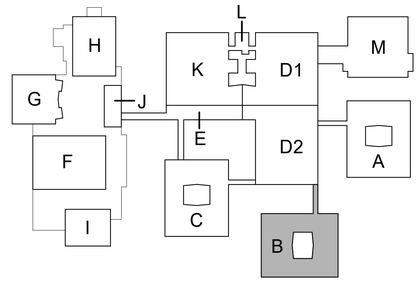
LEVEL 1 - KEY PLAN



KEY PLAN

SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

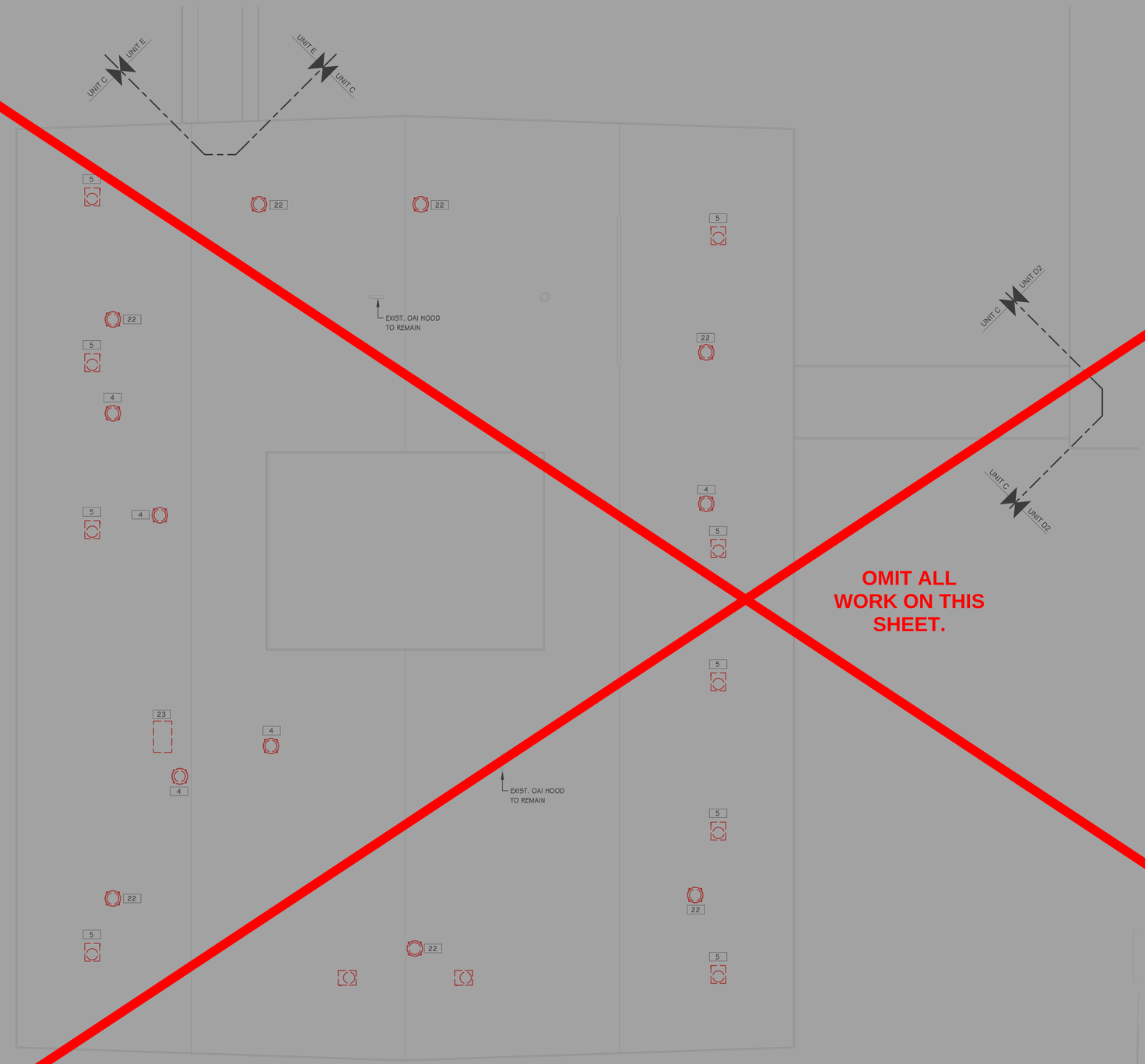
Kalamazoo, Michigan

SHEET TITLE
ROOF MECHANICAL DEMOLITION PLAN - UNIT B

DATE
NOVEMBER 22, 2022

SHEET NUMBER
MD 150B

21-807.00



OMIT ALL WORK ON THIS SHEET.

KEYED NOTES - DEMOLITION

1 DEMO UNIT VENTILATOR AND ALL ASSOCIATED PIPING AND CONTROLS. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

2 DEMO UNIT VENTILATOR AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW UNIT INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

3 DEMO CABINET HEATER AND ALL ASSOCIATED PIPING AND CONTROLS.

4 DEMO EXHAUST FAN AND PREPARE EXIST. ROOF CURB FOR NEW EXHAUST FAN INSTALLATION.

5 DEMO ACCU ON ROOF AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

6 DEMO GRADE MOUNTED ACCU AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

7 DEMO AIR HANDLING UNIT AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW UNIT INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

8 DEMO LABORATORY VACUUM PUMP SYSTEM.

9 DEMO AIR HANDLING UNIT AND ALL ASSOCIATED PIPING, DUCTWORK, AND CONTROLS. DEMO PIPING BACK TO MAINS AND CAP. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

10 DEMO ALL DUCTWOK ASSOCIATED WITH AHU DEMOLITION.

11 DEMO CONDENSATE PUMP AND ALL ASSOCIATED PIPING AND CONTROLS.

12 DEMO TERMINAL UNIT AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW TERMINAL UNIT INSTALLATION.

13 DEMO FIN TUBE AND ALL ASSOCIATED PIPING AND CONTROLS.

14 DEMO UNIT HEATER AND ALL ASSOCIATED PIPING AND CONTROLS.

15 DEMO DUST COLLECTION SYSTEM AND ALL ASSOCIATED DUCTWORK.

16 DEMO EXHAUST FANS, WELDING HOODS, AND ALL ASSOCIATED DUCTWORK. DEMO EXHAUST DUCT THRU ROOF & PATCH ROOF.

17 DEMO CARBON MONOXIDE EXHAUST FAN AND ALL ASSOCIATED DUCTWORK. DEMO EXHAUST DUCT THRU ROOF & PATCH ROOF.

18 DEMO CARBON MONOXIDE EXHAUST FAN. PREPARE EXIST. DUCTWORK FOR NEW EXHAUST FAN INSTALLTION.

19 DEMO MAKE-UP AIR UNIT AND EXHAUST FAN SERVING PAINT BOOTH. PREPARE EXIST. DUCTWORK FOR NEW EXHAUT FAN AND MAKE-UP AIR UNIT INSTALLATION.

20 DEMO GRILLE OR DIFFUSER AND ASSOCIATED DUCTWORK.

21 DEMO SIDEWALL SUPPLY OR RETURN GRILLE AND PATCH WALL.

22 DEMO EXHAUST FAN AND ASSOCIATED CONTROLS. PREPARE EXIST. ROOF CURB FOR NEW RELIEF HOOD INSTALLATION.

23 DEMO ROOF TOP UNIT AND ALL ASSOCIATED DUCTWORK, PIPING AND CONTROLS. PREPARE EXIST. ROOF CURB AND NATURAL GAS PIPING ON ROOF FOR NEW RTU INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

24 DEMO ALL STEAM AND CONDENSATE PIPING LOCATED IN TUNNEL.

25 DEMO HEATING SUPPLY AND RETURN PIPING AS INDICATED.

26 DEMO EXHAUST DUCT THRU ROOF & PATCH ROOF.

27 DEMO STEAM PIPING SERVING UNITS A, B, AND C BACK TO MAIN AND CAP.

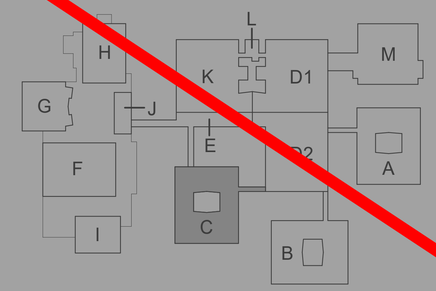
28 DEMO CONDENSATE PIPING SERVING UNITS A, B, AND C BACK TO MAINS AND CAP.

29 DEMO GRILLE OR DIFFUSER AND PREPARE EXISTING DUCTWORK FOR NEW GRILLE OR DIFFUSER INSTALLATION.

30 DEMO PAINT BOOTH SYSTEM INCLUDING EXHAUST FAN ON ROOF, AND ALL ASSOCIATED DUCTWORK, AND CONTROLS.

31 DEMO DUCTWORK AS INDICATED. COORDINATE DEMO WITH NEW WORK.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

ROOF MECHANICAL DEMOLITION PLAN - UNIT C
3/32" = 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.

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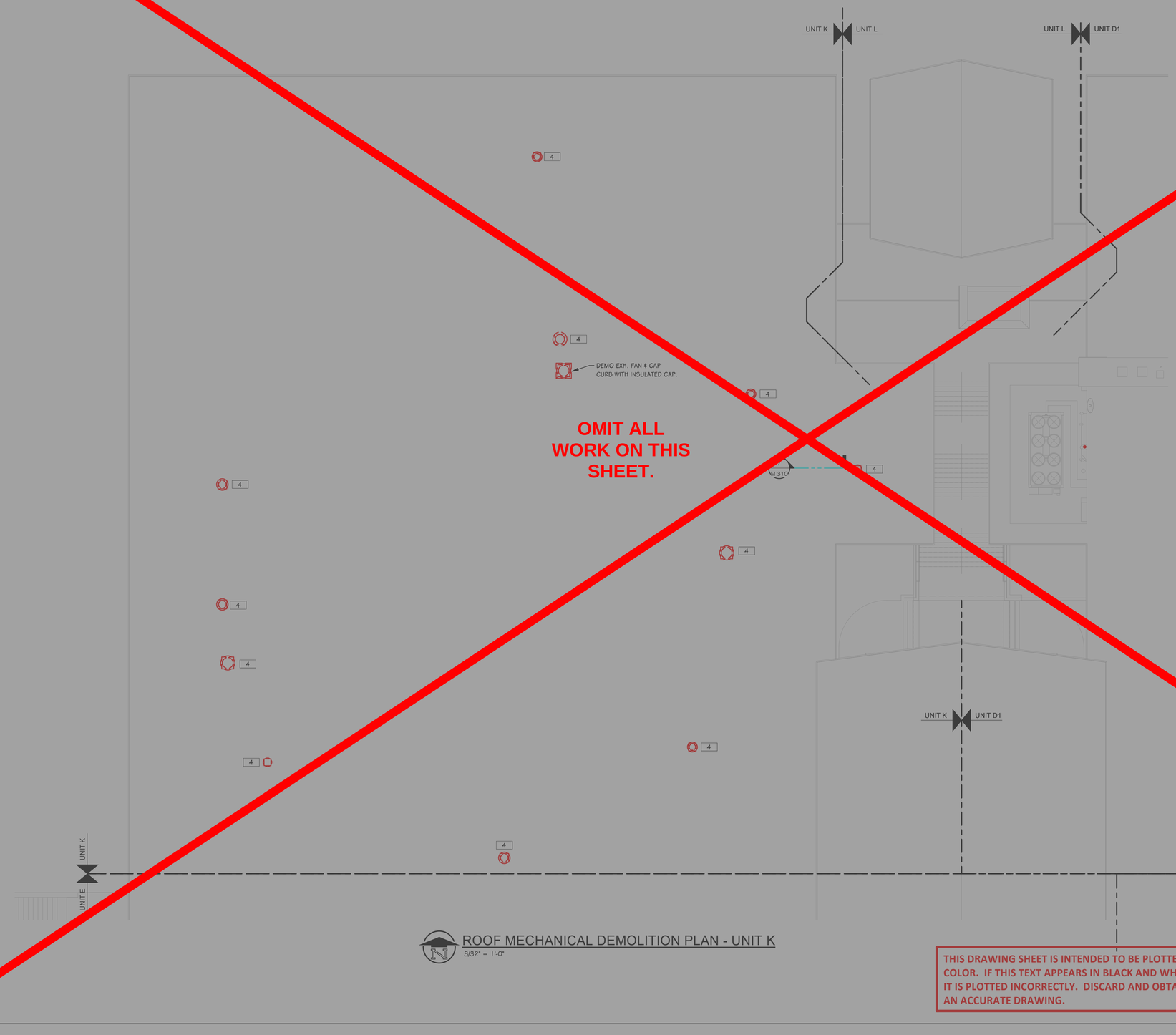
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ROOF MECHANICAL DEMOLITION PLAN - UNIT C

DATE
NOVEMBER 22, 2022

SHEET NUMBER
MD 150C
21-807.00



OMIT ALL WORK ON THIS SHEET.

ROOF MECHANICAL DEMOLITION PLAN - UNIT K
3/32" = 1'-0"

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3 DEMO CABINET HEATER AND ALL ASSOCIATED PIPING AND CONTROLS.

4 DEMO EXHAUST FAN AND PREPARE EXIST. ROOF CURB FOR NEW EXHAUST FAN INSTALLATION.

5 DEMO ACCU ON ROOF AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

6 DEMO GRADE MOUNTED ACCU AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

7 DEMO AIR HANDLING UNIT AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW UNIT INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

8 DEMO LABORATORY VACUUM PUMP SYSTEM.

9 DEMO AIR HANDLING UNIT AND ALL ASSOCIATED PIPING, DUCTWORK, AND CONTROLS. DEMO PIPING BACK TO MAINS AND CAP. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

10 DEMO ALL DUCTWOK ASSOCIATED WITH AHU DEMOLITION.

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19 DEMO MAKE-UP AIR UNIT AND EXHAUST FAN SERVING PAINT BOOTH. PREPARE EXIST. DUCTWORK FOR NEW EXHAUT FAN AND MAKE-UP AIR UNIT INSTALLATION.

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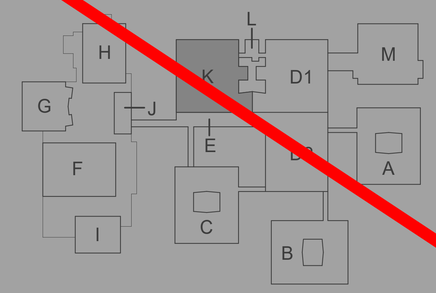
LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

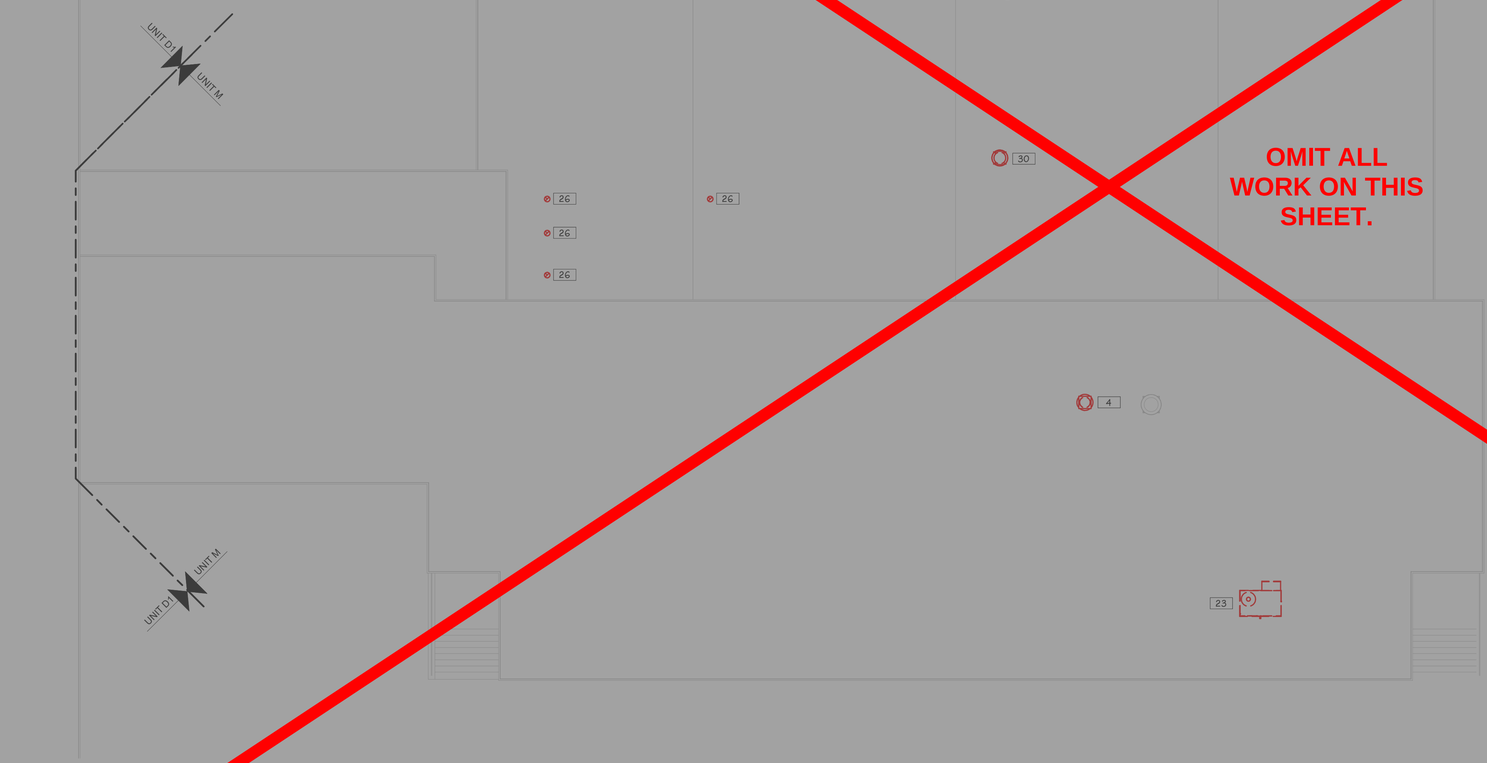
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ROOF MECHANICAL DEMOLITION PLAN - UNIT K

DATE
NOVEMBER 22, 2022

SHEET NUMBER
MD 150K
21-807.00



ROOF MECHANICAL DEMOLITION PLAN - UNIT M
3/32" = 1'-0"

OMIT ALL WORK ON THIS SHEET.

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3 DEMO CABINET HEATER AND ALL ASSOCIATED PIPING AND CONTROLS.

4 DEMO EXHAUST FAN AND PREPARE EXIST. ROOF CURB FOR NEW EXHAUST FAN INSTALLATION.

5 DEMO ACCU ON ROOF AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

6 DEMO GRADE MOUNTED ACCU AND ALL ASSOCIATED REFRIGERANT PIPING BACK TO UNIT VENTILATOR COIL.

7 DEMO AIR HANDLING UNIT AND ALL ASSOCIATED PIPING AND CONTROLS. PREPARE EXIST. DUCTWORK FOR NEW UNIT INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

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13 DEMO FIN TUBE AND ALL ASSOCIATED PIPING AND CONTROLS.

14 DEMO UNIT HEATER AND ALL ASSOCIATED PIPING AND CONTROLS.

15 DEMO DUST COLLECTION SYSTEM AND ALL ASSOCIATED DUCTWORK.

16 DEMO EXHAUST FANS, WELDING HOODS, AND ALL ASSOCIATED DUCTWORK. DEMO EXHAUST DUCT THRU ROOF & PATCH ROOF.

17 DEMO CARBON MONOXIDE EXHAUST FAN AND ALL ASSOCIATED DUCTWORK. DEMO EXHAUST DUCT THRU ROOF & PATCH ROOF.

18 DEMO CARBON MONOXIDE EXHAUST FAN. PREPARE EXIST. DUCTWORK FOR NEW EXHAUST FAN INSTALLTION.

19 DEMO MAKE-UP AIR UNIT AND EXHAUST FAN SERVING PAINT BOOTH. PREPARE EXIST. DUCTWORK FOR NEW EXHAUT FAN AND MAKE-UP AIR UNIT INSTALLATION.

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21 DEMO SIDEWALL SUPPLY OR RETURN GRILLE AND PATCH WALL.

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23 DEMO ROOF TOP UNIT AND ALL ASSOCIATED DUCTWORK, PIPING AND CONTROLS. PREPARE EXIST. ROOF CURB AND NATURAL GAS PIPING ON ROOF FOR NEW RTU INSTALLATION. REMOVE AND SALVAGE BI-POLAR IONIZATION DEVICE FOR REINSTALLATION.

24 DEMO ALL STEAM AND CONDENSATE PIPING LOCATED IN TUNNEL.

25 DEMO HEATING SUPPLY AND RETURN PIPING AS INDICATED.

26 DEMO EXHAUST DUCT THRU ROOF & PATCH ROOF.

27 DEMO STEAM PIPING SERVING UNITS A, B, AND C BACK TO MAIN AND CAP.

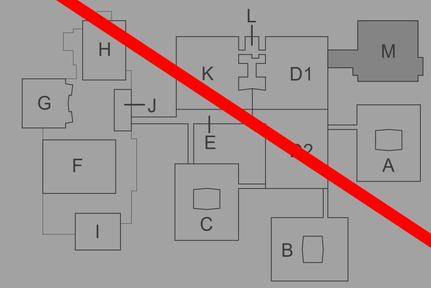
28 DEMO CONDENSATE PIPING SERVING UNITS A, B, AND C BACK TO MAINS AND CAP.

29 DEMO GRILLE OR DIFFUSER AND PREPARE EXISTING DUCTWORK FOR NEW GRILLE OR DIFFUSER INSTALLATION.

30 DEMO PAINT BOOTH SYSTEM INCLUDING EXHAUST FAN ON ROOF, AND ALL ASSOCIATED DUCTWORK, AND CONTROLS.

31 DEMO DUCTWORK AS INDICATED. COORDINATE DEMO WITH NEW WORK.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

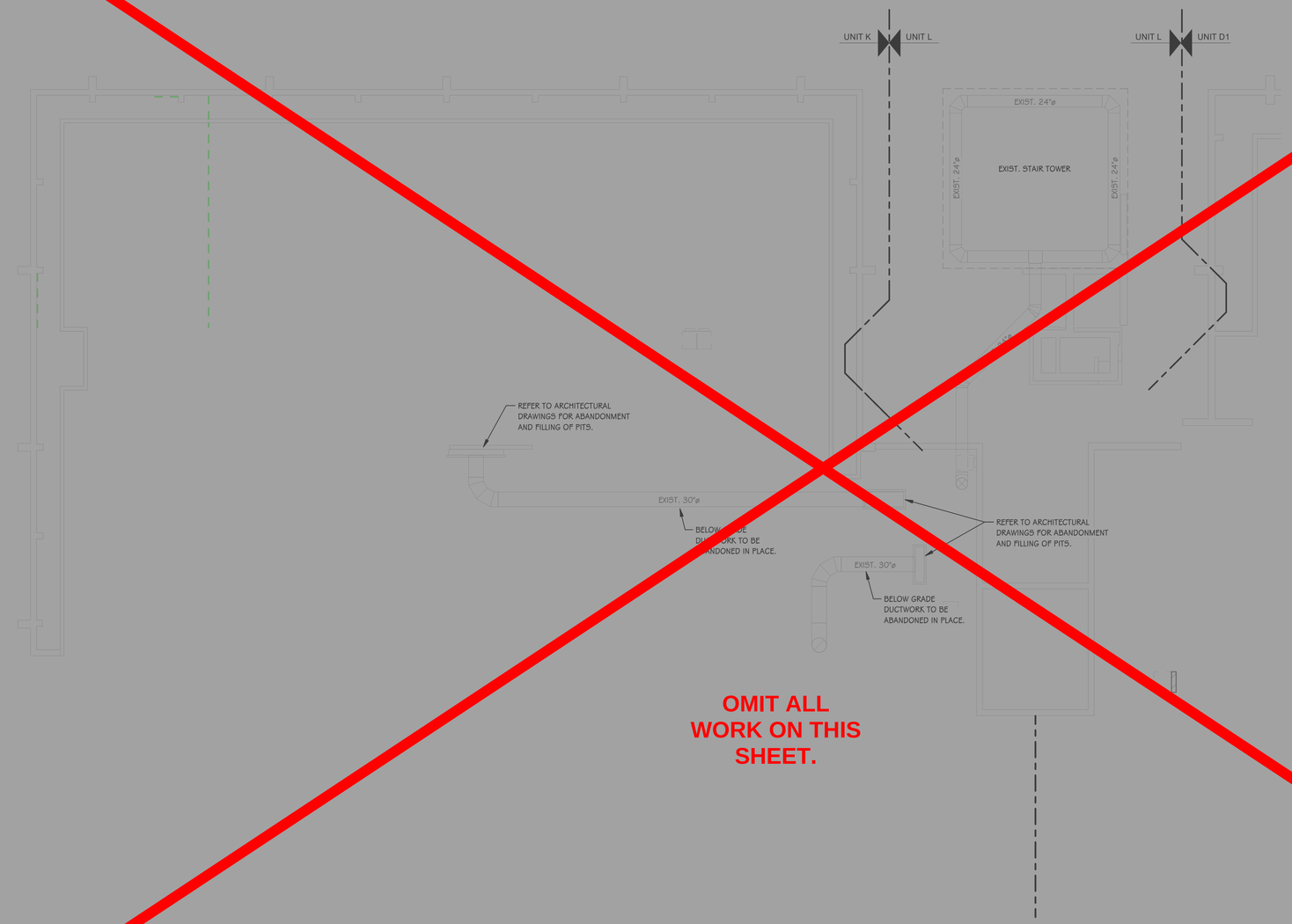
OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ROOF MECHANICAL DEMOLITION PLAN - UNIT M

DATE
NOVEMBER 22, 2022

SHEET NUMBER
MD 150M

21-807.00



OMIT ALL WORK ON THIS SHEET.

FOUNDATION SHEET METAL PLAN - UNIT K
3/32" = 1'-0"

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KEYED NOTES - SHEET METAL

1 INSTALL EXHAUST FAN ON EXISTING ROOF CURB. INSTALL CURB ADAPTER IF REQUIRED. CLEAN EXISTING EXHAUST DUCTWORK. PROVIDE PHOTO DOCUMENTATION.

2 INSTALL CEILING MOUNTED UNIT VENTILATOR. REWORK EXISTING SUPPLY, RETURN, AND OAI DUCTWORK AS REQUIRED TO RECONNECT. CLEAN EXISTING DUCTWORK. PROVIDE PHOTO DOCUMENTATION.

3 INSTALL AIR HANDLING UNIT. REWORK EXIST. DUCTWORK AS REQUIRED TO RECONNECT. CLEAN EXISTING DUCTWORK. PROVIDE PHOTO DOCUMENTATION

4 INSTALL MAKE-UP AIR UNIT AND EXHAUST FAN TO SERVE THE PAINT BOOTH. MODIFY EXISTING DUCTWORK AS REQUIRED TO RECONNECT.

5 CLEAN EXISTING SUPPLY, RETURN, AND EXHAUST DUCTWORK IN THIS AREA. PROVIDE PHOTO DOCUMENTATION.

6 INSTALL RELIEF HOOD ON EXIST. ROOF CURB. CLEAN EXISTING RELIEF AIR DUCTWORK. PROVIDE PHOTO DOCUMENTATION.

7 INSTALL 14"x14" RELIEF AIR DUCT AND GRILLE. CONNECT TO EXISTING PLENUM.

8 CLEAN EXIST. DUCTWORK AND INSTALL NEW GRILLE OR DIFFUSER. MODIFY EXISTING DUCTWORK AS REQUIRED TO RECONNECT. VERIFY IF BALANCE DAMPER EXIST AND IS OPERATIONAL OR INSTALL NEW ONE IF REQUIRED.

9 CONNECT TO EXISTING DUCTWORK.

10 REFRIGERANT PIPING FROM BELOW TO ACCU. REFER TO PIPING PORTAL / CURB DETAIL ON SHEET M505. REFRIGERANT PIPING SIZED PER MANUFACTURE'S RECOMMENDATIONS.

11 INSTALL SALVAGED BI-POLAR IONIZATION INTO AIR HANDLING UNIT.

13 PAINT TO MATCH EXISTING.

16 INSTALL BALANCE DAMPER IN THE VERTICAL.

17 ROUTE BRANCH DUCTWORK THRU BAR JOIST (TYP.)

18 REFER TO ROOF EXHAUSTER DETAIL - UPBLAST (WITH WINDBAND) DETAIL ON SHEET M506.

19 REFER TO VERTICAL UNIT VENTILATOR DETAIL WITH 15" REAR EXTENSION ON SHEET M507.

20 INSTALL DUCT LINER ON RETURN AIR PLENUM FROM RTU TO RETURN AIR GRILLE.

21 SUPPLY DUCTWORK INSTALLED BELOW CEILING AS HIGH AS POSSIBLE.

22 REFER TO ENLARGED MECHANICAL PLAN ON SHEET M302 FOR CONTINUATION.

23 CONNECT TO EXISTING DUCTWORK. TRANSITION AS REQUIRED TO CONNECT.

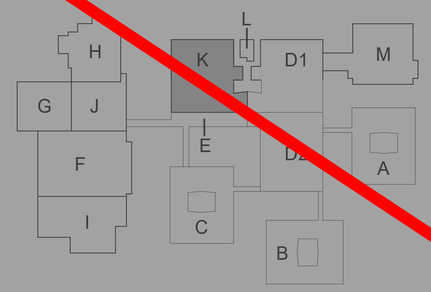
24 INSTALL RTU ON EXISTING ROOF CURB. MODIFY EXISTING GAS PIPING ON ROOF AS REQUIRED TO CONNECT.

25 EXTEND GRILLE OUT TO FACE OF EXIST. EXHAUST HOOD.

26 ¾" CONDENSATE DRAIN FROM CONDENSATE LIFT PUMP IN TUNNEL. SPILL CONDENSATE ON ROOF.

27 INSTALL 20"x80" TRANSFER AIR GRILLES ON BOTH SIDES OF WALL TO COVER UP EXISTING OPENING.

LOWER LEVEL - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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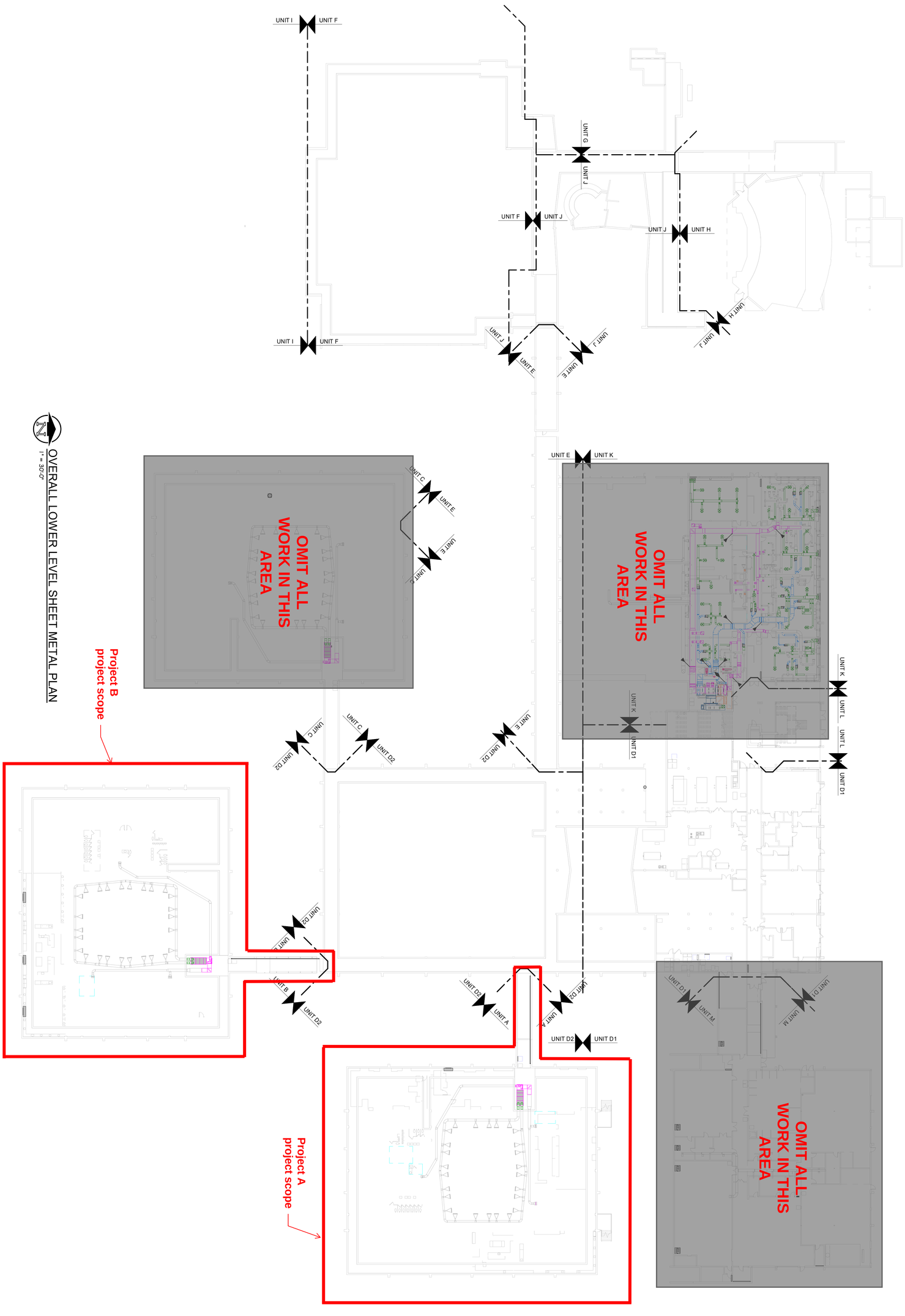
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS
PROJECT NO. 21-807.00

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
FOUNDATION SHEET METAL PLAN - UNIT K

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 000K



SHEET TITLE
OVERALL LOWER LEVEL SHEET METAL PLAN

SHEET NUMBER
M 100
21-807.00

DATE
NOVEMBER 22, 2022

OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

ISSUED FOR — **DATE**
Addendum No. 2 — December 16, 2022

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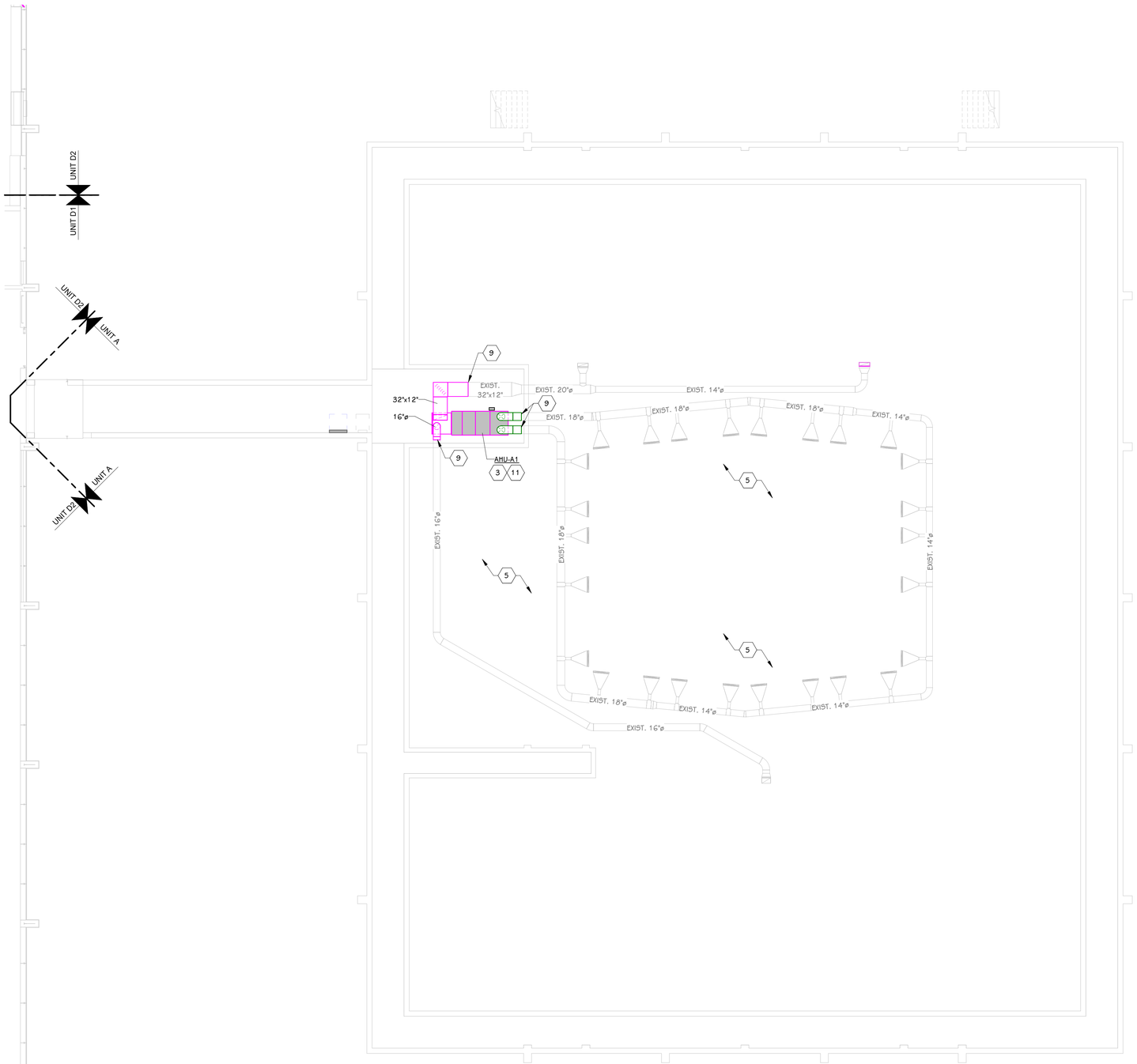

LOWER LEVEL SHEET METAL PLAN - UNIT A
3/32" = 1'-0"

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2 INSTALL CEILING MOUNTED UNIT VENTILATOR. REWORK EXISTING SUPPLY, RETURN, AND OAI DUCTWORK AS REQUIRED TO RECONNECT. CLEAN EXISTING DUCTWORK. PROVIDE PHOTO DOCUMENTATION.

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22 REFER TO ENLARGED MECHANICAL PLAN ON SHEET M302 FOR CONTINUATION.

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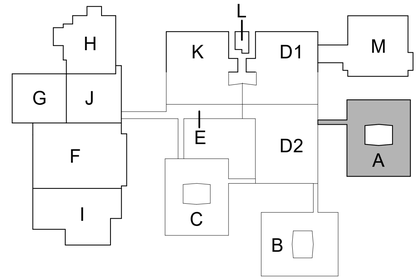
LOWER LEVEL - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

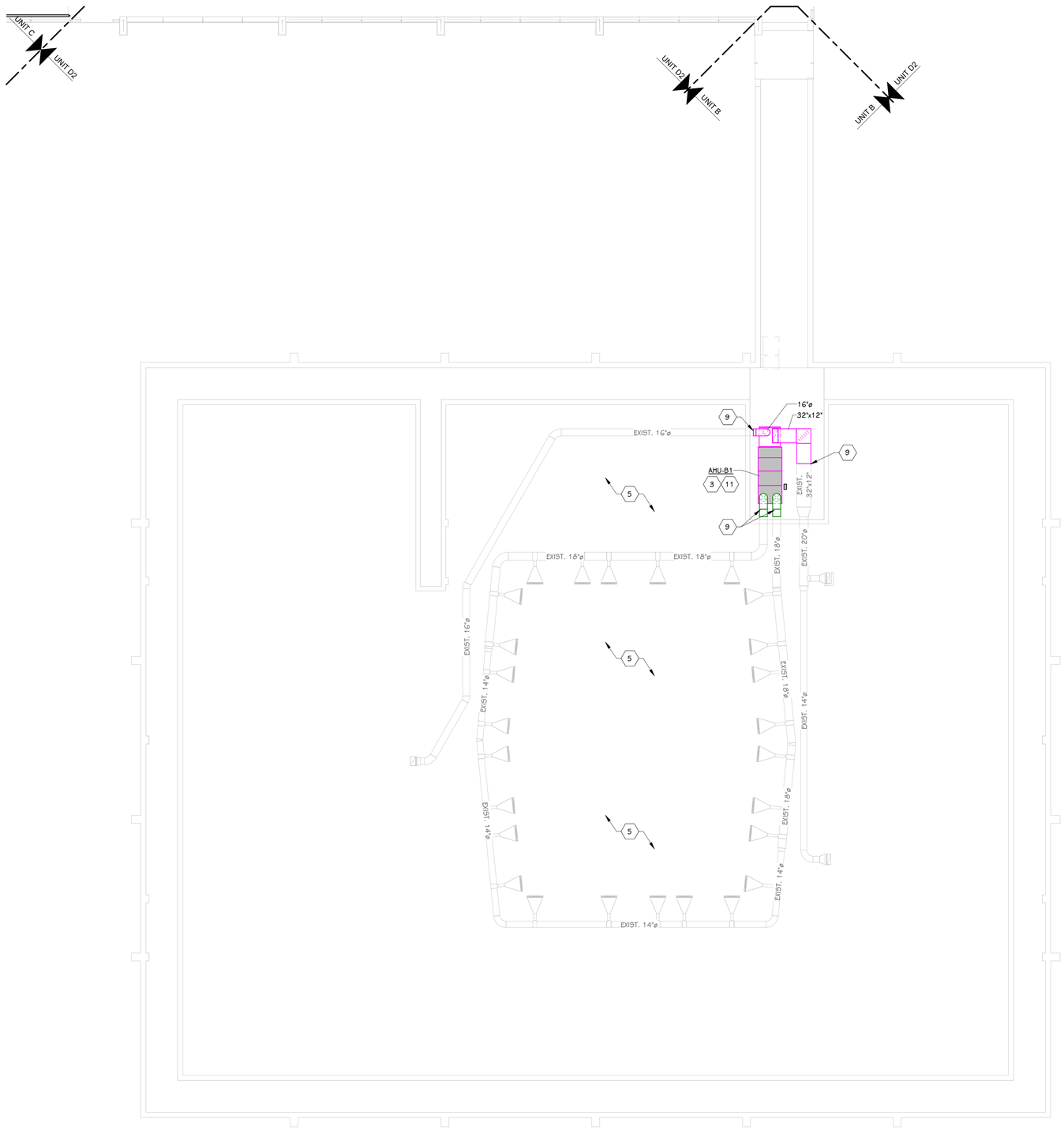
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL SHEET METAL PLANS - UNIT A

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 100A
21-807.00



LOWER LEVEL SHEET METAL PLAN - UNIT B
3/32" = 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.

KEYED NOTES - SHEET METAL

1 INSTALL EXHAUST FAN ON EXISTING ROOF CURB. INSTALL CURB ADAPTER IF REQUIRED. CLEAN EXISTING EXHAUST DUCTWORK. PROVIDE PHOTO DOCUMENTATION.

2 INSTALL CEILING MOUNTED UNIT VENTILATOR. REWORK EXISTING SUPPLY, RETURN, AND OAI DUCTWORK AS REQUIRED TO RECONNECT. CLEAN EXISTING DUCTWORK. PROVIDE PHOTO DOCUMENTATION.

3 INSTALL AIR HANDLING UNIT. REWORK EXIST. DUCTWORK AS REQUIRED TO RECONNECT. CLEAN EXISTING DUCTWORK. PROVIDE PHOTO DOCUMENTATION

4 INSTALL MAKE-UP AIR UNIT AND EXHAUST FAN TO SERVE THE PAINT BOOTH. MODIFY EXISTING DUCTWORK AS REQUIRED TO RECONNECT.

5 CLEAN EXISTING SUPPLY, RETURN, AND EXHAUST DUCTWORK IN THIS AREA. PROVIDE PHOTO DOCUMENTATION.

6 INSTALL RELIEF HOOD ON EXIST. ROOF CURB. CLEAN EXISTING RELIEF AIR DUCTWORK. PROVIDE PHOTO DOCUMENTATION.

7 INSTALL 14"x14" RELIEF AIR DUCT AND GRILLE. CONNECT TO EXISTING PLENUM.

8 CLEAN EXIST. DUCTWORK AND INSTALL NEW GRILLE OR DIFFUSER. MODIFY EXISTING DUCTWORK AS REQUIRED TO RECONNECT. VERIFY IF BALANCE DAMPER EXIST AND IS OPERATIONAL AND INSTALL NEW ONE IF REQUIRED.

9 CONNECT TO EXISTING DUCTWORK.

10 REFRIGERANT PIPING FROM BELOW TO ACCU. REFER TO PIPING PORTAL / CURB DETAIL ON SHEET M505. REFRIGERANT PIPING SIZED PER MANUFACTURE'S RECOMMENDATIONS.

11 INSTALL SALVAGED BI-POLAR IONIZATION INTO AIR HANDLING UNIT.

13 PAINT TO MATCH EXISTING.

16 INSTALL BALANCE DAMPER IN THE VERTICAL.

17 ROUTE BRANCH DUCTWORK THRU BAR JOIST (TYP.)

18 REFER TO ROOF EXHAUSTER DETAIL - UPBLAST (WITH WINDBAND) DETAIL ON SHEET M506.

19 REFER TO VERTICAL UNIT VENTILATOR DETAIL WITH 15" REAR EXTENSION ON SHEET M507.

20 INSTALL DUCT LINER ON RETURN AIR PLENUM FROM RTU TO RETURN AIR GRILLE.

21 SUPPLY DUCTWORK INSTALLED BELOW CEILING AS HIGH AS POSSIBLE.

22 REFER TO ENLARGED MECHANICAL PLAN ON SHEET M302 FOR CONTINUATION.

23 CONNECT TO EXISTING DUCTWORK. TRANSITION AS REQUIRED TO CONNECT.

24 INSTALL RTU ON EXISTING ROOF CURB. MODIFY EXISTING GAS PIPING ON ROOF AS REQUIRED TO CONNECT.

25 EXTEND GRILLE OUT TO FACE OF EXIST. EXHAUST HOOD.

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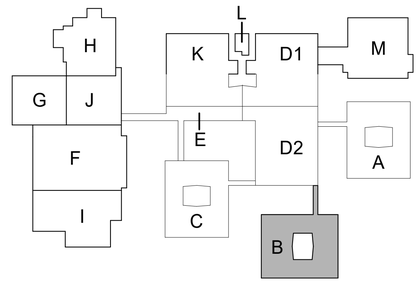
LOWER LEVEL - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL SHEET METAL PLAN - UNIT B

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 100B
21-807.00

LOWER LEVEL SHEET METAL PLAN - UNIT C
3/32" = 1'-0"

OMIT ALL WORK ON THIS SHEET.

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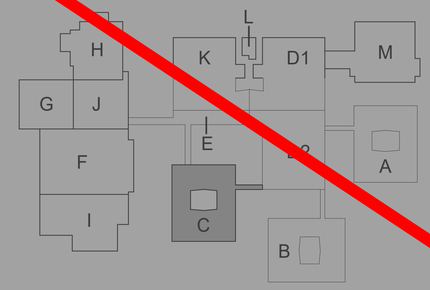

KEY PLAN
SCALE: NO SCALE

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OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL SHEET METAL PLAN - UNIT C

DATE
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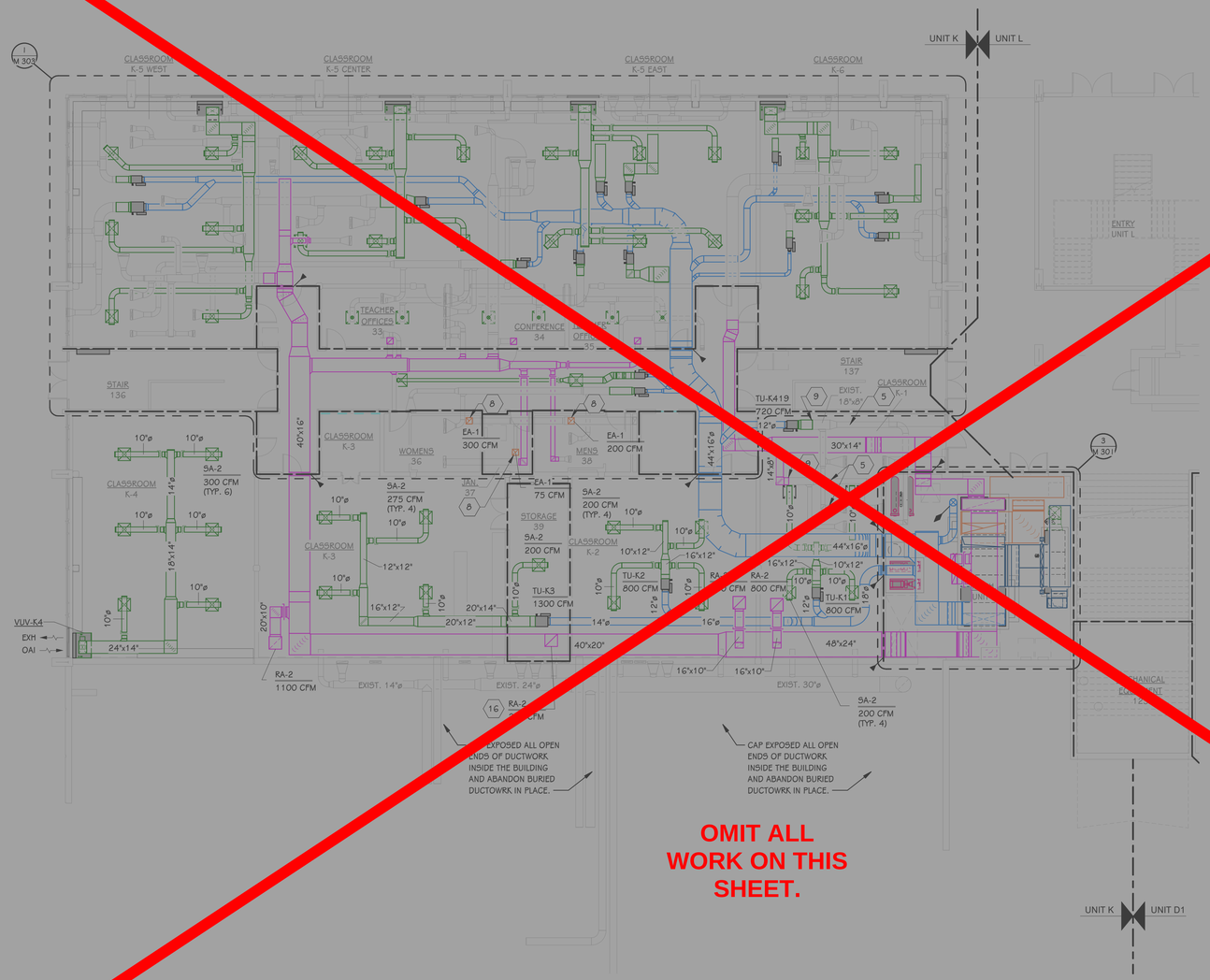
M 100C
21-807.00



OMIT ALL WORK ON THIS SHEET.

LOWER LEVEL SHEET METAL PLAN - UNIT K
3/32" = 1'-0"

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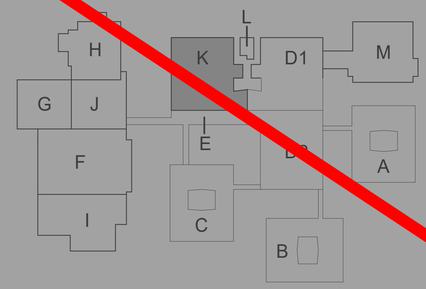

KEY PLAN
SCALE: NO SCALE

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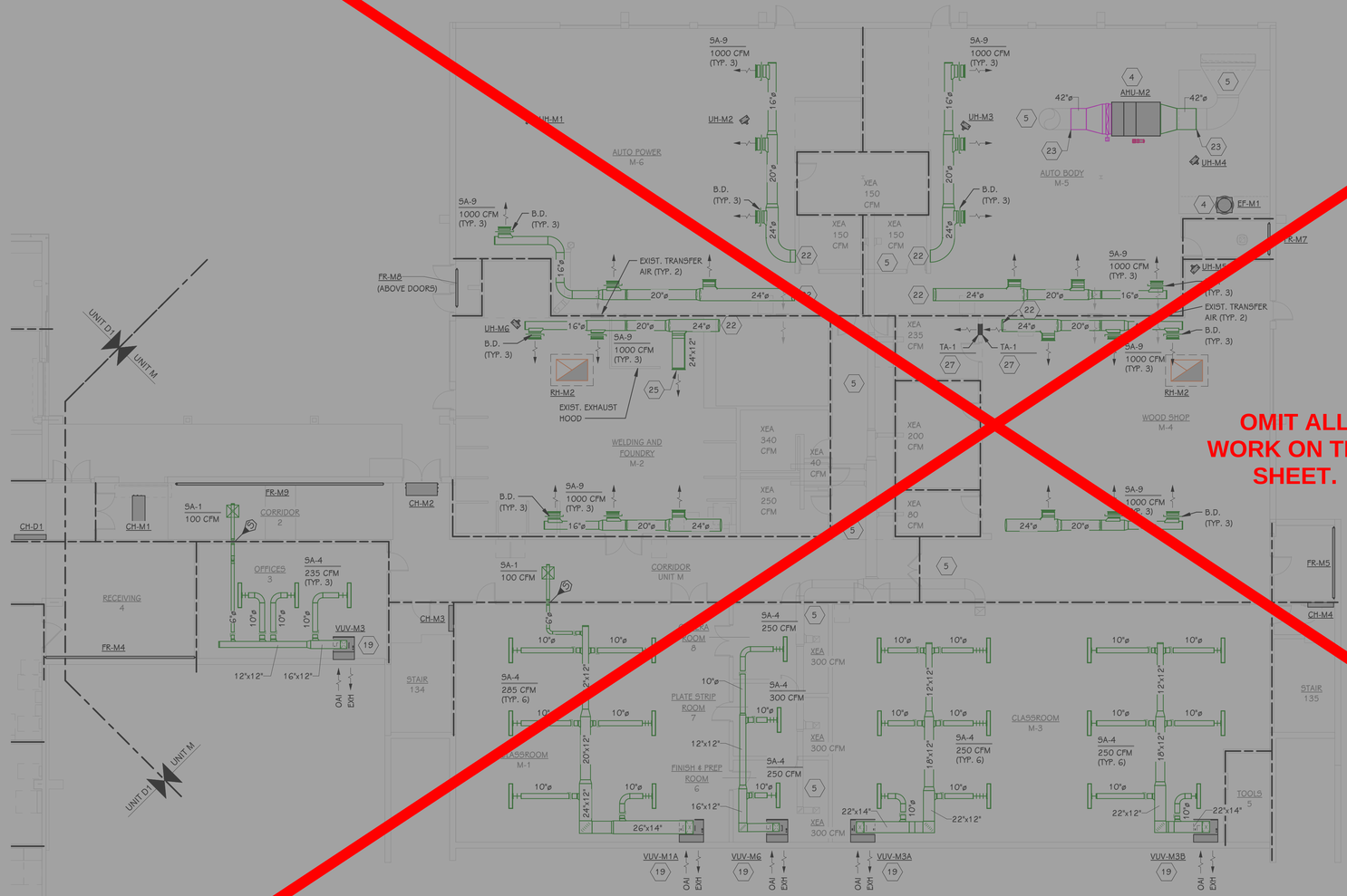
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL SHEET METAL PLAN - UNIT K

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 100K
21-807.00



LOWER LEVEL SHEET METAL PLAN - UNIT M

3/32" = 1'-0"

OMIT ALL WORK ON THIS SHEET.

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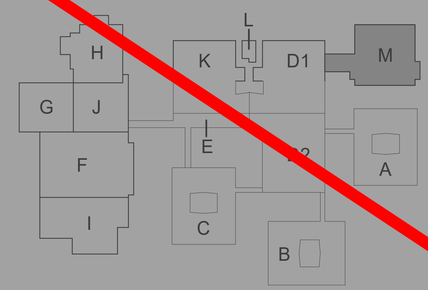
LOWER LEVEL - KEY PLAN



KEY PLAN

SCALE: NO SCALE

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LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

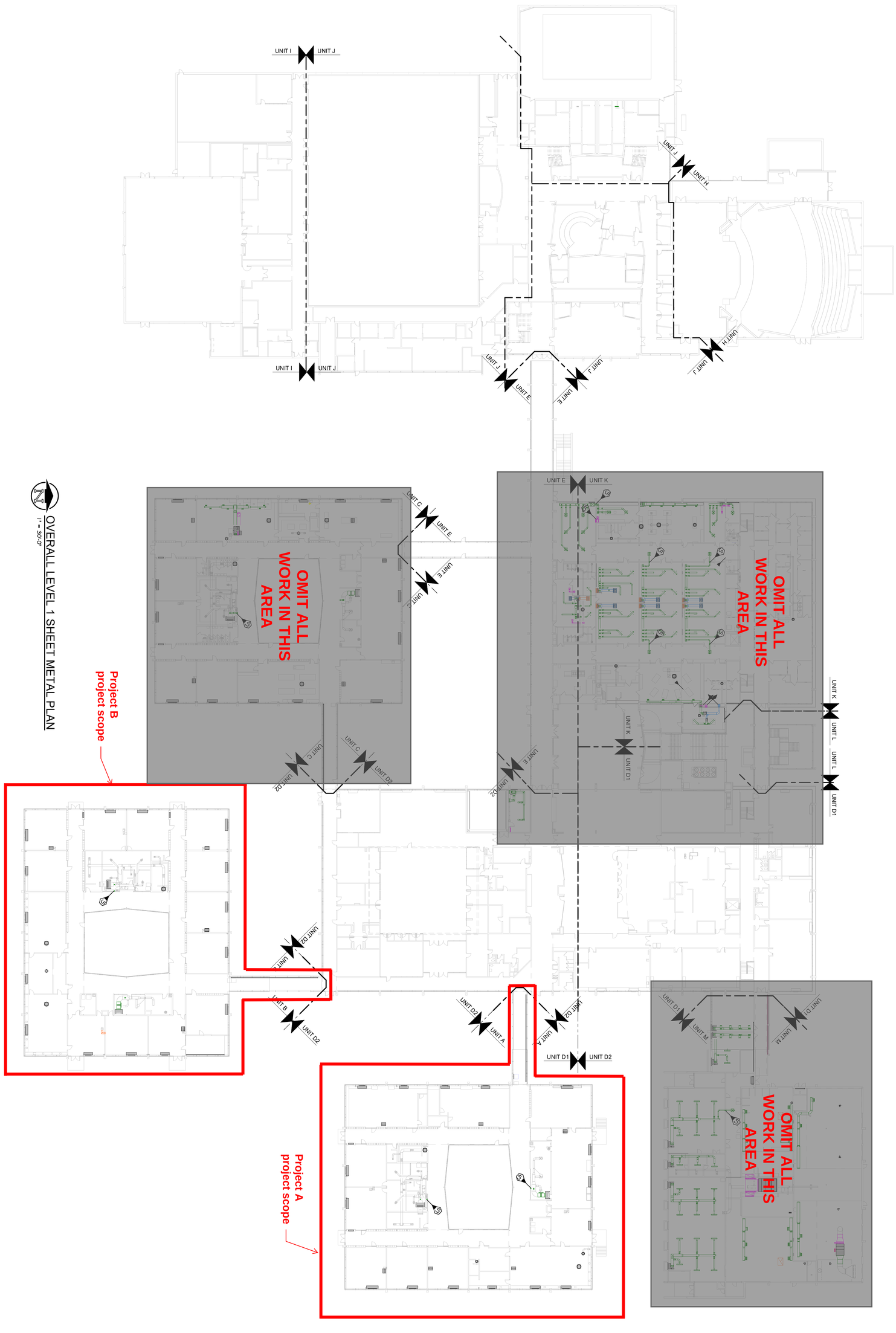
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL SHEET METAL PLAN - UNIT M

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 100M

21-807.00



SHEET TITLE
OVERALL LEVEL 1 SHEET METAL PLAN

SHEET NUMBER
M 101
21-807.00

DATE
NOVEMBER 22, 2022

OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

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Addendum No. 2 — December 16, 2022

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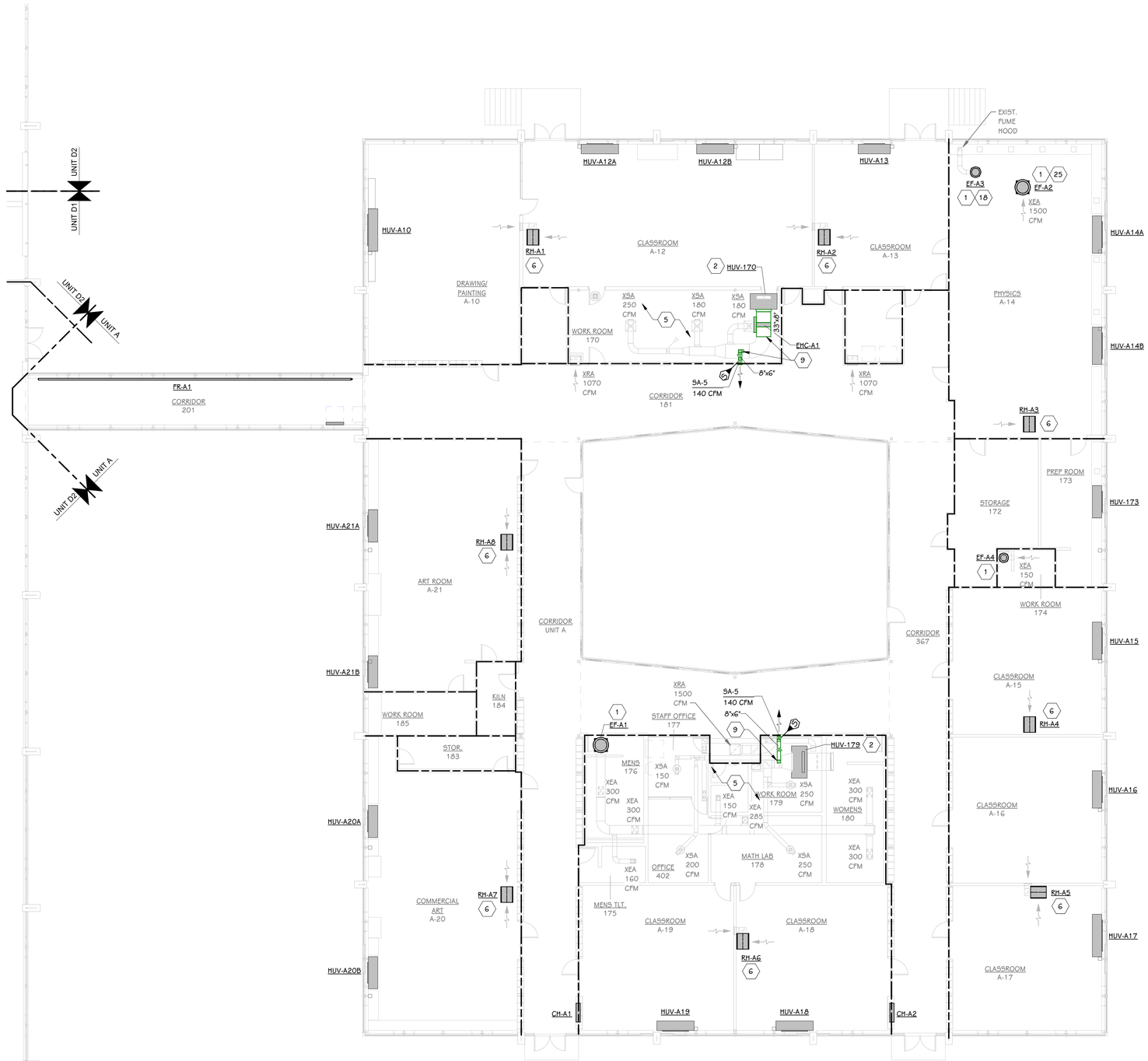

LEVEL 1 SHEET METAL PLAN - UNIT A

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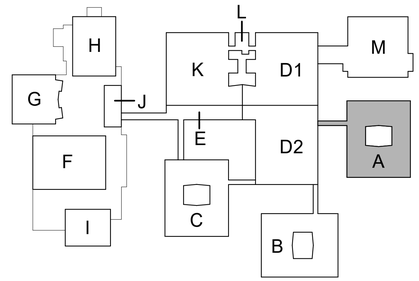

KEY PLAN
SCALE: NO SCALE

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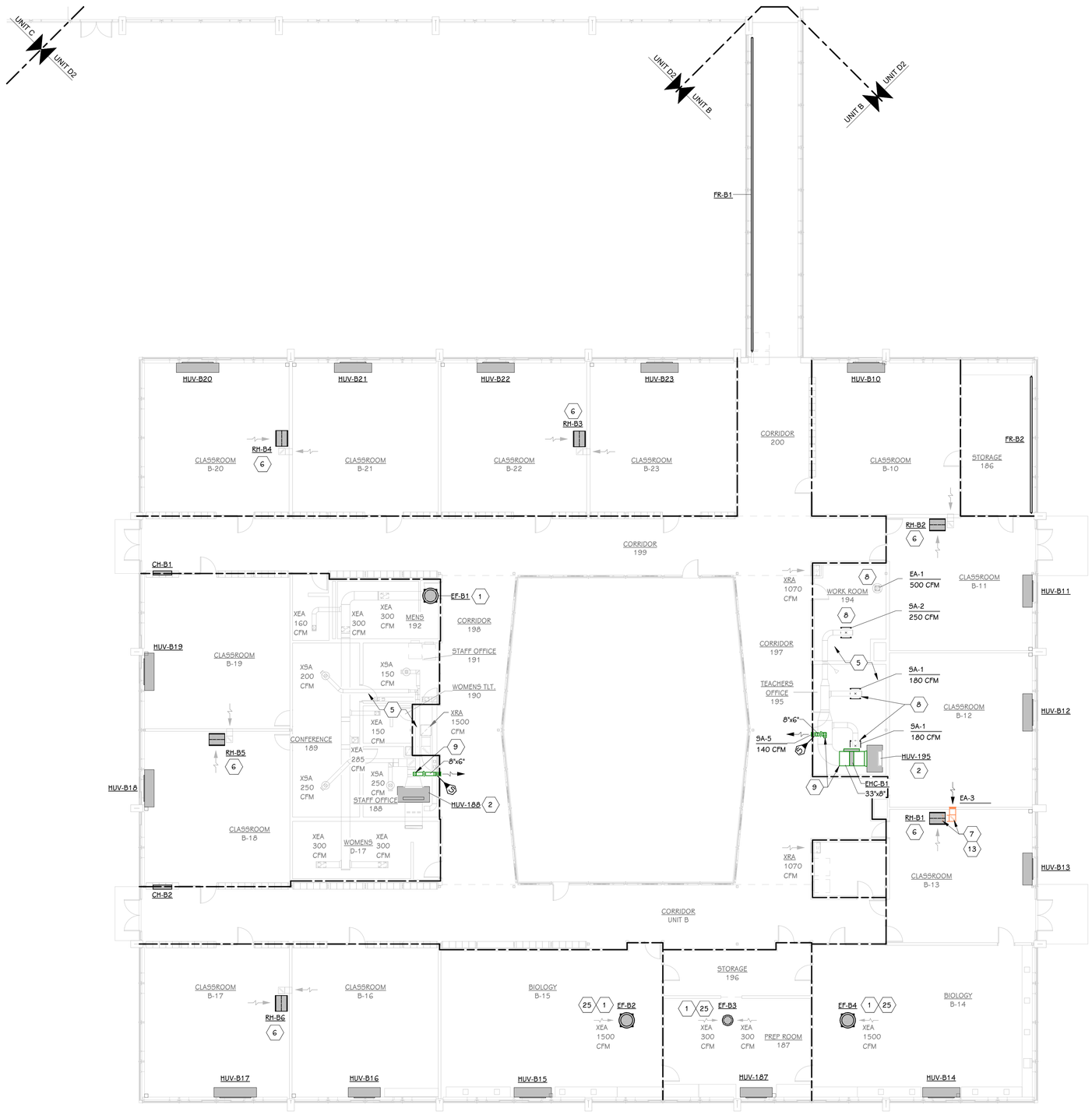

LEVEL 1 SHEET METAL PLAN - UNIT B

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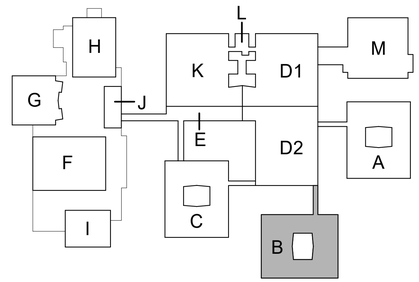
8. CLEAN EXIST. DUCTWORK AND INSTALL NEW GRILLE OR DIFFUSER. MODIFY EXISTING DUCTWORK AS REQUIRED TO RECONNECT. VERIFY IF BALANCE DAMPER EXIST AND IS OPERATIONAL AND INSTALL NEW ONE IF REQUIRED.
9. CONNECT TO EXISTING DUCTWORK.
10. REFRIGERANT PIPING FROM BELOW TO ACCU. REFER TO PIPING PORTAL / CURB DETAIL ON SHEET M505. REFRIGERANT PIPING SIZED PER MANUFACTURE'S RECOMMENDATIONS.
11. INSTALL SALVAGED BI-POLAR IONIZATION INTO AIR HANDLING UNIT.
13. PAINT TO MATCH EXISTING.
16. INSTALL BALANCE DAMPER IN THE VERTICAL.
17. ROUTE BRANCH DUCTWORK THRU BAR JOIST (TYP.)
18. REFER TO ROOF EXHAUSTER DETAIL - UPBLAST (WITH WINDBAND) DETAIL ON SHEET M506.
19. REFER TO VERTICAL UNIT VENTILATOR DETAIL WITH 15" REAR EXTENSION ON SHEET M507.
20. INSTALL DUCT LINER ON RETURN AIR PLENUM FROM RTU TO RETURN AIR GRILLE.
21. SUPPLY DUCTWORK INSTALLED BELOW CEILING AS HIGH AS POSSIBLE.
22. REFER TO ENLARGED MECHANICAL PLAN ON SHEET M302 FOR CONTINUATION.
23. CONNECT TO EXISTING DUCTWORK. TRANSITION AS REQUIRED TO CONNECT.
24. INSTALL RTU ON EXISTING ROOF CURB. MODIFY EXISTING GAS PIPING ON ROOF AS REQUIRED TO CONNECT.
25. EXTEND GRILLE OUT TO FACE OF EXIST. EXHAUST HOOD.
26. ¾" CONDENSATE DRAIN FROM CONDENSATE LIFT PUMP IN TUNNEL. SPILL CONDENSATE ON ROOF.
27. INSTALL 20"x80" TRANSFER AIR GRILLES ON BOTH SIDES OF WALL TO COVER UP EXISTING OPENING.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 SHEET METAL PLAN - UNIT B

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 101B

21-807.00

LEVEL 1 SHEET METAL PLAN - UNIT C

3/32" = 1'-0"

OMIT ALL WORK ON THIS SHEET.

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.

KEYED NOTES - SHEET METAL

1 INSTALL EXHAUST FAN ON EXISTING ROOF CURB. INSTALL CURB ADAPTER IF REQUIRED. CLEAN EXISTING EXHAUST DUCTWORK. PROVIDE PHOTO DOCUMENTATION.

2 INSTALL CEILING MOUNTED UNIT VENTILATOR. REWORK EXISTING SUPPLY, RETURN, AND OAI DUCTWORK AS REQUIRED TO RECONNECT. CLEAN EXISTING DUCTWORK. PROVIDE PHOTO DOCUMENTATION.

3 INSTALL AIR HANDLING UNIT. REWORK EXIST. DUCTWORK AS REQUIRED TO RECONNECT. CLEAN EXISTING DUCTWORK. PROVIDE PHOTO DOCUMENTATION

4 INSTALL MAKE-UP AIR UNIT AND EXHAUST FAN TO SERVE THE PAINT BOOTH. MODIFY EXISTING DUCTWORK AS REQUIRED TO RECONNECT.

5 CLEAN EXISTING SUPPLY, RETURN, AND EXHAUST DUCTWORK IN THIS AREA. PROVIDE PHOTO DOCUMENTATION.

6 INSTALL RELIEF HOOD ON EXIST. ROOF CURB. CLEAN EXISTING RELIEF AIR DUCTWORK. PROVIDE PHOTO DOCUMENTATION.

7 INSTALL 14"x14" RELIEF AIR DUCT AND GRILLE. CONNECT TO EXISTING PLENUM.

8 CLEAN EXIST. DUCTWORK. INSTALL NEW GRILLE OR DIFFUSER. MODIFY EXISTING DUCTWORK AS REQUIRED TO RECONNECT. VERIFY IF BALANCE DAMPER EXIST AND IS OPERATIONAL AND INSTALL NEW ONE IF REQUIRED.

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11 INSTALL SALVAGED BI-POLAR IONIZATION INTO AIR HANDLING UNIT.

13 PAINT TO MATCH EXISTING.

16 INSTALL BALANCE DAMPER IN THE VERTICAL.

17 ROUTE BRANCH DUCTWORK THRU BAR JOIST (TYP.)

18 REFER TO ROOF EXHAUSTER DETAIL - UPBLAST (WITH WINDBAND) DETAIL ON SHEET M506.

19 REFER TO VERTICAL UNIT VENTILATOR DETAIL WITH 15" REAR EXTENSION ON SHEET M507.

20 INSTALL DUCT LINER ON RETURN AIR PLENUM FROM RTU TO RETURN AIR GRILLE.

21 SUPPLY DUCTWORK INSTALLED BELOW CEILING AS HIGH AS POSSIBLE.

22 REFER TO ENLARGED MECHANICAL PLAN ON SHEET M302 FOR CONTINUATION.

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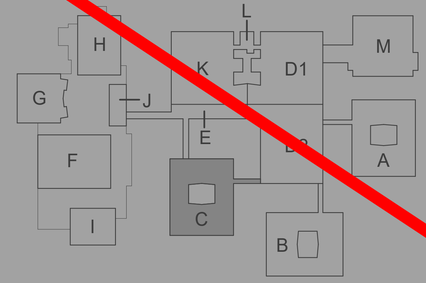
LEVEL 1 - KEY PLAN



KEY PLAN

SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

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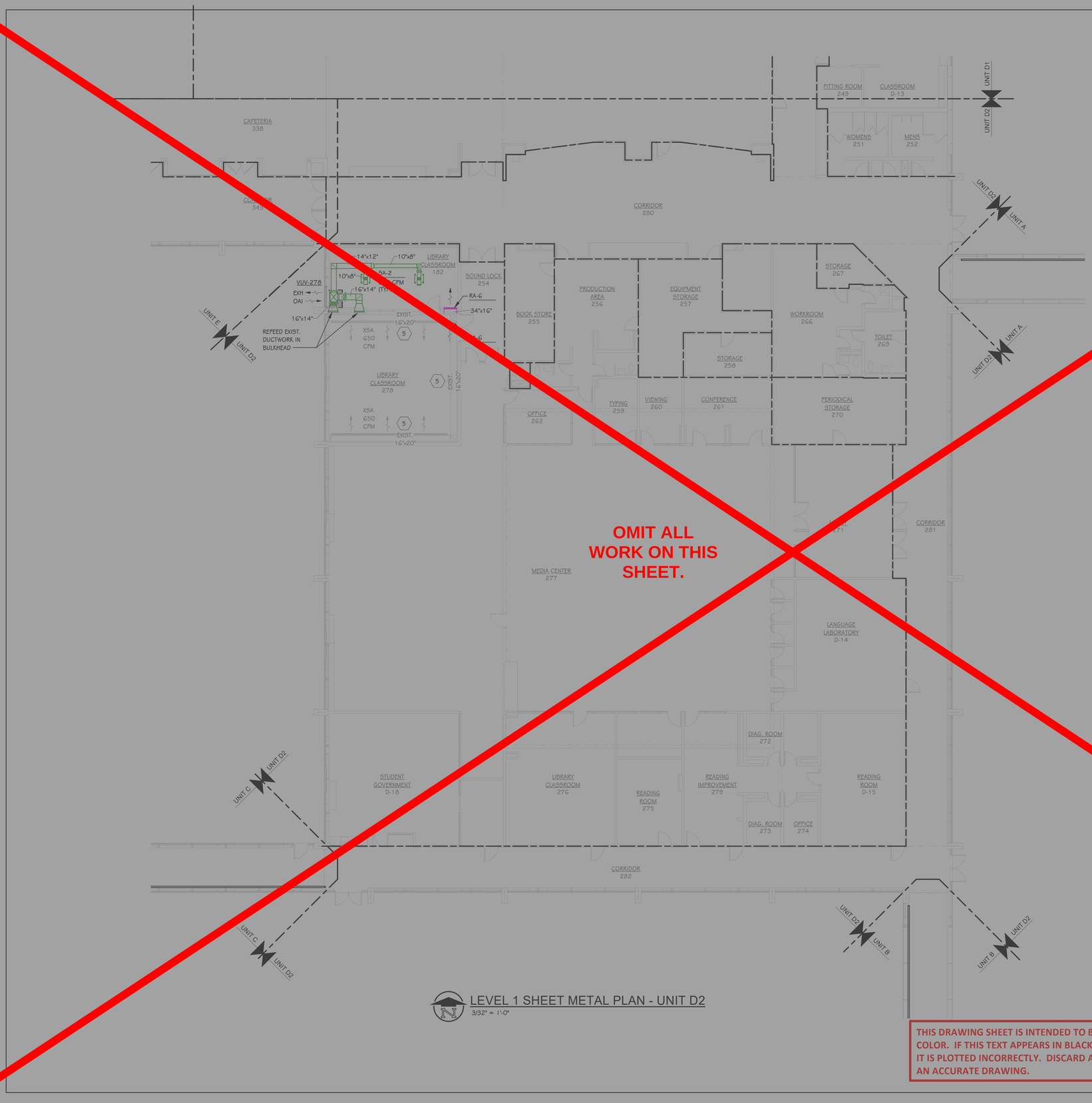
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 SHEET METAL PLAN - UNIT C

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 101C
21-807.00



OMIT ALL WORK ON THIS SHEET.

LEVEL 1 SHEET METAL PLAN - UNIT D2
3/32" = 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.

KEYED NOTES - SHEET METAL

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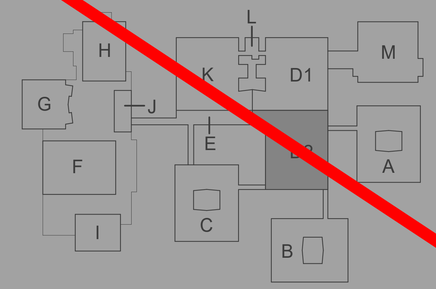
LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

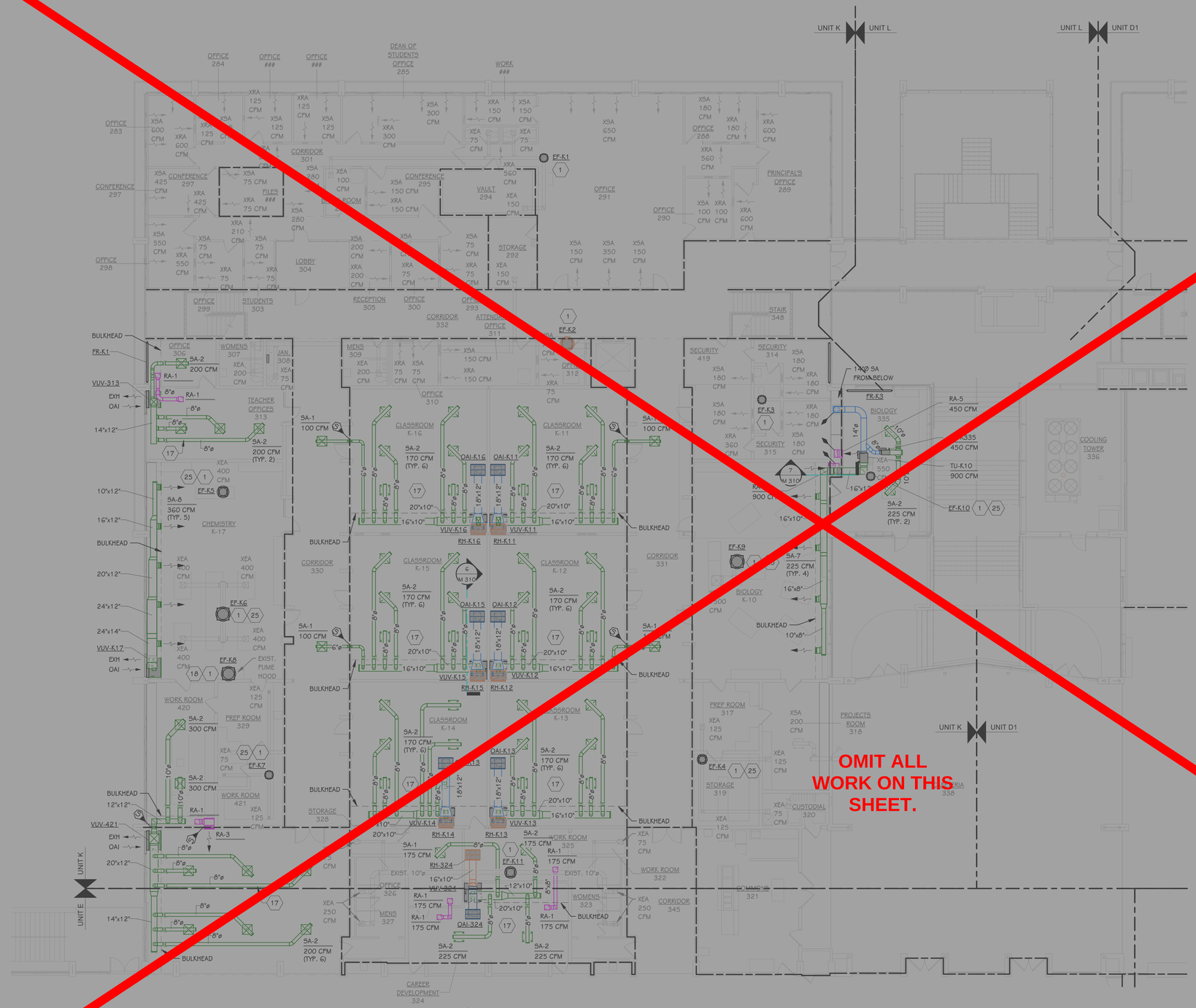
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 SHEET METAL PLAN - UNIT D2

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 101D2
21-807.00



LEVEL 1 SHEET METAL PLAN - UNIT K
3/32" = 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.

KEYED NOTES - SHEET METAL

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13 PAINT TO MATCH EXISTING.

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23 CONNECT TO EXISTING DUCTWORK. TRANSITION AS REQUIRED TO CONNECT.

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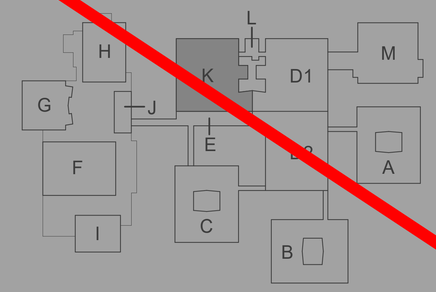
LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

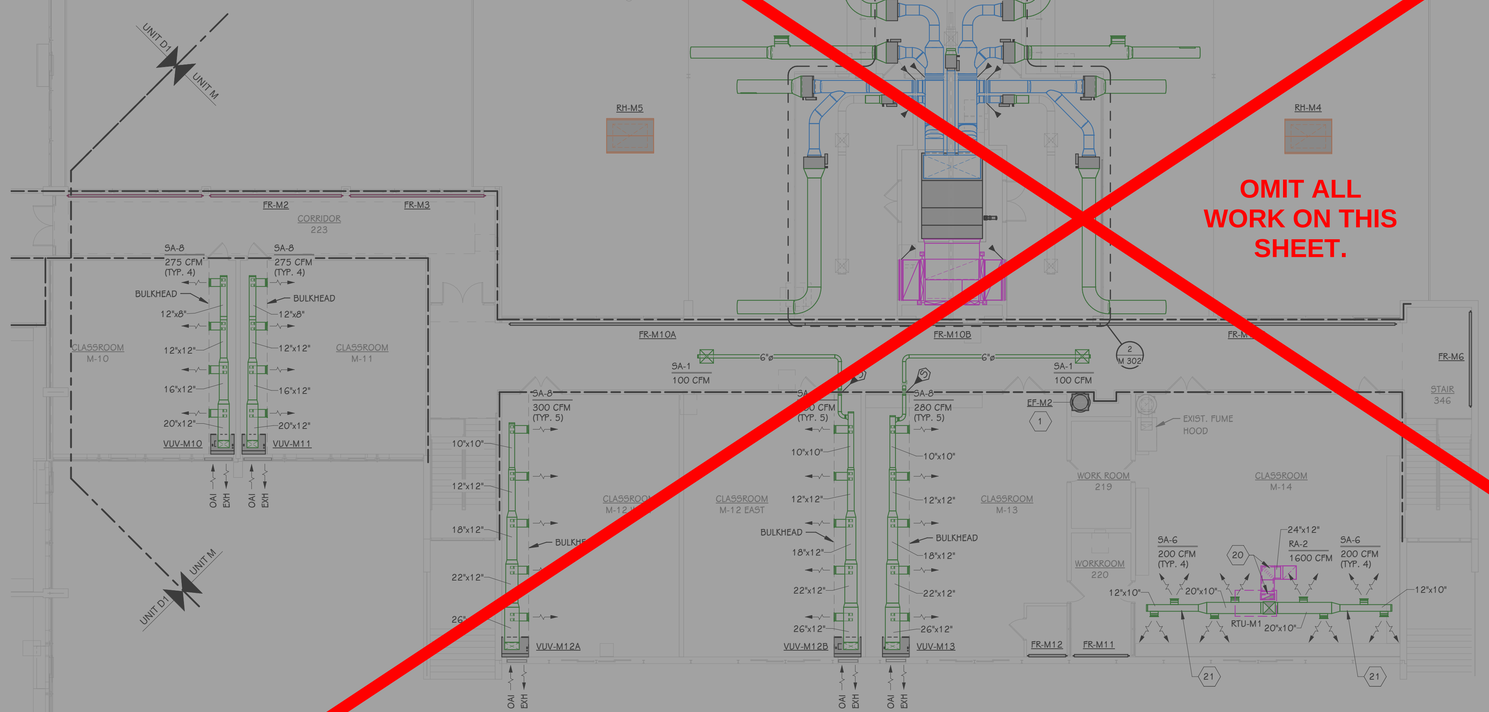
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 SHEET METAL PLAN - UNIT K

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 101K
21-807.00



LEVEL 1 SHEET METAL PLAN - UNIT M

3/32" = 1'-0"

OMIT ALL WORK ON THIS SHEET.

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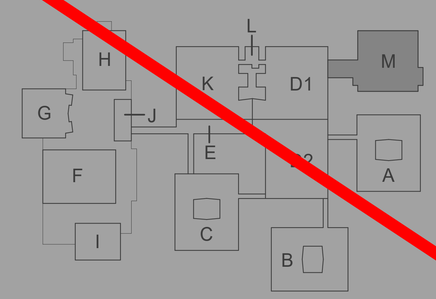
27 INSTALL 20"x80" TRANSFER AIR GRILLES ON BOTH SIDES OF WALL TO COVER UP EXISTING OPENING.

LEVEL 1 - KEY PLAN



KEY PLAN

SCALE: NO SCALE

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PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

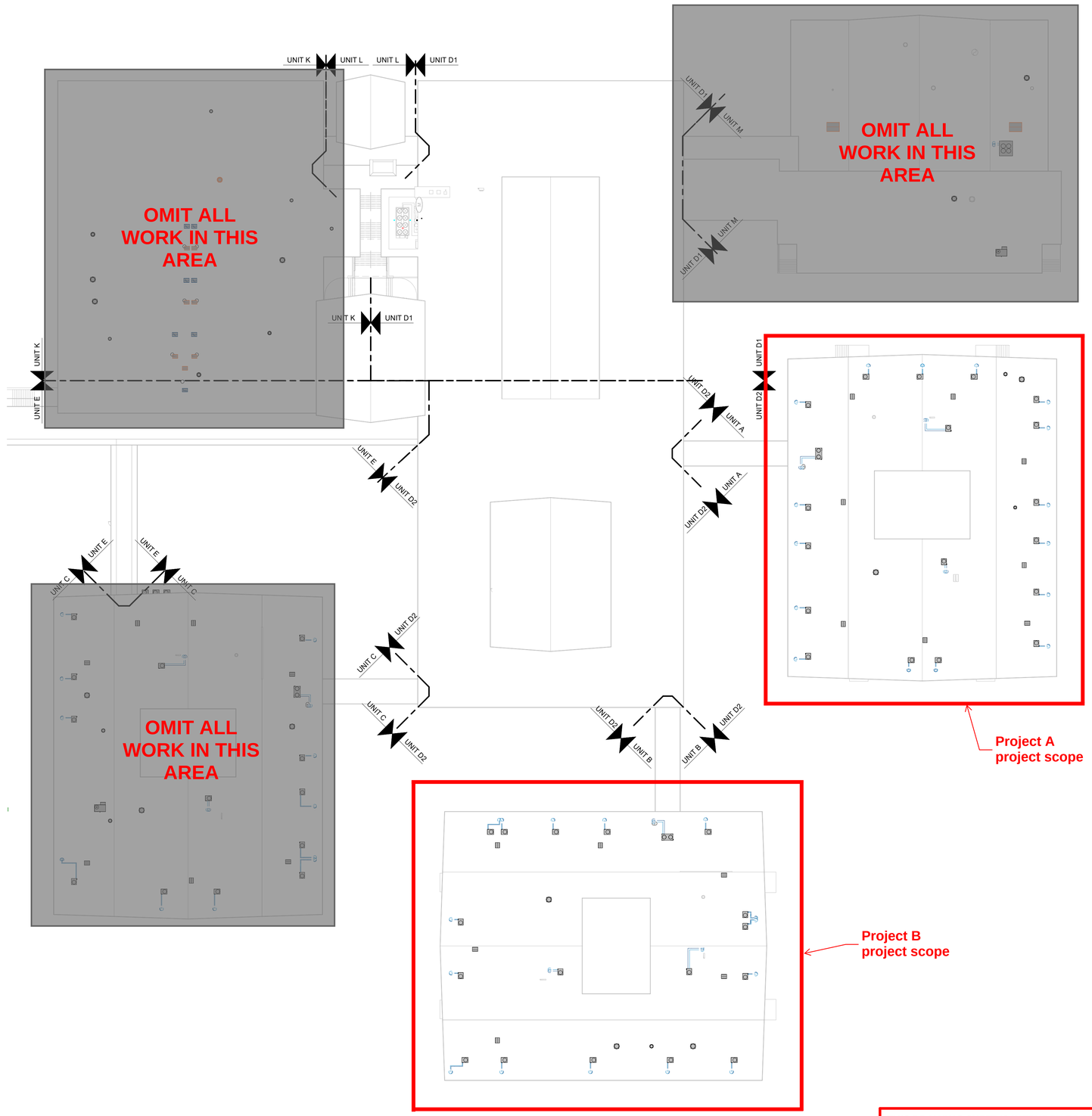
OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 SHEET METAL PLAN - UNIT M

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 101M

21-807.00



ROOF MECHANICAL PLAN - OVERALL
1" = 30'-0"

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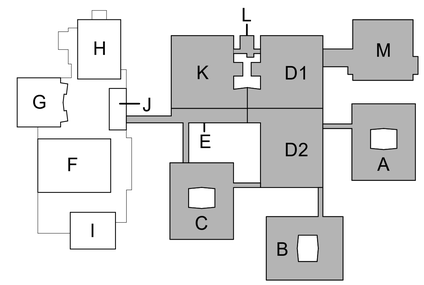
LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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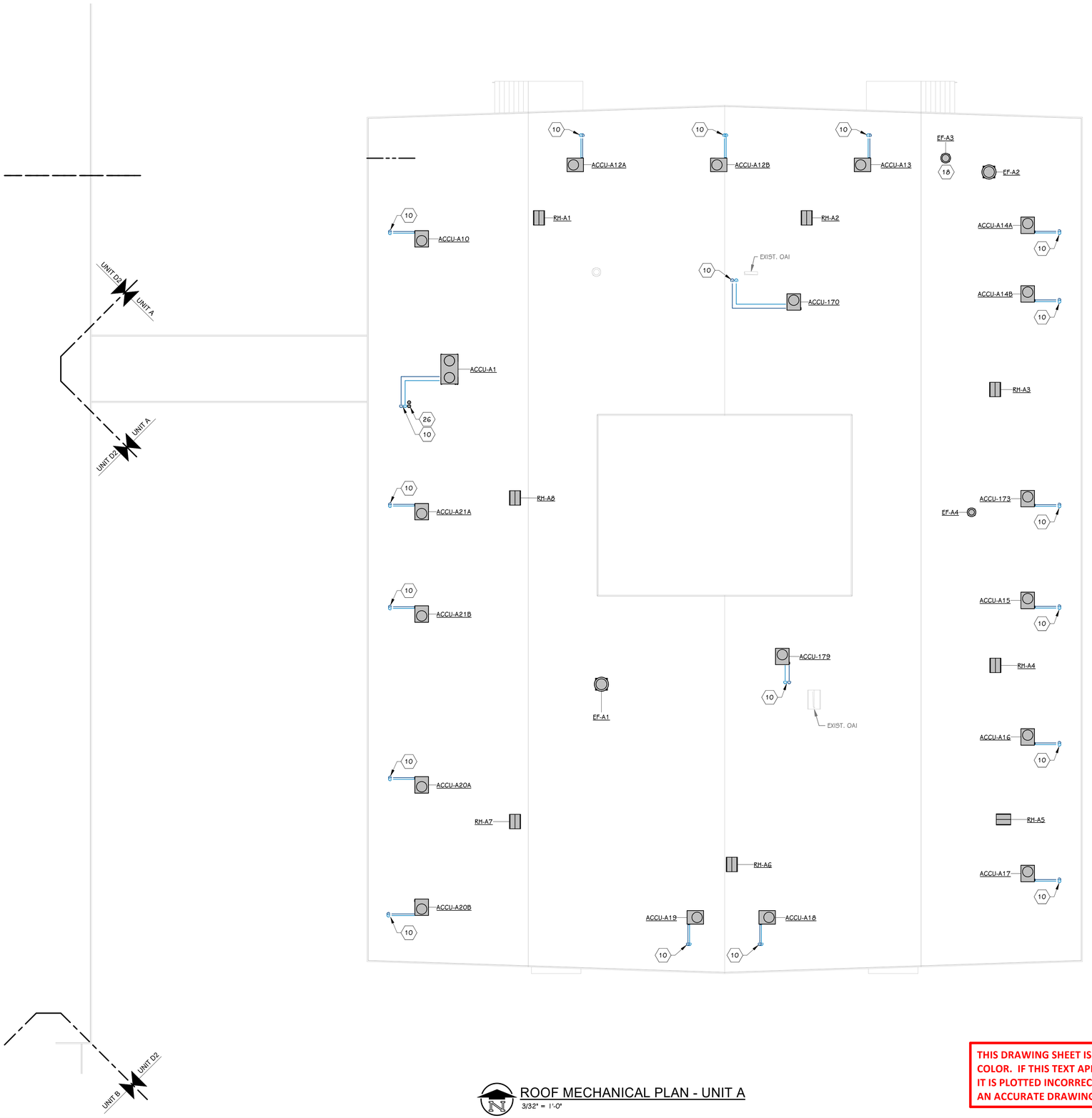
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ROOF MECHANICAL PLAN - OVERALL

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M150
21-807.00



ROOF MECHANICAL PLAN - UNIT A
3/32" = 1'-0"

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3 INSTALL AIR HANDLING UNIT. REWORK EXIST. DUCTWORK AS REQUIRED TO RECONNECT. CLEAN EXISTING DUCTWORK. PROVIDE PHOTO DOCUMENTATION

4 INSTALL MAKE-UP AIR UNIT AND EXHAUST FAN TO SERVE THE PAINT BOOTH. MODIFY EXISTING DUCTWORK AS REQUIRED TO RECONNECT.

5 CLEAN EXISTING SUPPLY, RETURN, AND EXHAUST DUCTWORK IN THIS AREA. PROVIDE PHOTO DOCUMENTATION.

6 INSTALL RELIEF HOOD ON EXIST. ROOF CURB. CLEAN EXISTING RELIEF AIR DUCTWORK. PROVIDE PHOTO DOCUMENTATION.

7 INSTALL 14"x14" RELIEF AIR DUCT AND GRILLE. CONNECT TO EXISTING PLENUM.

8 CLEAN EXIST. DUCTWORK AND INSTALL NEW GRILLE OR DIFFUSER. MODIFY EXISTING DUCTWORK AS REQUIRED TO RECONNECT. VERIFY IF BALANCE DAMPER EXIST AND IS OPERATIONAL AND INSTALL NEW ONE IF REQUIRED.

9 CONNECT TO EXISTING DUCTWORK.

10 REFRIGERANT PIPING FROM BELOW TO ACCU. REFER TO PIPING PORTAL / CURB DETAIL ON SHEET M505. REFRIGERANT PIPING SIZED PER MANUFACTURE'S RECOMMENDATIONS.

11 INSTALL SALVAGED BI-POLAR IONIZATION INTO AIR HANDLING UNIT.

13 PAINT TO MATCH EXISTING.

16 INSTALL BALANCE DAMPER IN THE VERTICAL.

17 ROUTE BRANCH DUCTWORK THRU BAR JOIST (TYP.)

18 REFER TO ROOF EXHAUSTER DETAIL - UPBLAST (WITH WINDBAND) DETAIL ON SHEET M506.

19 REFER TO VERTICAL UNIT VENTILATOR DETAIL WITH 15" REAR EXTENSION ON SHEET M507.

20 INSTALL DUCT LINER ON RETURN AIR PLENUM FROM RTU TO RETURN AIR GRILLE.

21 SUPPLY DUCTWORK INSTALLED BELOW CEILING AS HIGH AS POSSIBLE.

22 REFER TO ENLARGED MECHANICAL PLAN ON SHEET M302 FOR CONTINUATION.

23 CONNECT TO EXISTING DUCTWORK. TRANSITION AS REQUIRED TO CONNECT.

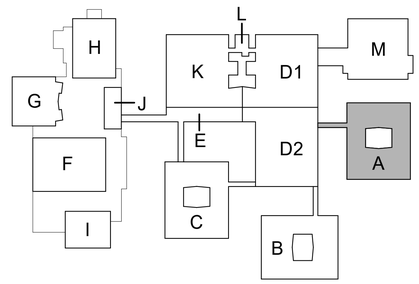
24 INSTALL RTU ON EXISTING ROOF CURB. MODIFY EXISTING GAS PIPING ON ROOF AS REQUIRED TO CONNECT.

25 EXTEND GRILLE OUT TO FACE OF EXIST. EXHAUST HOOD.

26 ¾" CONDENSATE DRAIN FROM CONDENSATE LIFT PUMP IN TUNNEL. SPILL CONDENSATE ON ROOF.

27 INSTALL 20"x80" TRANSFER AIR GRILLES ON BOTH SIDES OF WALL TO COVER UP EXISTING OPENING.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

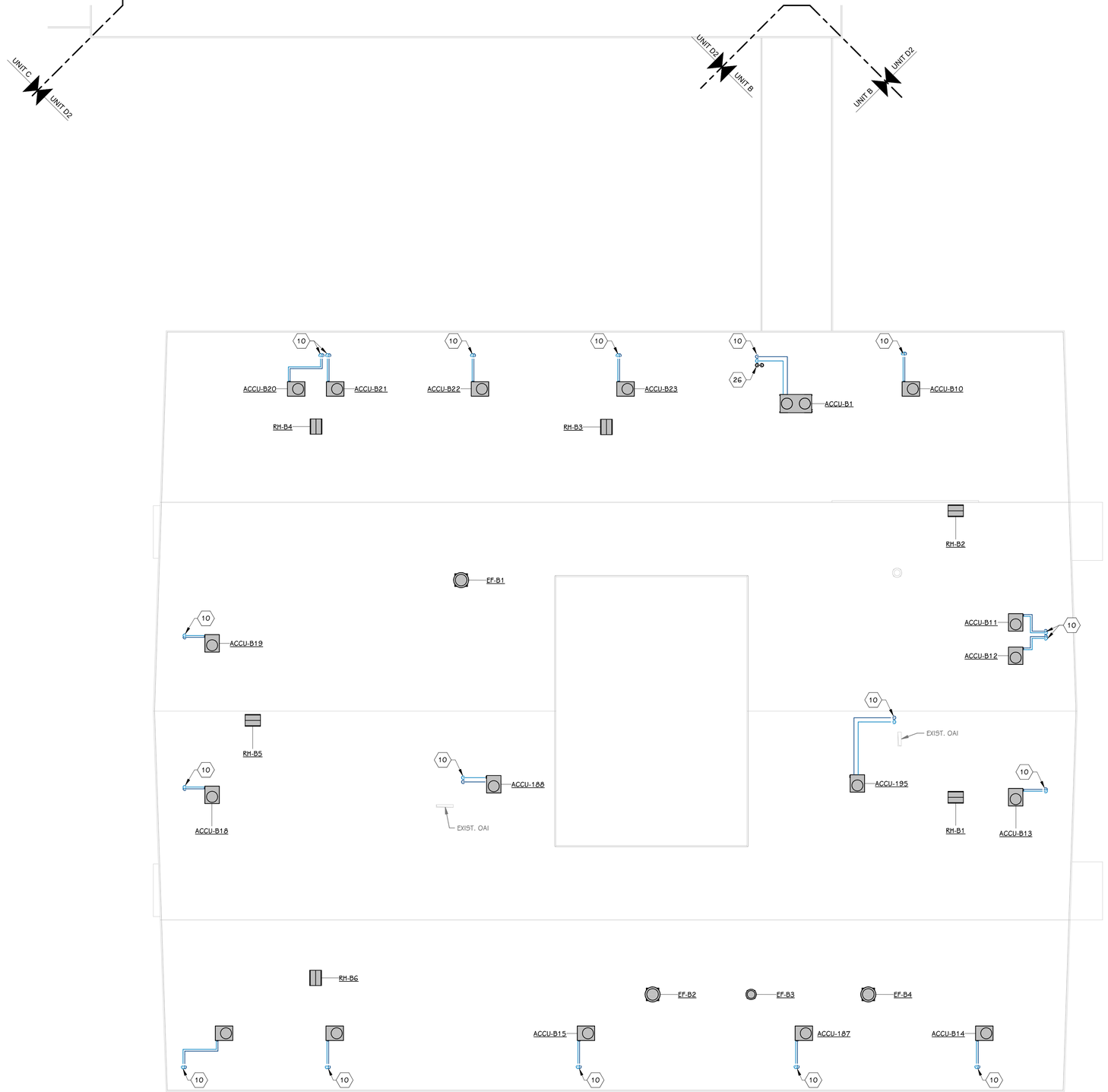
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ROOF MECHANICAL PLAN - UNIT A

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 150A
21-807.00



ROOF MECHANICAL PLAN - UNIT B

3/32" = 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.

KEYED NOTES - SHEET METAL

1 INSTALL EXHAUST FAN ON EXISTING ROOF CURB. INSTALL CURB ADAPTER IF REQUIRED. CLEAN EXISTING EXHAUST DUCTWORK. PROVIDE PHOTO DOCUMENTATION.

2 INSTALL CEILING MOUNTED UNIT VENTILATOR. REWORK EXISTING SUPPLY, RETURN, AND OAI DUCTWORK AS REQUIRED TO RECONNECT. CLEAN EXISTING DUCTWORK. PROVIDE PHOTO DOCUMENTATION.

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7 INSTALL 14"x14" RELIEF AIR DUCT AND GRILLE. CONNECT TO EXISTING PLENUM.

8 CLEAN EXIST. DUCTWORK AND INSTALL NEW GRILLE OR DIFFUSER. MODIFY EXISTING DUCTWORK AS REQUIRED TO RECONNECT. VERIFY IF BALANCE DAMPER EXIST AND IS OPERATIONAL AND INSTALL NEW ONE IF REQUIRED.

9 CONNECT TO EXISTING DUCTWORK.

10 REFRIGERANT PIPING FROM BELOW TO ACCU. REFER TO PIPING PORTAL / CURB DETAIL ON SHEET M505. REFRIGERANT PIPING SIZED PER MANUFACTURE'S RECOMMENDATIONS.

11 INSTALL SALVAGED BI-POLAR IONIZATION INTO AIR HANDLING UNIT.

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16 INSTALL BALANCE DAMPER IN THE VERTICAL.

17 ROUTE BRANCH DUCTWORK THRU BAR JOIST (TYP.)

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19 REFER TO VERTICAL UNIT VENTILATOR DETAIL WITH 15" REAR EXTENSION ON SHEET M507.

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23 CONNECT TO EXISTING DUCTWORK. TRANSITION AS REQUIRED TO CONNECT.

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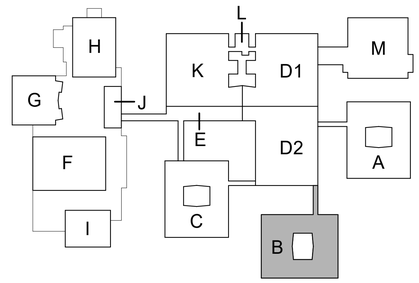
LEVEL 1 - KEY PLAN



KEY PLAN

SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ROOF MECHANICAL PLAN - UNIT B

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M150B
21-807.00

ROOF MECHANICAL PLAN - UNIT C
3/32" = 1'-0"

OMIT ALL WORK ON THIS SHEET.

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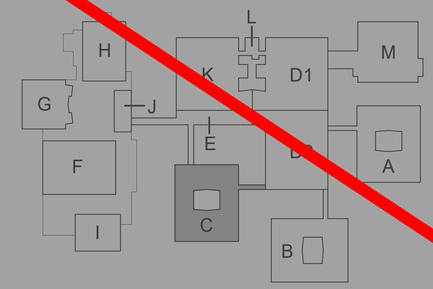

KEY PLAN
SCALE: NO SCALE

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LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ROOF MECHANICAL PLAN - UNIT C

DATE
NOVEMBER 22, 2022

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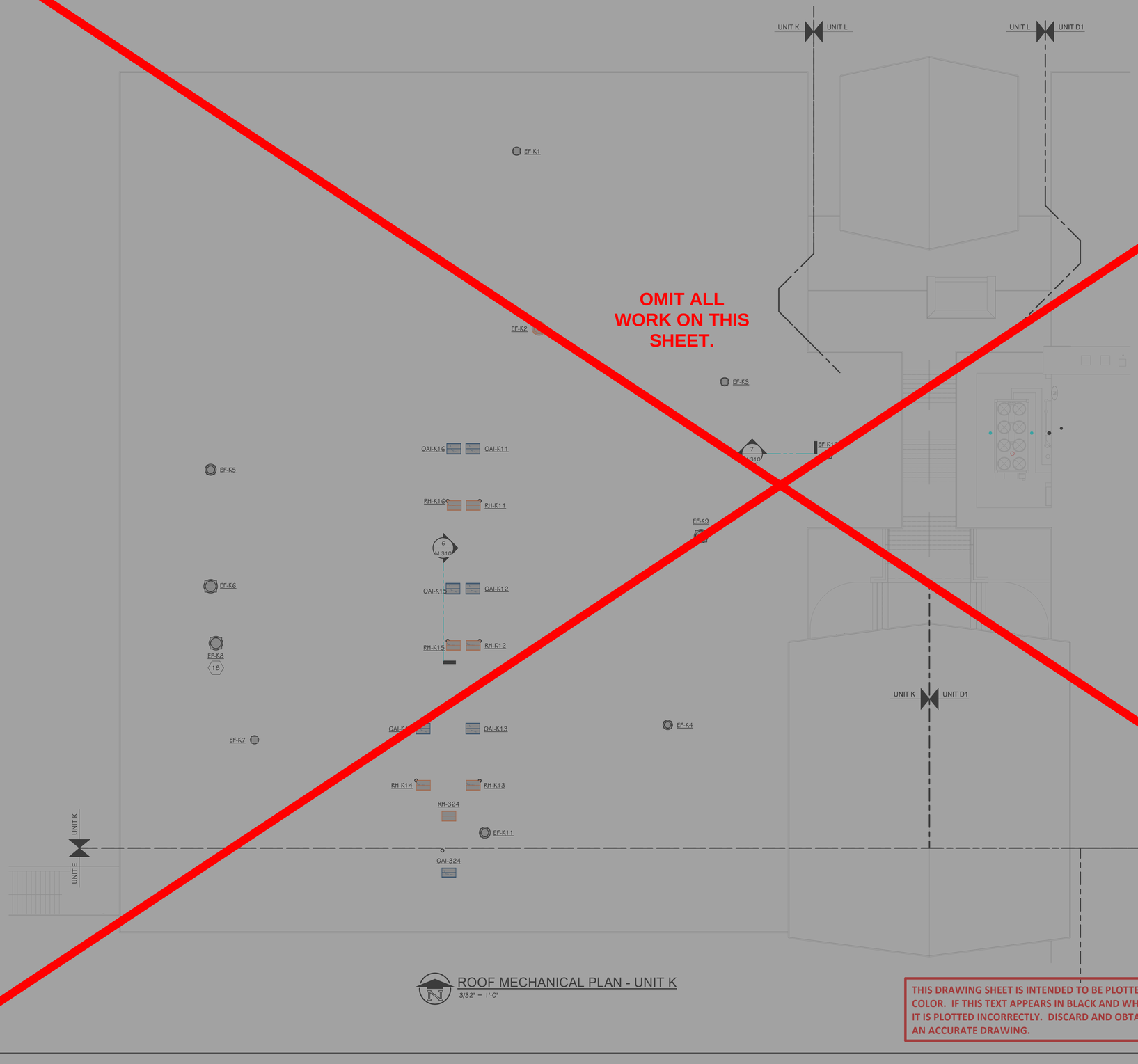
M150C
21-807.00



OMIT ALL WORK ON THIS SHEET.

ROOF MECHANICAL PLAN - UNIT K

3/32" = 1'-0"

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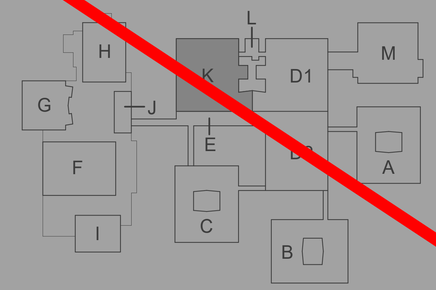

KEY PLAN
SCALE: NO SCALE

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ISSUED FOR DATE

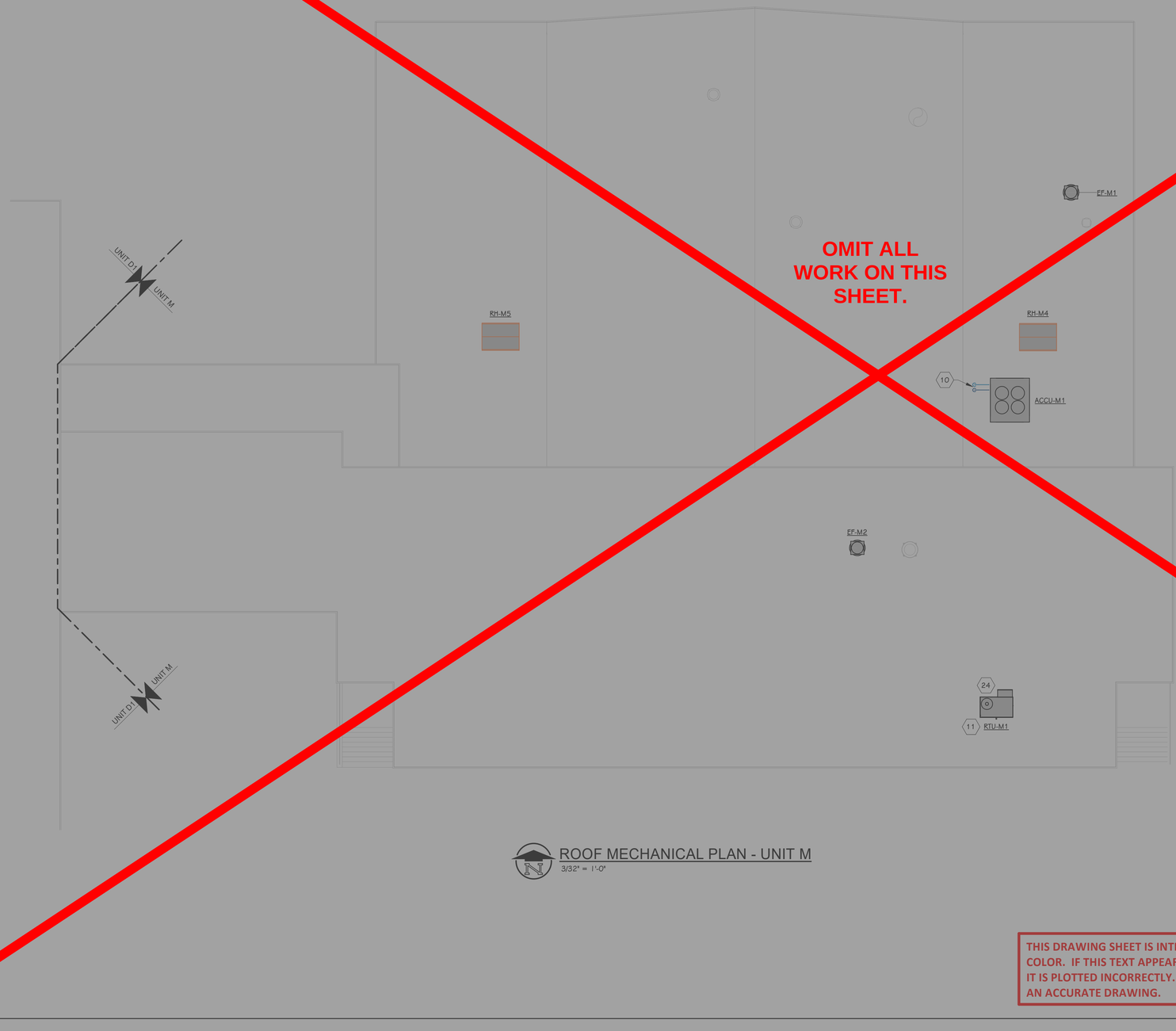
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ROOF MECHANICAL PLAN - UNIT K

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M150K
21-807.00



ROOF MECHANICAL PLAN - UNIT M
3/32" = 1'-0"

OMIT ALL WORK ON THIS SHEET.

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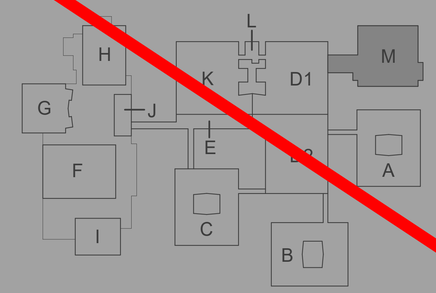
LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ROOF MECHANICAL PLAN - UNIT M

DATE
NOVEMBER 22, 2022

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M150M
21-807.00

OVERALL LOWER LEVEL HVAC PIPING PLAN
1" = 30'-0"

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OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
OVERALL LOWER LEVEL HVAC PIPING PLAN

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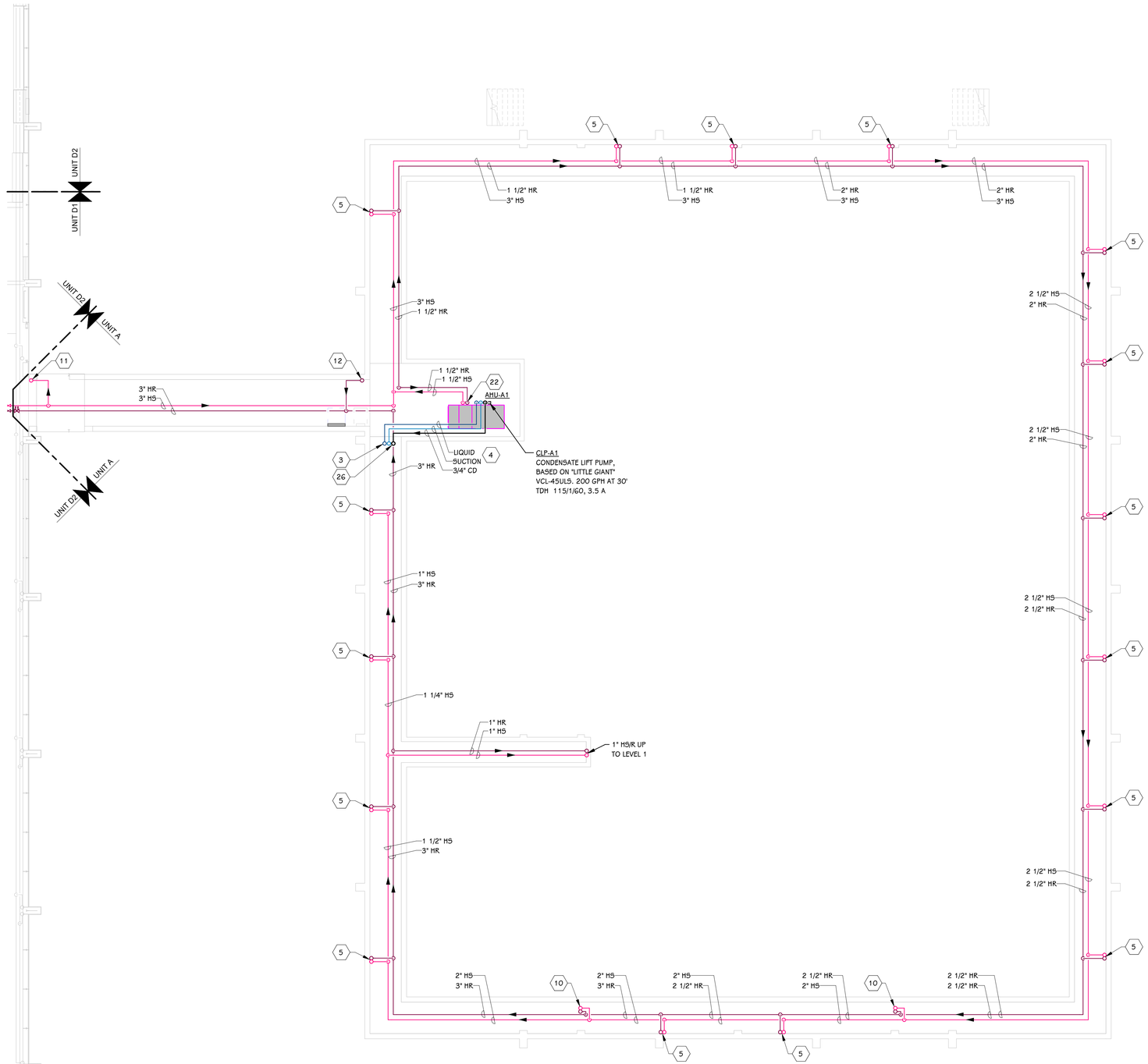
M 200
21-807.00



LOWER LEVEL HVAC PIPING PLAN - UNIT A

3/32" = 1'-0"

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KEYED NOTES - HVAC PIPING

1 REFRIGERANT PIPING UP TO ROOF. REFRIGERANT PIPING TO BE SIZED PER MANUFACTURES RECOMMENDATIONS.

2 REFRIGERANT PIPING AND ¾" CONDENSATE DRAIN FROM TUNNEL UP TO ROOF. COVER PIPING WITH METAL PIPE ENCLOSURE.

3 REFRIGERANT PIPING UP TO FIRST FLOOR.

4 ROUTE REFRIGERANT PIPING UP THRU EXIST. PIPE ENCLOSURE TO ACCU ON ROOF. REFRIGERANT PIPING TO BE SIZED PER MANUFACTURES RECOMMENDATIONS.

5 1" H5 & 1" HR UP TO UNIT VENTILATOR ABOVE.

6 ROUTE REFRIGERANT PIPING THRU TUNNEL TO UNIT VENTILATOR. REFRIGERANT PIPING TO BE SIZED PER MANUFACTURES RECOMMENDATIONS.

7 REMOVE AND RE-INSTALL EXISTING HORIZONTAL PIPE ENCLOSURE AS REQUIRED TO INSTALL NEW REFRIGERANT PIPING.

8 REFER TO SHEET M-200M FOR CONTINUATION.

9 REFER TO ENLARGED MECHANICAL PLAN ON SHEET M302 FOR CONTINUATION.

10

11 ¾" H5 UP TO FIN TUBE RADIATION ABOVE.

12 ¾" HR FROM FIN TUBE RADIATION ABOVE.

13 HEATING SUPPLY AND RETURN PIPING DN TO CABINET HEATER. COVER EXPOSED PIPING WITH METAL PIPE ENCLOSURE.

14 ROUTE REFRIGERANT PIPING FROM DX COOLING COIL IN AIR HANDLING UNIT TO ACCU LOCATED ON ROOF. LIQUID/SUCTION LINE SIZES AND FINAL PIPE ROUTINGS & LAYOUT TO BE COORDINATED WITH MANUFACTURER'S RECOMMENDATIONS.

15 INSTALL FACTORY SUPPLIED CONDENSATE PUMP IN UNIT VENTILATOR AND ROUTE ¾" CONDENSATE PIPING UP TO ROOF.

16 INSTALL FACTORY SUPPLIED CONDENSATE PUMP IN UNIT VENTILATOR AND ROUTE ¾" CONDENSATE UP TO AREA WELL AND TERMINATE WITH ELBOW DOWN.

17 ROUTE REFRIGERANT PIPING UP THRU NEW PIPE ENCLOSURE TO ACCU ON ROOF. REFRIGERANT PIPING TO BE SIZED PER MANUFACTURES RECOMMENDATIONS.

18 PROVIDE FIN TUBE ENCLOSURE TO CREATE A CONTINUOUS LOOK.

19 COVER EXPOSED PIPING WITH METAL PIPE ENCLOSURE.

20 ROUTE 2" CONDENSATE DOWN TO EXISTING SURGE TANK MAKING NEW CONNECTIONS ON TOP OF TANK WITH SHUT-OFF VALVES. (TYP. 2 PLACES)

21 INSTALL RTU ON EXISTING ROOF CURB. REWORK EXISTING GAS PIPING ON ROOF AS REQUIRED TO CONNECT. INSTALL NEW SHUT-OFF VALVE AND DIRT LEG.

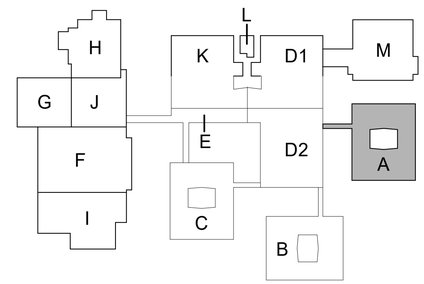
22 HEATING SUPPLY AND RETURN PIPING DOWN TO AHU WITH 3-WAY CONTROL VALVE.

25 INSTALL A (1)ONE HOUR WALL TIMER SWITCH TO CONTROL EXHAUST FAN.

26 ROUTE ¾" CONDENSATE DRAIN FROM CONDENSATE LIFT PUMP UP TO ROOF.

27 1" H5/R PIPING FROM LOWER LEVEL TO UNIT VENTILATOR.

LOWER LEVEL - KEY PLAN



KEY PLAN

SCALE: NO SCALE

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PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

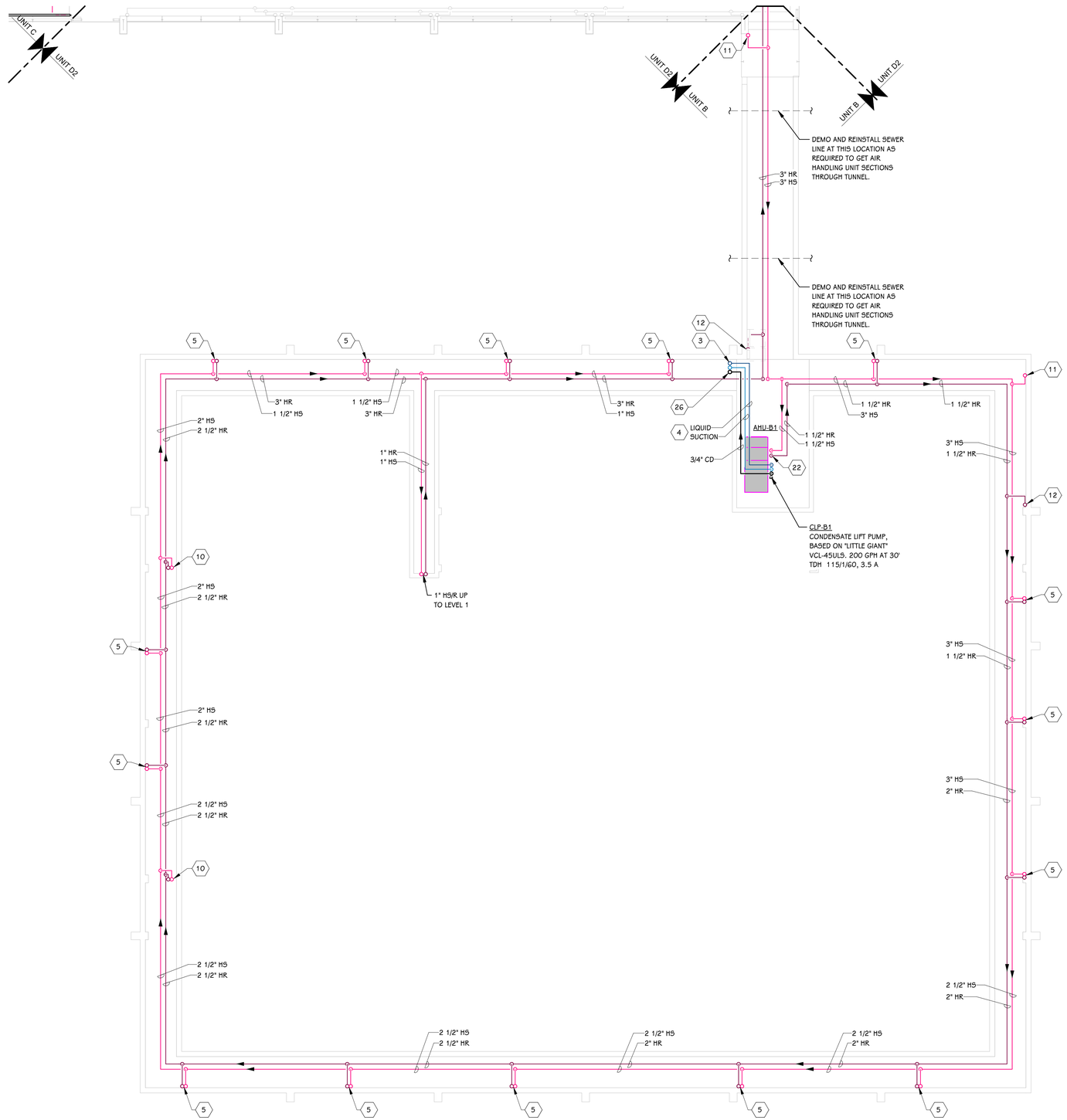
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL HVAC PIPING PLAN - UNIT A

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 200A

21-807.00



LOWER LEVEL HVAC PIPING PLAN - UNIT B

3/32" = 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.

KEYED NOTES - HVAC PIPING

1 REFRIGERANT PIPING UP TO ROOF. REFRIGERANT PIPING TO BE SIZED PER MANUFACTURES RECOMMENDATIONS.

2 REFRIGERANT PIPING AND ¾" CONDENSATE DRAIN FROM TUNNEL UP TO ROOF. COVER PIPING WITH METAL PIPE ENCLOSURE.

3 REFRIGERANT PIPING UP TO FIRST FLOOR.

4 ROUTE REFRIGERANT PIPING UP THRU EXIST. PIPE ENCLOSURE TO ACCU ON ROOF. REFRIGERANT PIPING TO BE SIZED PER MANUFACTURES RECOMMENDATIONS.

5 1" HS & 1" HR UP TO UNIT VENTILATOR ABOVE.

6 ROUTE REFRIGERANT PIPING THRU TUNNEL TO UNIT VENTILATOR. REFRIGERANT PIPING TO BE SIZED PER MANUFACTURES RECOMMENDATIONS.

7 REMOVE AND RE-INSTALL EXISTING HORIZONTAL PIPE ENCLOSURE AS REQUIRED TO INSTALL NEW REFRIGERANT PIPING.

8 REFER TO SHEET M-200M FOR CONTINUATION.

9 REFER TO ENLARGED MECHANICAL PLAN ON SHEET M302 FOR CONTINUATION.

10

11 ¾" HS UP TO FIN TUBE RADIATION ABOVE.

12 ¾" HR FROM FIN TUBE RADIATION ABOVE.

13 HEATING SUPPLY AND RETURN PIPING DN TO CABINET HEATER. COVER EXPOSED PIPING WITH METAL PIPE ENCLOSURE.

14 ROUTE REFRIGERANT PIPING FROM DX COOLING COIL IN AIR HANDLING UNIT TO ACCU LOCATED ON ROOF. LIQUID/SUCTION LINE SIZES AND FINAL PIPE ROUTINGS & LAYOUT TO BE COORDINATED WITH MANUFACTURER'S RECOMMENDATIONS.

15 INSTALL FACTORY SUPPLIED CONDENSATE PUMP IN UNIT VENTILATOR AND ROUTE ¾" CONDENSATE PIPING UP TO ROOF.

16 INSTALL FACTORY SUPPLIED CONDENSATE PUMP IN UNIT VENTILATOR AND ROUTE ¾" CONDENSATE UP TO AREA WELL AND TERMINATE WITH ELBOW DOWN.

17 ROUTE REFRIGERANT PIPING UP THRU NEW PIPE ENCLOSURE TO ACCU ON ROOF. REFRIGERANT PIPING TO BE SIZED PER MANUFACTURES RECOMMENDATIONS.

18 PROVIDE FIN TUBE ENCLOSURE TO CREATE A CONTINUOUS LOOK.

19 COVER EXPOSED PIPING WITH METAL PIPE ENCLOSURE.

20 ROUTE 2" CONDENSATE DOWN TO EXISTING SURGE TANK MAKING NEW CONNECTIONS ON TOP OF TANK WITH SHUT-OFF VALVES. (TYP. 2 PLACES)

21 INSTALL RTU ON EXISTING ROOF CURB. REWORK EXISTING GAS PIPING ON ROOF AS REQUIRED TO CONNECT. INSTALL NEW SHUT-OFF VALVE AND DIRT LEG.

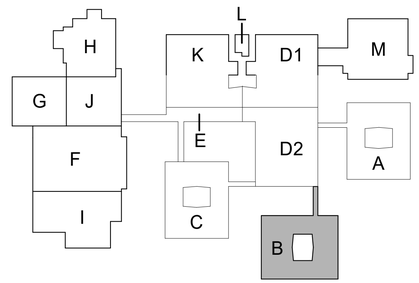
22 HEATING SUPPLY AND RETURN PIPING DOWN TO AHU WITH 3-WAY CONTROL VALVE.

25 INSTALL A (1)ONE HOUR WALL TIMER SWITCH TO CONTROL EXHAUST FAN.

26 ROUTE ¾" CONDENSATE DRAIN FROM CONDENSATE LIFT PUMP UP TO ROOF.

27 1" HS/R PIPING FROM LOWER LEVEL TO UNIT VENTILATOR.

LOWER LEVEL - KEY PLAN



KEY PLAN

SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

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OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL HVAC PIPING PLAN - UNIT B

DATE
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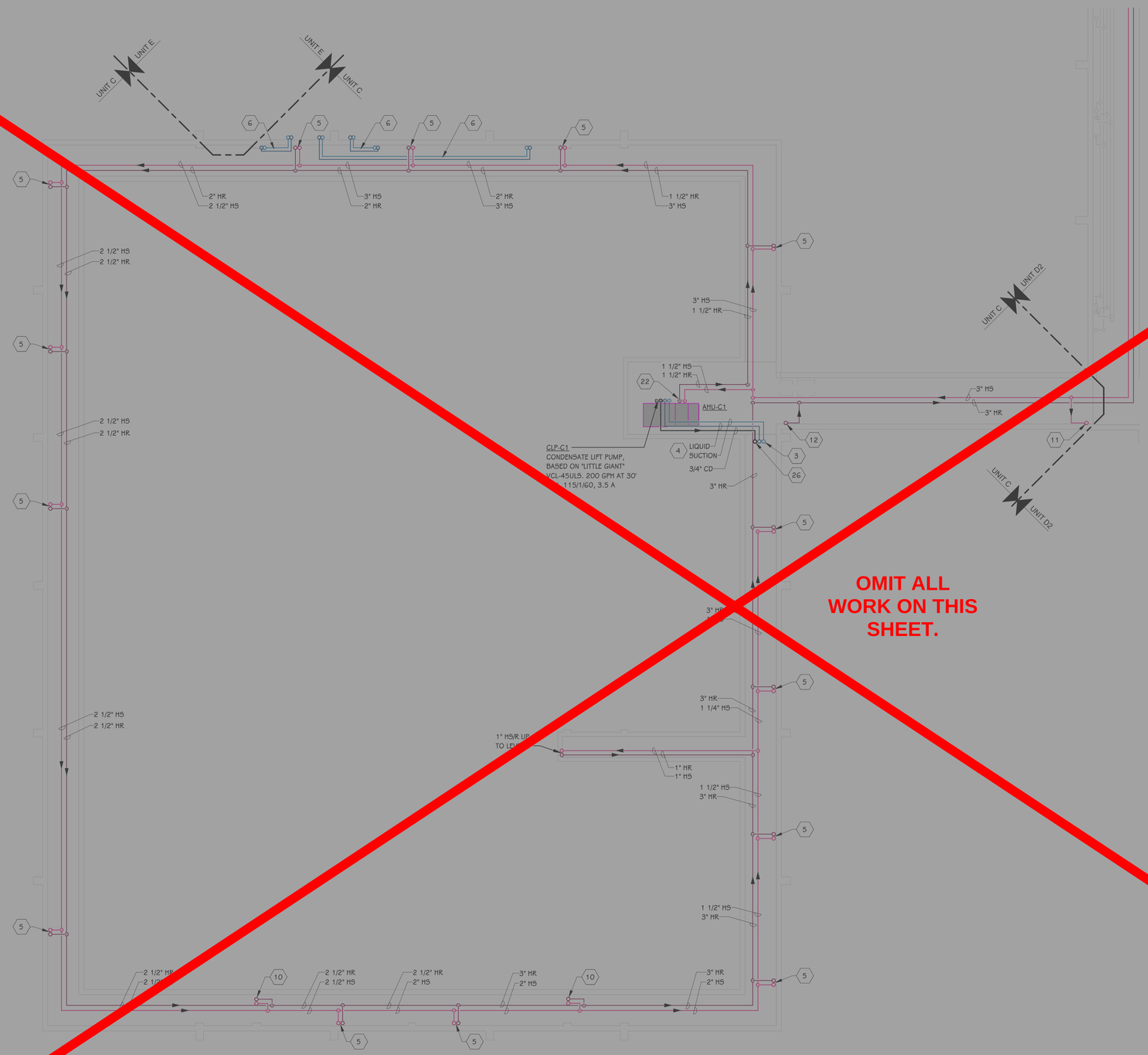
SHEET NUMBER
M 200B

21-807.00



LOWER LEVEL HVAC PIPING PLAN - UNIT C

3/32" = 1'-0"

OMIT ALL WORK ON THIS SHEET.

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3 REFRIGERANT PIPING UP TO FIRST FLOOR.

4 ROUTE REFRIGERANT PIPING UP THRU EXIST. PIPE ENCLOSURE TO ACCU ON ROOF. REFRIGERANT PIPING TO BE SIZED PER MANUFACTURES RECOMMENDATIONS.

5 1" H5 & 1" HR UP TO UNIT VENTILATOR ABOVE.

6 ROUTE REFRIGERANT PIPING THRU TUNNEL TO UNIT VENTILATOR. REFRIGERANT PIPING TO BE SIZED PER MANUFACTURES RECOMMENDATIONS.

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8 REFER TO SHEET M-200M FOR CONTINUATION.

9 REFER TO ENLARGED MECHANICAL PLAN ON SHEET M302 FOR CONTINUATION.

10

11 ¾" H5 UP TO FIN TUBE RADIATION ABOVE.

12 ¾" HR FROM FIN TUBE RADIATION ABOVE.

13 HEATING SUPPLY AND RETURN PIPING DN TO CABINET HEATER. COVER EXPOSED PIPING WITH METAL PIPE ENCLOSURE.

14 ROUTE REFRIGERANT PIPING FROM DX COOLING COIL IN AIR HANDLING UNIT TO ACCU LOCATED ON ROOF. LIQUID/SUCTION LINE SIZES AND FINAL PIPE ROUTINGS & LAYOUT TO BE COORDINATED WITH MANUFACTURER'S RECOMMENDATIONS.

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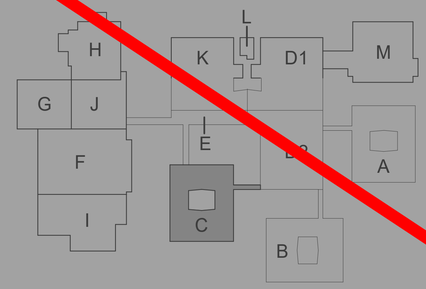
LOWER LEVEL - KEY PLAN



KEY PLAN

SCALE: NO SCALE

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OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
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DATE
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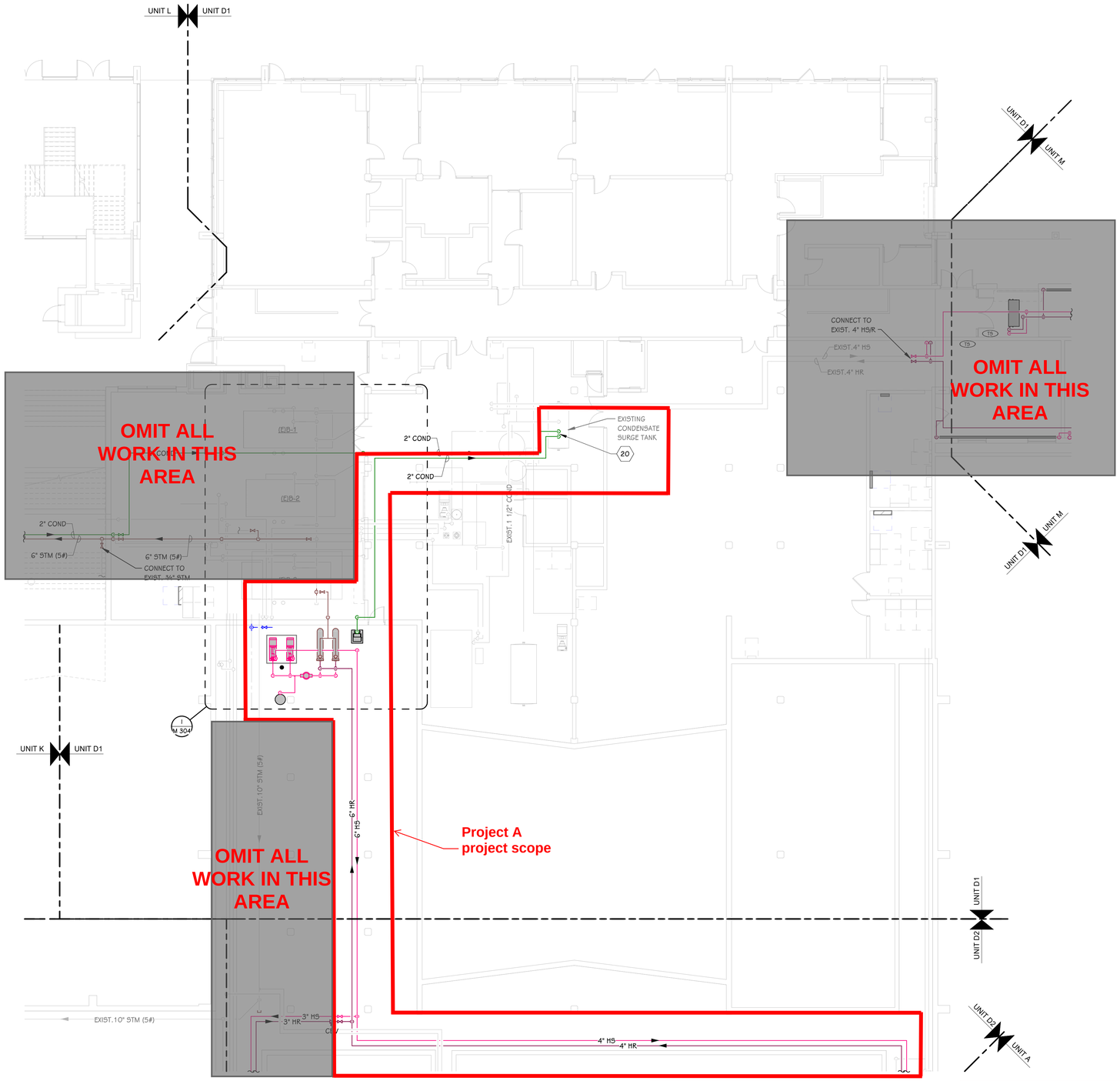
SHEET NUMBER
M 200C

21-807.00



LOWER LEVEL HVAC PIPING PLAN - UNIT D1
3/32" = 1'-0"

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9 REFER TO ENLARGED MECHANICAL PLAN ON SHEET M302 FOR CONTINUATION.

10

11 ¾" HS UP TO FIN TUBE RADIATION ABOVE.

12 ¾" HR FROM FIN TUBE RADIATION ABOVE.

13 HEATING SUPPLY AND RETURN PIPING DN TO CABINET HEATER. COVER EXPOSED PIPING WITH METAL PIPE ENCLOSURE.

14 ROUTE REFRIGERANT PIPING FROM DX COOLING COIL IN AIR HANDLING UNIT TO ACCU LOCATED ON ROOF. LIQUID/SUCTION LINE SIZES AND FINAL PIPE ROUTINGS & LAYOUT TO BE COORDINATED WITH MANUFACTURER'S RECOMMENDATIONS.

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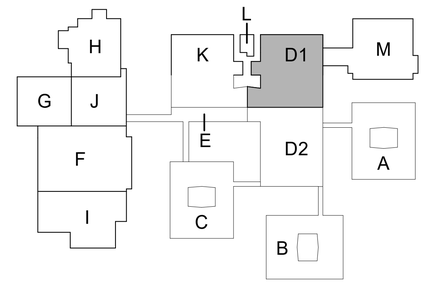

KEY PLAN
SCALE: NO SCALE

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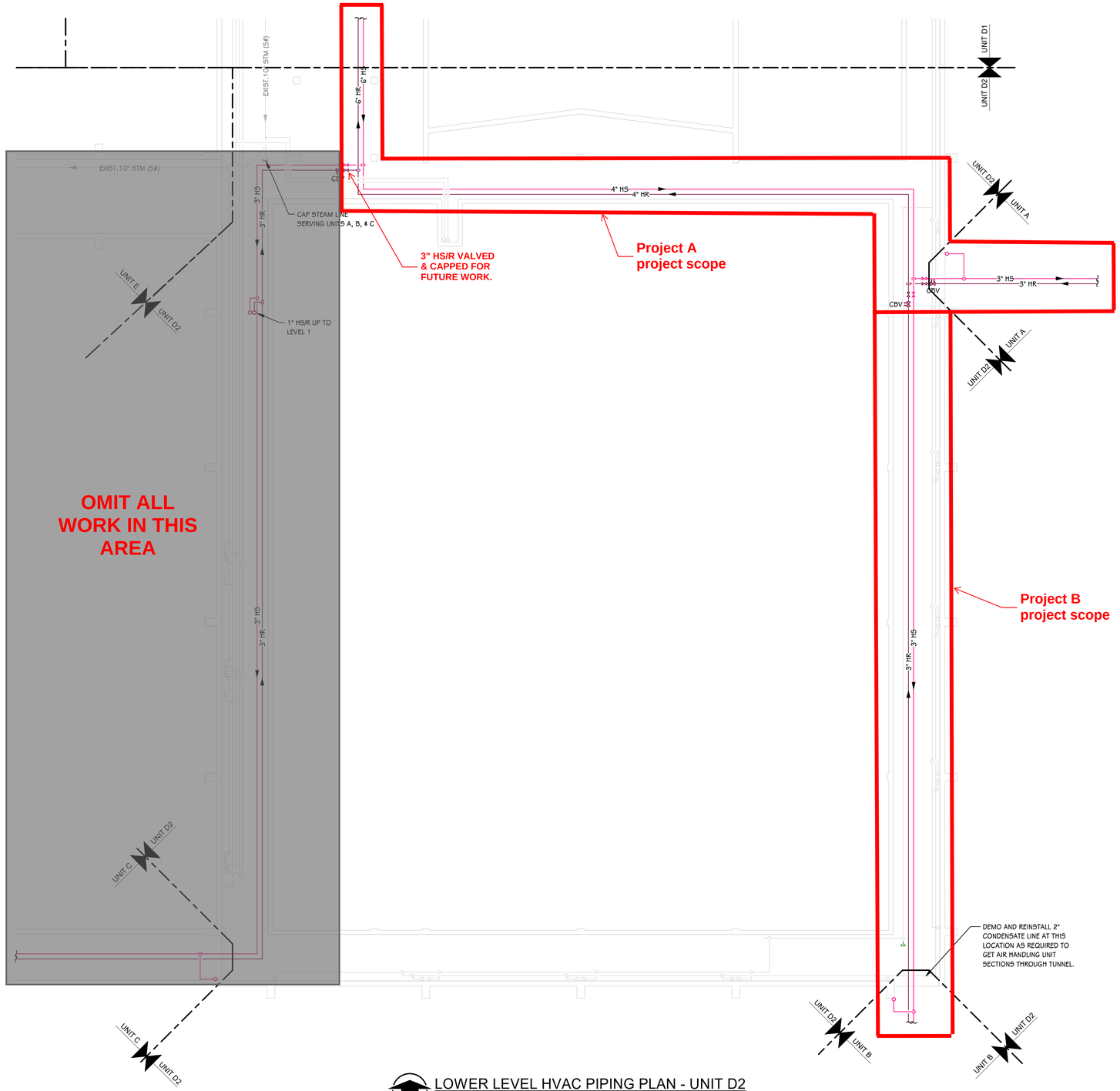
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL HVAC PIPING PLAN - UNIT D1

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 200D1
21-807.00



LOWER LEVEL HVAC PIPING PLAN - UNIT D2
3/32" = 1'-0"

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8 REFER TO SHEET M-200M FOR CONTINUATION.

9 REFER TO ENLARGED MECHANICAL PLAN ON SHEET M302 FOR CONTINUATION.

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11 ¾" HS UP TO FIN TUBE RADIATION ABOVE.

12 ¾" HR FROM FIN TUBE RADIATION ABOVE.

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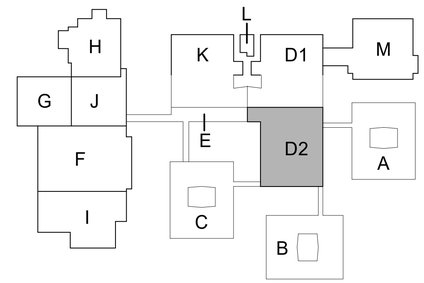

KEY PLAN
SCALE: NO SCALE

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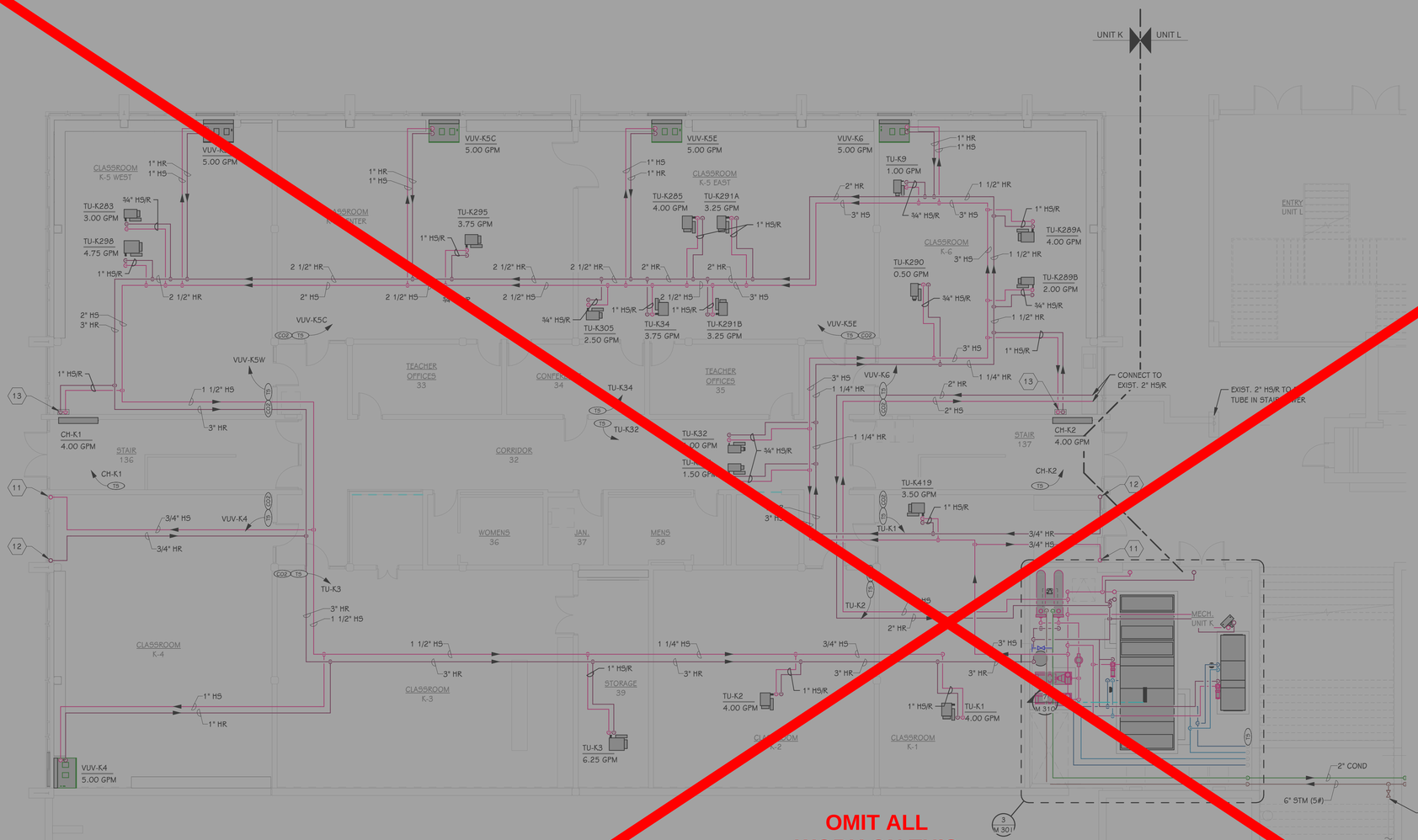
OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL HVAC PIPING PLAN - UNIT D2

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 200D2
21-807.00



OMIT ALL WORK ON THIS SHEET.

LOWER LEVEL HVAC PIPING PLAN - UNIT K

1/8" = 1'-0"

KEYED NOTES - HVAC PIPING

1 REFRIGERANT PIPING UP TO ROOF. REFRIGERANT PIPING TO BE SIZED PER MANUFACTURES RECOMMENDATIONS.

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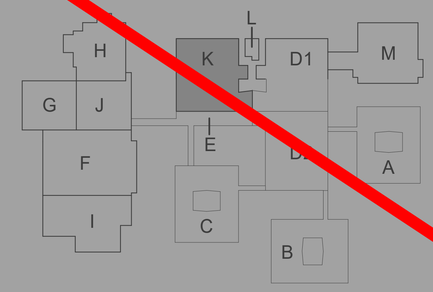

KEY PLAN
SCALE: NO SCALE

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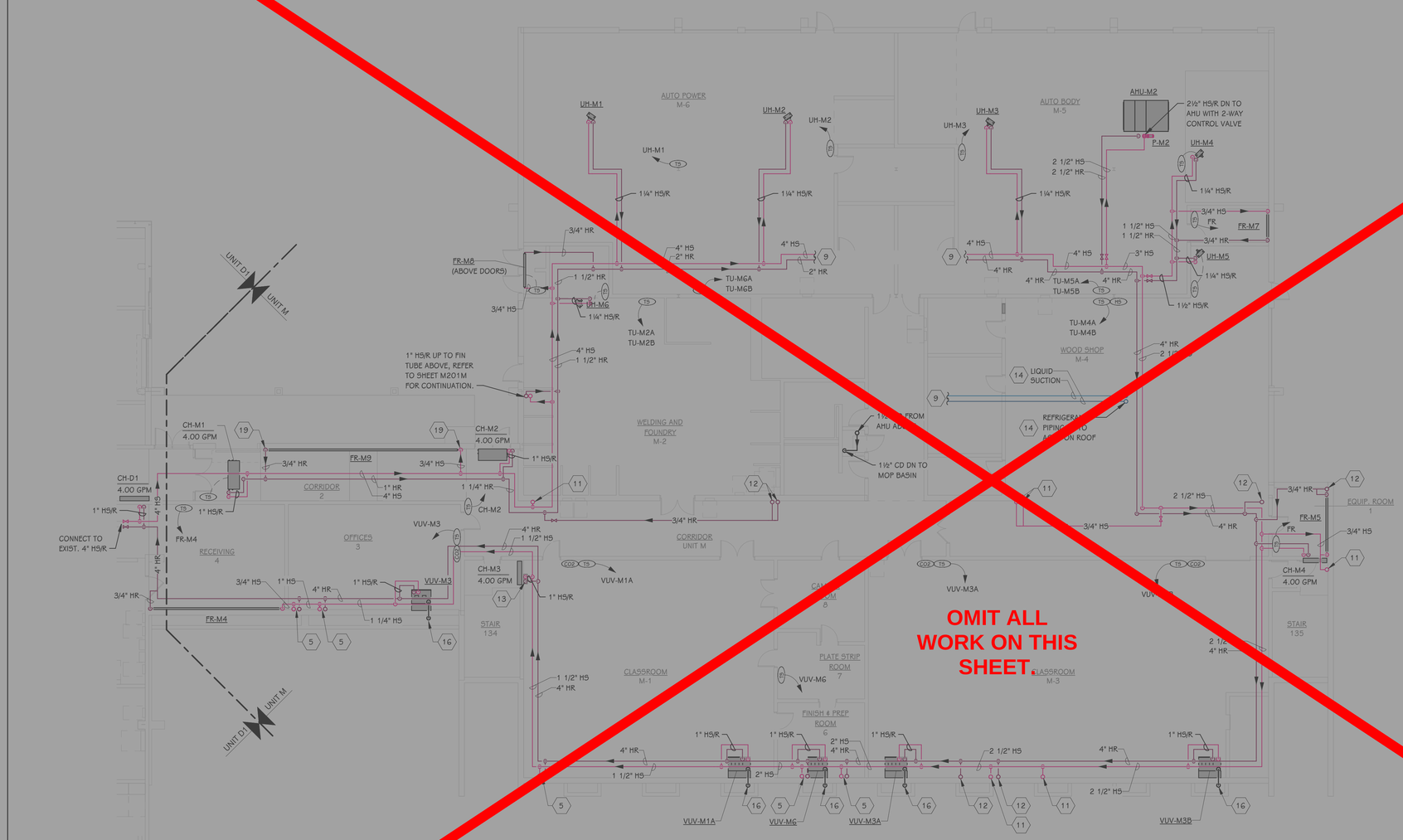

LOWER LEVEL HVAC PIPING PLAN - UNIT M

3/32" = 1'-0"

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5 1" H5 & 1" HR UP TO UNIT VENTILATOR ABOVE.

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18 PROVIDE FIN TUBE ENCLOSURE TO CREATE A CONTINUOUS LOOK.

19 COVER EXPOSED PIPING WITH METAL PIPE ENCLOSURE.

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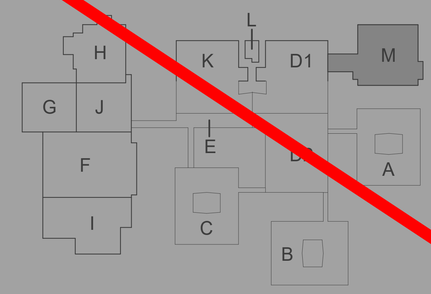
22 HEATING SUPPLY AND RETURN PIPING DOWN TO AHU WITH 3-WAY CONTROL VALVE.

25 INSTALL A (1)ONE HOUR WALL TIMER SWITCH TO CONTROL EXHAUST FAN.

26 ROUTE ¾" CONDENSATE DRAIN FROM CONDENSATE LIFT PUMP UP TO ROOF.

27 1" H5/R PIPING FROM LOWER LEVEL TO UNIT VENTILATOR.

LOWER LEVEL - KEY PLAN



KEY PLAN

SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

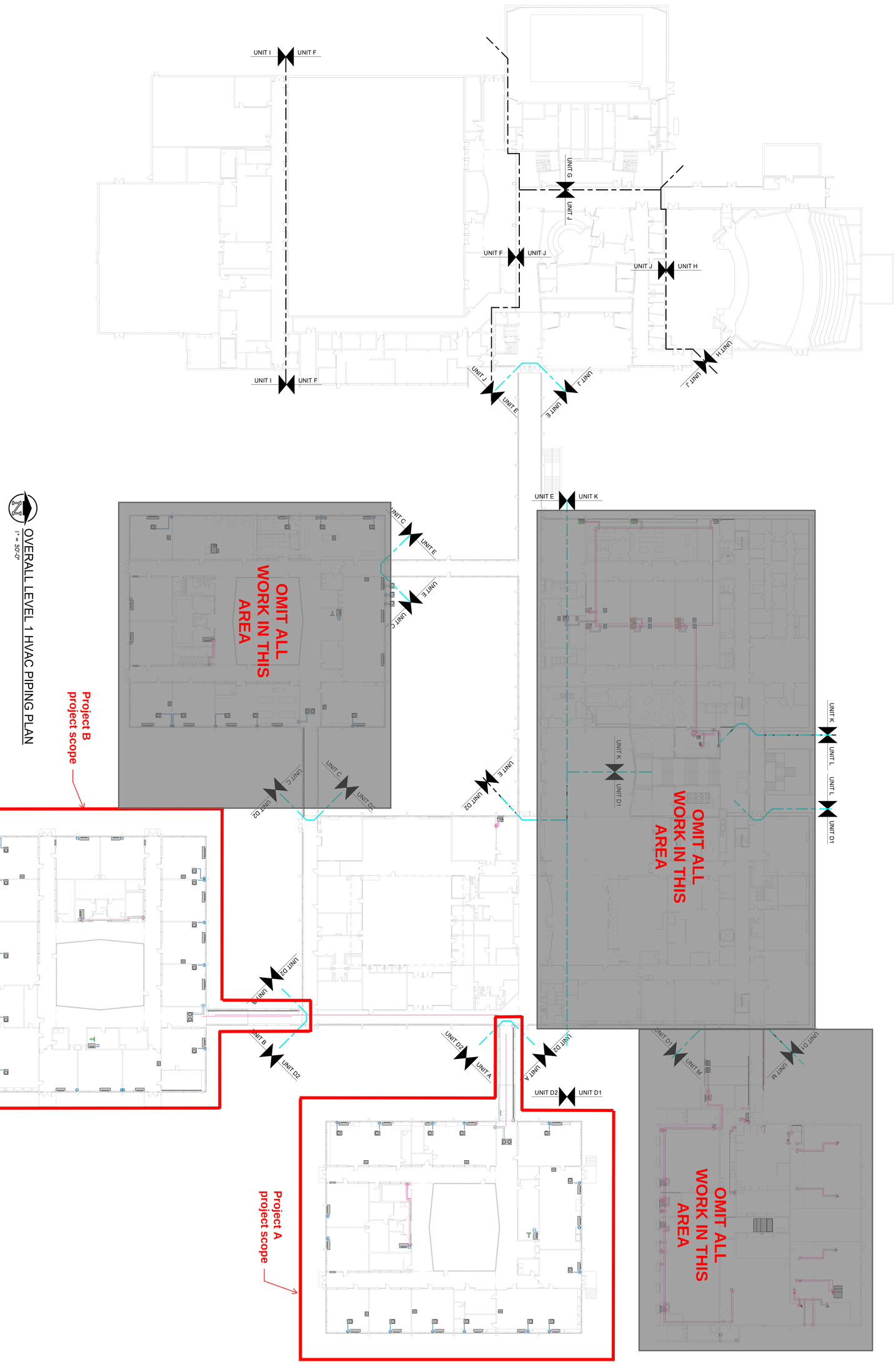
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL HVAC PIPING PLAN - UNIT M

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 200M

21-807.00



SHEET TITLE
OVERALL LEVEL 1 HVAC PIPING PLAN

SHEET NUMBER
M 201
21-807.00

DATE
NOVEMBER 22, 2022

OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

ISSUED FOR — **DATE**
Addendum No. 2 — December 16, 2022

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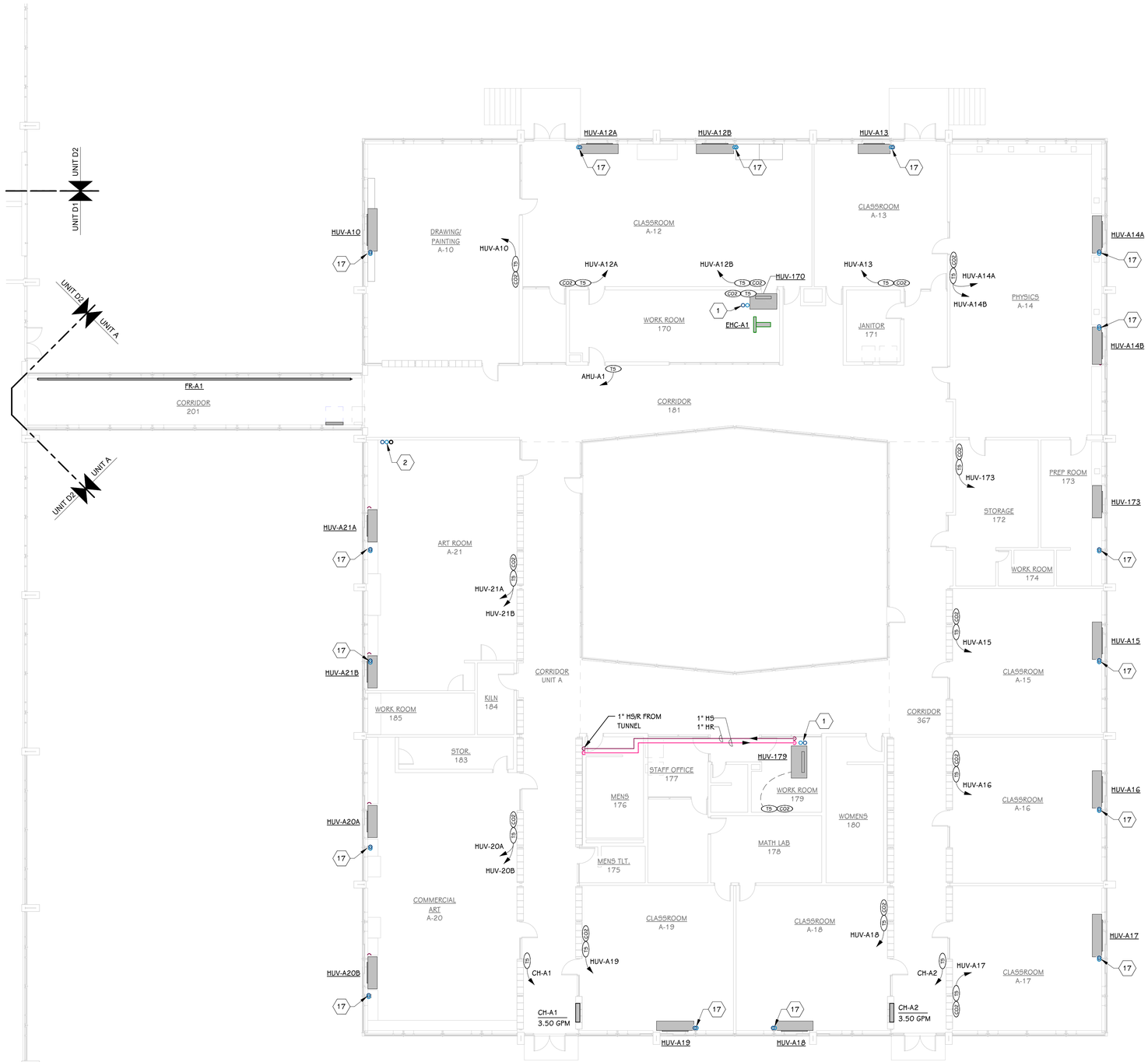

LEVEL 1 HVAC PIPING PLAN - UNIT A

3/32" = 1'-0"

KEYED NOTES - HVAC PIPING

1 REFRIGERANT PIPING UP TO ROOF. REFRIGERANT PIPING TO BE SIZED PER MANUFACTURES RECOMMENDATIONS.

2 REFRIGERANT PIPING AND ¾" CONDENSATE DRAIN FROM TUNNEL UP TO ROOF. COVER PIPING WITH METAL PIPE ENCLOSURE.

3 REFRIGERANT PIPING UP TO FIRST FLOOR.

4 ROUTE REFRIGERANT PIPING UP THRU EXIST. PIPE ENCLOSURE TO ACCU ON ROOF. REFRIGERANT PIPING TO BE SIZED PER MANUFACTURES RECOMMENDATIONS.

5 1" HS & 1" HR UP TO UNIT VENTILATOR ABOVE.

6 ROUTE REFRIGERANT PIPING THRU TUNNEL TO UNIT VENTILATOR. REFRIGERANT PIPING TO BE SIZED PER MANUFACTURES RECOMMENDATIONS.

7 REMOVE AND RE-INSTALL EXISTING HORIZONTAL PIPE ENCLOSURE AS REQUIRED TO INSTALL NEW REFRIGERANT PIPING.

8 REFER TO SHEET M-200M FOR CONTINUATION.

9 REFER TO ENLARGED MECHANICAL PLAN ON SHEET M302 FOR CONTINUATION.

10

11 ¾" HS UP TO FIN TUBE RADIATION ABOVE.

12 ¾" HR FROM FIN TUBE RADIATION ABOVE.

13 HEATING SUPPLY AND RETURN PIPING DN TO CABINET HEATER. COVER EXPOSED PIPING WITH METAL PIPE ENCLOSURE.

14 ROUTE REFRIGERANT PIPING FROM DX COOLING COIL IN AIR HANDLING UNIT TO ACCU LOCATED ON ROOF. LIQUID/SUCTION LINE SIZES AND FINAL PIPE ROUTINGS & LAYOUT TO BE COORDINATED WITH MANUFACTURER'S RECOMMENDATIONS.

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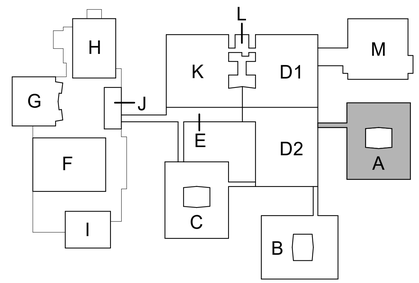
LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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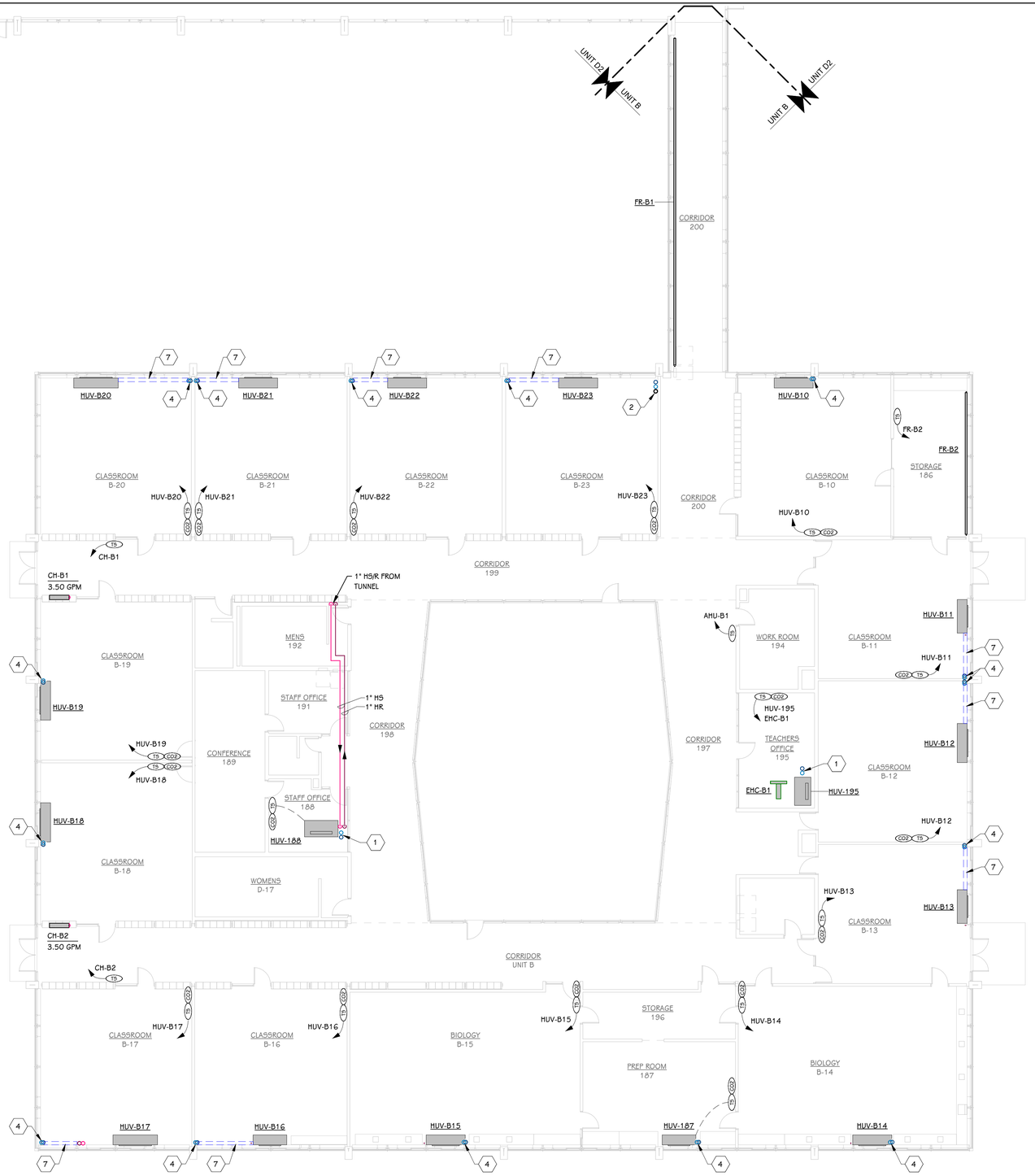
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 HVAC PIPING PLAN - UNIT A

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 201A
21-807.00



LEVEL 1 HVAC PIPING PLAN - UNIT B
3/32" = 1'-0"

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3 REFRIGERANT PIPING UP TO FIRST FLOOR.

4 ROUTE REFRIGERANT PIPING UP THRU EXIST. PIPE ENCLOSURE TO ACCU ON ROOF. REFRIGERANT PIPING TO BE SIZED PER MANUFACTURES RECOMMENDATIONS.

5 1" HS & 1" HR UP TO UNIT VENTILATOR ABOVE.

6 ROUTE REFRIGERANT PIPING THRU TUNNEL TO UNIT VENTILATOR. REFRIGERANT PIPING TO BE SIZED PER MANUFACTURES RECOMMENDATIONS.

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8 REFER TO SHEET M-200M FOR CONTINUATION.

9 REFER TO ENLARGED MECHANICAL PLAN ON SHEET M302 FOR CONTINUATION.

10

11 ¾" HS UP TO FIN TUBE RADIATION ABOVE.

12 ¾" HR FROM FIN TUBE RADIATION ABOVE.

13 HEATING SUPPLY AND RETURN PIPING DN TO CABINET HEATER. COVER EXPOSED PIPING WITH METAL PIPE ENCLOSURE.

14 ROUTE REFRIGERANT PIPING FROM DX COOLING COIL IN AIR HANDLING UNIT TO ACCU LOCATED ON ROOF. LIQUID/SUCTION LINE SIZES AND FINAL PIPE ROUTINGS & LAYOUT TO BE COORDINATED WITH MANUFACTURER'S RECOMMENDATIONS.

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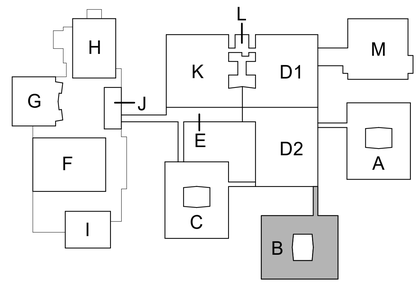
LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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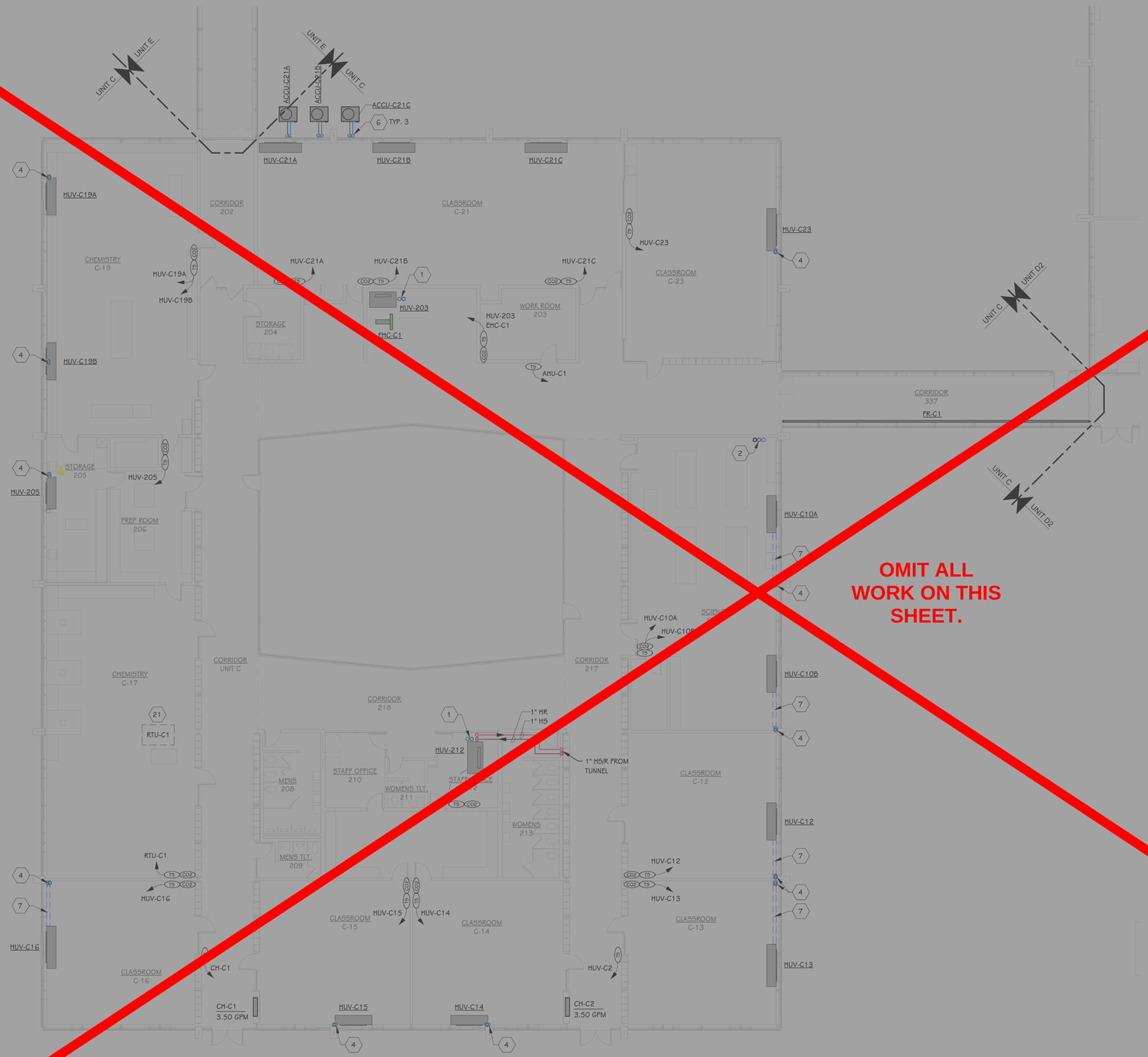
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 HVAC PIPING PLAN - UNIT B

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 201B
21-807.00



LEVEL 1 HVAC PIPING PLAN - UNIT C
3/32" = 1'-0"

OMIT ALL WORK ON THIS SHEET.

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5 1" HS & 1" HR UP TO UNIT VENTILATOR ABOVE.

6 ROUTE REFRIGERANT PIPING THRU TUNNEL TO UNIT VENTILATOR. REFRIGERANT PIPING TO BE SIZED PER MANUFACTURES RECOMMENDATIONS.

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8 REFER TO SHEET M-200M FOR CONTINUATION.

9 REFER TO ENLARGED MECHANICAL PLAN ON SHEET M302 FOR CONTINUATION.

10

11 ¾" HR UP TO FIN TUBE RADIATION ABOVE.

12 ¾" HR FROM FIN TUBE RADIATION ABOVE.

13 HEATING SUPPLY AND RETURN PIPING DN TO CABINET HEATER. COVER EXPOSED PIPING WITH METAL PIPE ENCLOSURE.

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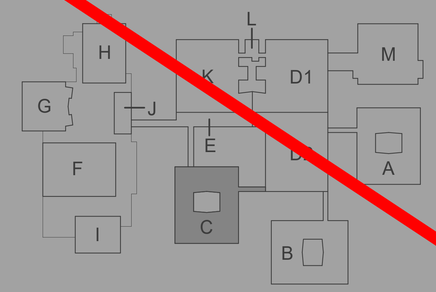
LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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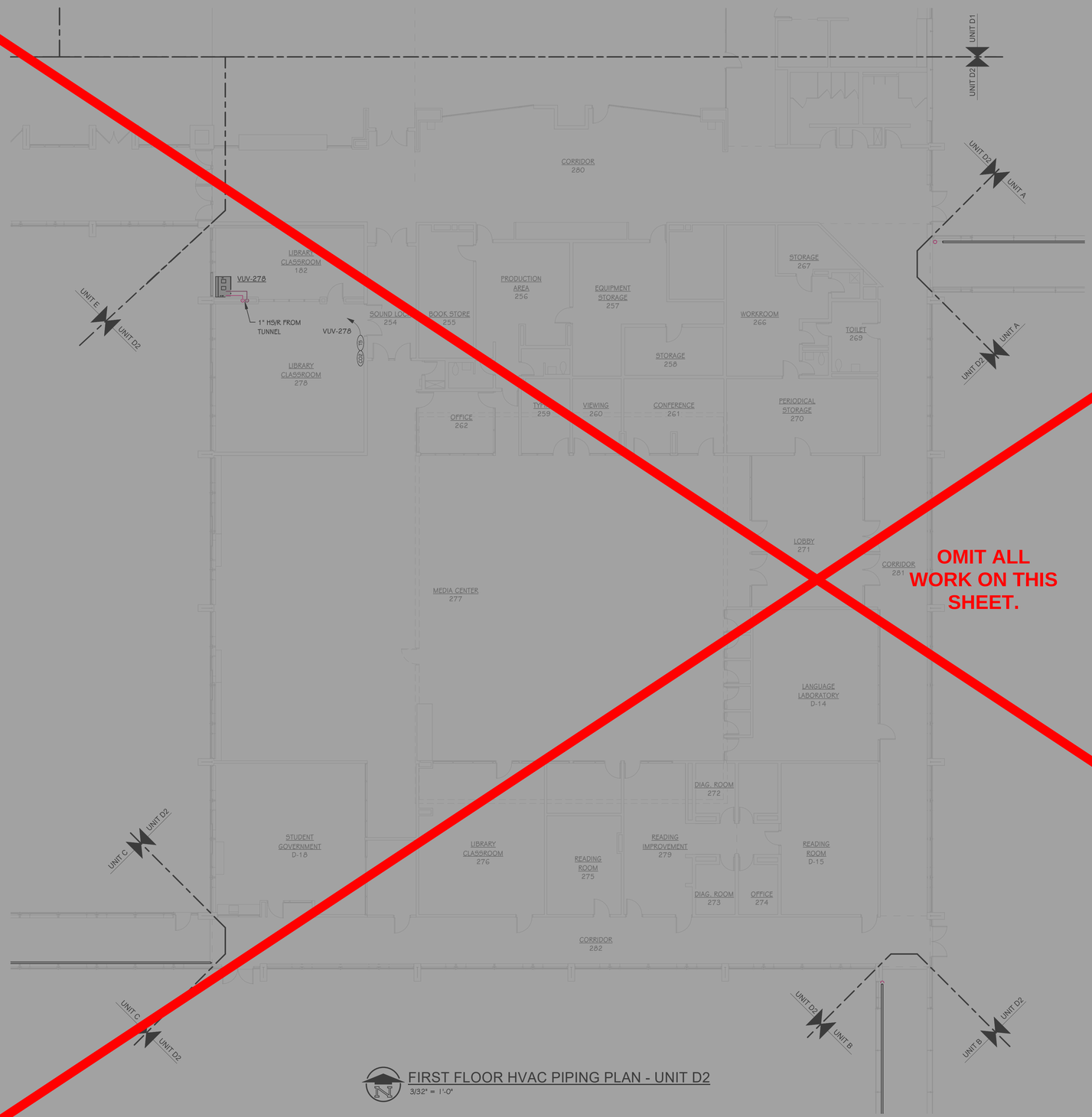
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 HVAC PIPING PLAN - UNIT C

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 201C
21-807.00



FIRST FLOOR HVAC PIPING PLAN - UNIT D2
3/32" = 1'-0"

OMIT ALL WORK ON THIS SHEET.

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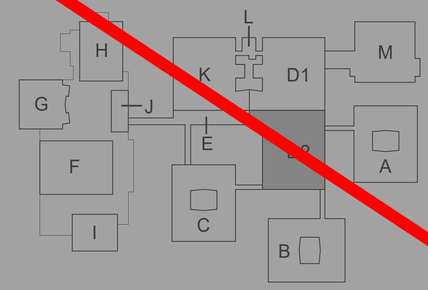

KEY PLAN
SCALE: NO SCALE

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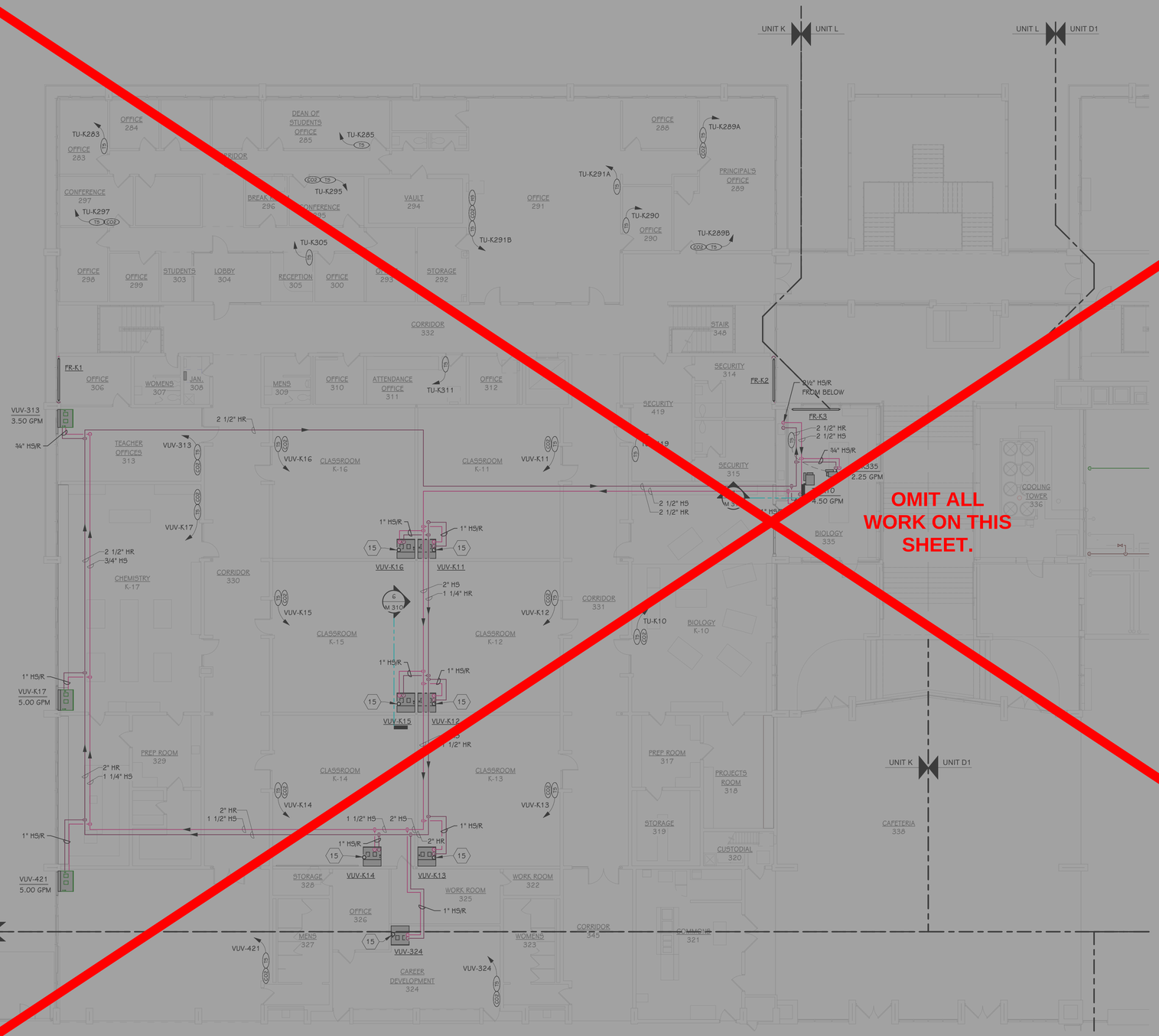
OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 HVAC PIPING PLAN - UNIT D2

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 201D2
21-807.00



OMIT ALL WORK ON THIS SHEET.

LEVEL 1 HVAC PIPING PLAN - UNIT K

3/32" = 1'-0"

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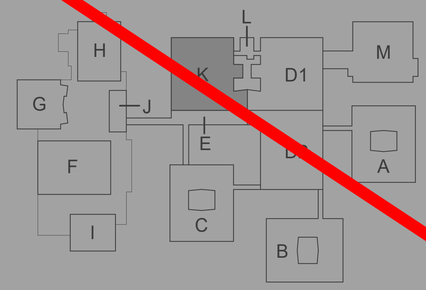

KEY PLAN
SCALE: NO SCALE

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ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 HVAC PIPING PLAN - UNIT K

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 201K
21-807.00

OMIT ALL WORK ON THIS SHEET.

LEVEL 1 HVAC PIPING PLAN - UNIT M
3/32" = 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.

KEYED NOTES - HVAC PIPING

1 REFRIGERANT PIPING UP TO ROOF. REFRIGERANT PIPING TO BE SIZED PER MANUFACTURES RECOMMENDATIONS.

2 REFRIGERANT PIPING AND ¾" CONDENSATE DRAIN FROM TUNNEL UP TO ROOF. COVER PIPING WITH METAL PIPE ENCLOSURE.

3 REFRIGERANT PIPING UP TO FIRST FLOOR.

4 ROUTE REFRIGERANT PIPING UP THRU EXIST. PIPE ENCLOSURE TO ACCU ON ROOF. REFRIGERANT PIPING TO BE SIZED PER MANUFACTURES RECOMMENDATIONS.

5 1" H5 & 1" HR UP TO UNIT VENTILATOR ABOVE.

6 ROUTE REFRIGERANT PIPING THRU TUNNEL TO UNIT VENTILATOR. REFRIGERANT PIPING TO BE SIZED PER MANUFACTURES RECOMMENDATIONS.

7 REMOVE AND RE-INSTALL EXISTING HORIZONTAL PIPE ENCLOSURE AS REQUIRED TO INSTALL NEW REFRIGERANT PIPING.

8 REFER TO SHEET M-200M FOR CONTINUATION.

9 REFER TO ENLARGED MECHANICAL PLAN ON SHEET M302 FOR CONTINUATION.

10

11 ¾" H5 TO FIN TUBE RADIATION ABOVE.

12 1" HR FROM FIN TUBE RADIATION ABOVE.

13 HEATING SUPPLY AND RETURN PIPING DN TO CABINET HEATER. COVER EXPOSED PIPING WITH METAL PIPE ENCLOSURE.

14 ROUTE REFRIGERANT PIPING FROM DX COOLING COIL IN AIR HANDLING UNIT TO ACCU LOCATED ON ROOF. LIQUID/SUCTION LINE SIZES AND FINAL PIPE ROUTINGS & LAYOUT TO BE COORDINATED WITH MANUFACTURER'S RECOMMENDATIONS.

15 INSTALL FACTORY SUPPLIED CONDENSATE PUMP IN UNIT VENTILATOR AND ROUTE ¾" CONDENSATE PIPING UP TO ROOF.

16 INSTALL FACTORY SUPPLIED CONDENSATE PUMP IN UNIT VENTILATOR AND ROUTE ¾" CONDENSATE UP TO AREA WELL AND TERMINATE WITH ELBOW DOWN.

17 ROUTE REFRIGERANT PIPING UP THRU NEW PIPE ENCLOSURE TO ACCU ON ROOF. REFRIGERANT PIPING TO BE SIZED PER MANUFACTURES RECOMMENDATIONS.

18 PROVIDE FIN TUBE ENCLOSURE TO CREATE A CONTINUOUS LOOK.

19 COVER EXPOSED PIPING WITH METAL PIPE ENCLOSURE.

20 ROUTE 2" CONDENSATE DOWN TO EXISTING SURGE TANK MAKING NEW CONNECTIONS ON TOP OF TANK WITH SHUT-OFF VALVES. (TYP. 2 PLACES)

21 INSTALL RTU ON EXISTING ROOF CURB. REWORK EXISTING GAS PIPING ON ROOF AS REQUIRED TO CONNECT. INSTALL NEW SHUT-OFF VALVE AND DIRT LEG.

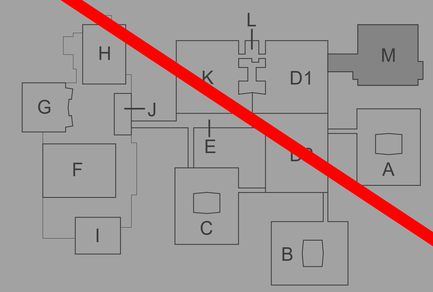
22 HEATING SUPPLY AND RETURN PIPING DOWN TO AHU WITH 3-WAY CONTROL VALVE.

25 INSTALL A (1)ONE HOUR WALL TIMER SWITCH TO CONTROL EXHAUST FAN.

26 ROUTE ¾" CONDENSATE DRAIN FROM CONDENSATE LIFT PUMP UP TO ROOF.

27 1" H5/R PIPING FROM LOWER LEVEL TO UNIT VENTILATOR.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

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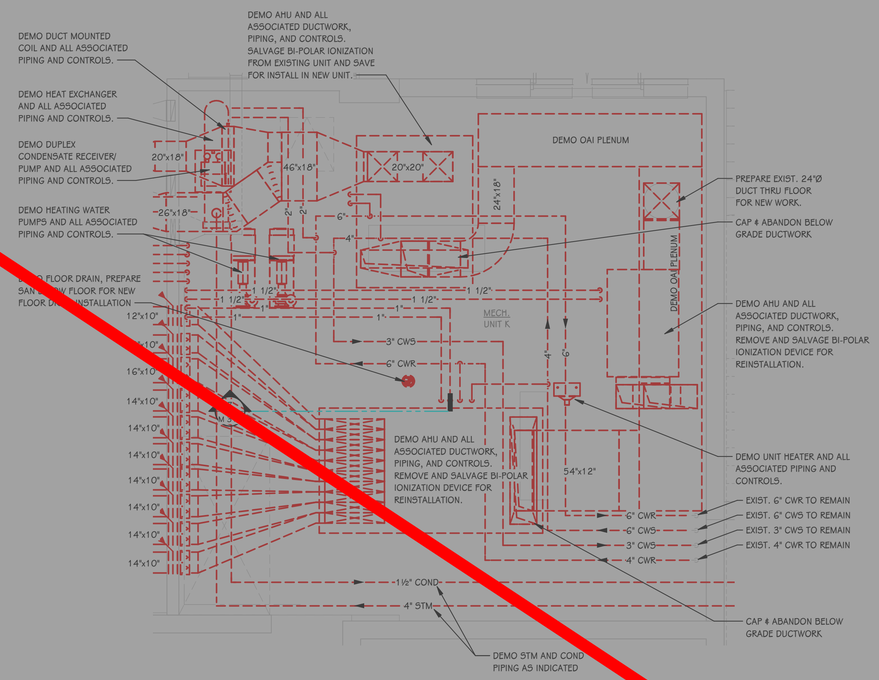
OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

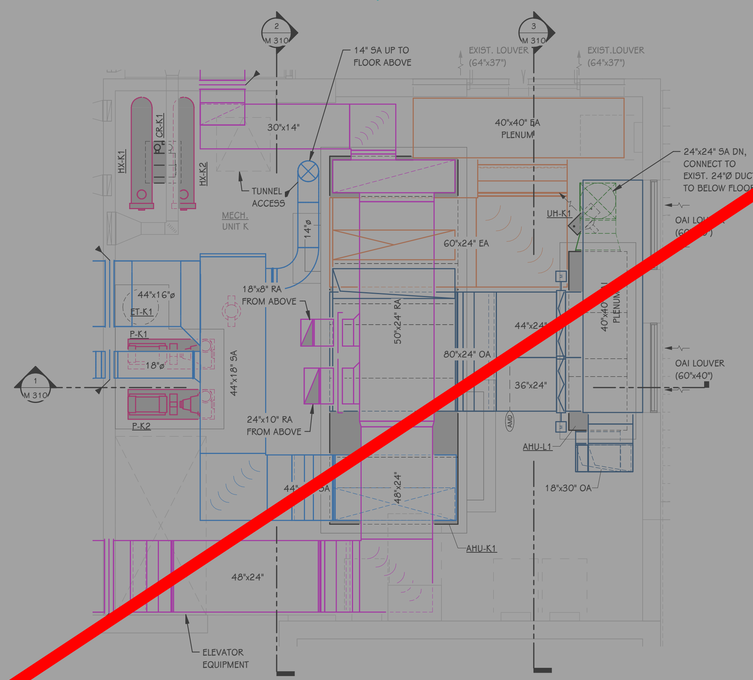
SHEET TITLE
LEVEL 1 HVAC PIPING PLAN - UNIT M

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 201M
21-807.00

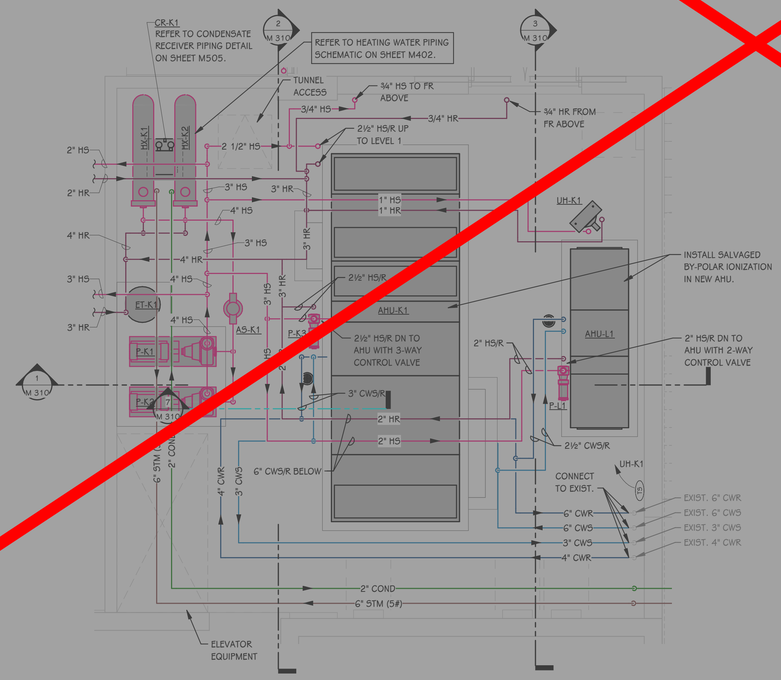


1 M 301 ENLARGED MECHANICAL ROOM DEMOLITION PLAN - UNIT K
1/4" = 1'-0"

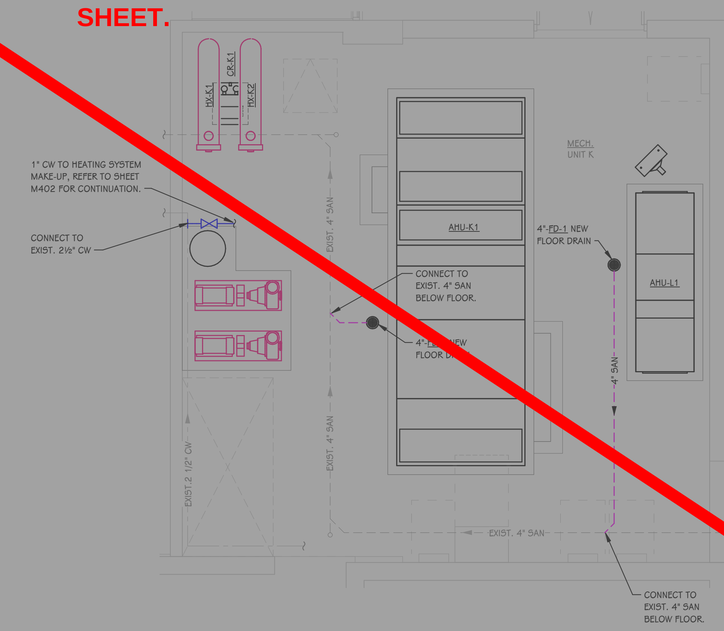


2 M 301 ENLARGED MECHANICAL ROOM SHEET METAL PLAN - UNIT K
1/4" = 1'-0"

OMIT ALL WORK ON THIS SHEET.



3 M 301 ENLARGED MECHANICAL ROOM HVAC PIPING PLAN - UNIT K
1/4" = 1'-0"



4 M 301 ENLARGED LOWER LEVEL PLUMBING PLAN - UNIT K
1/4" = 1'-0"

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LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
ENLARGED MECHANICAL PLANS - UNIT K

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 301
21-807.00

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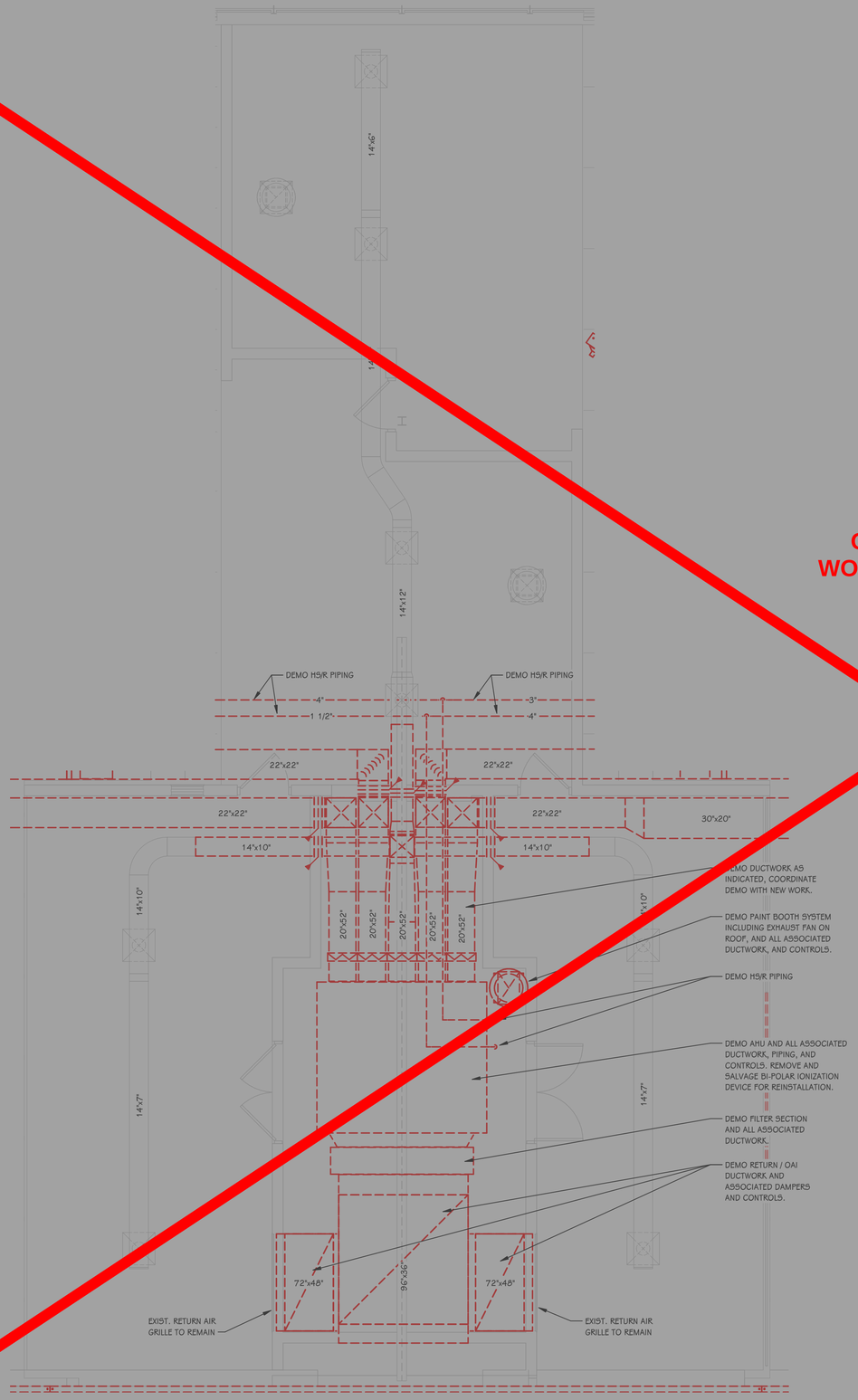
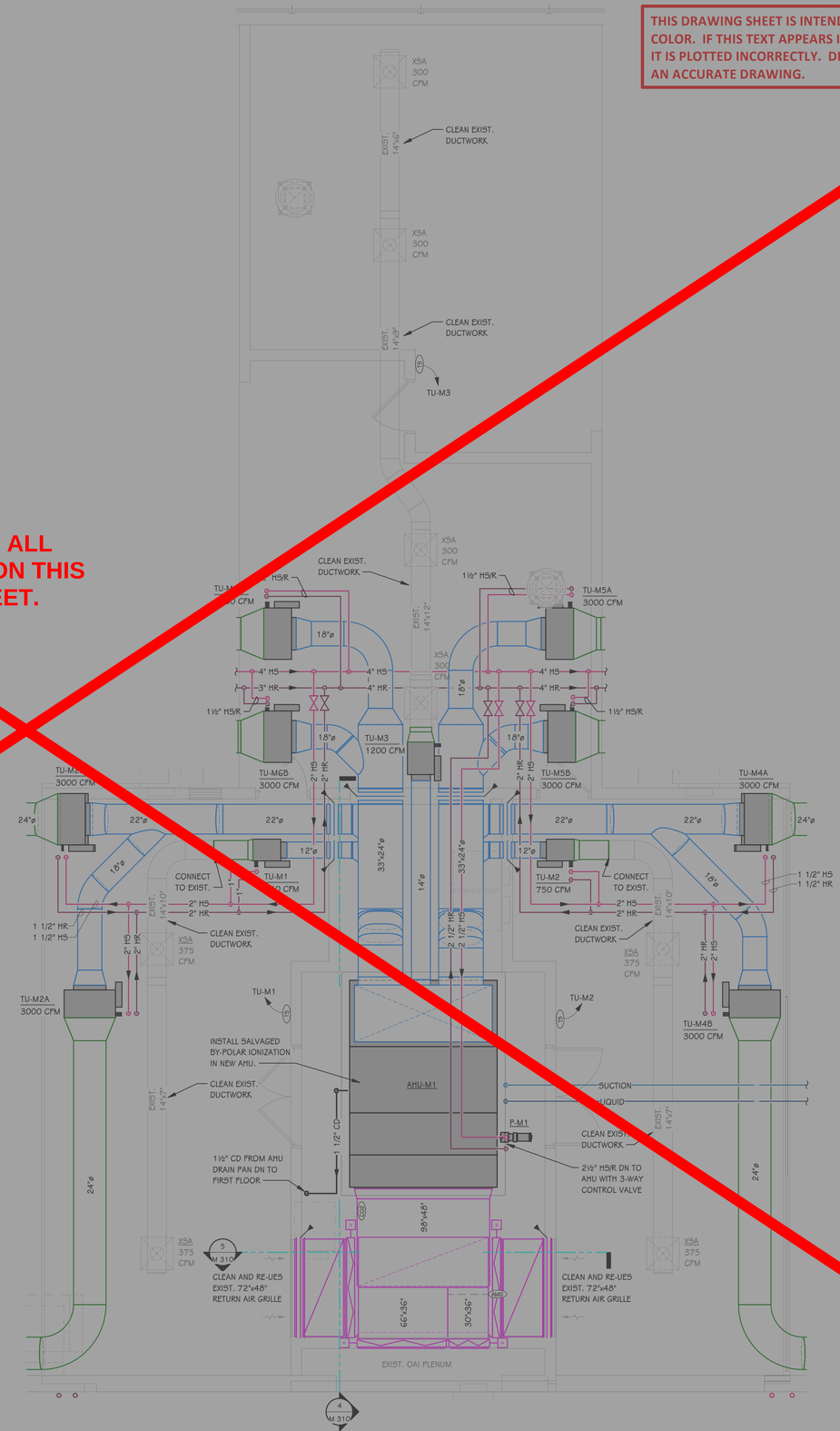


1 M 302 ENLARGED MECHANICAL ROOM DEMOLITION PLAN - UNIT M
1/4" = 1'-0"



2 M 302 ENLARGED MECHANICAL ROOM PLAN - UNIT M
1/4" = 1'-0"

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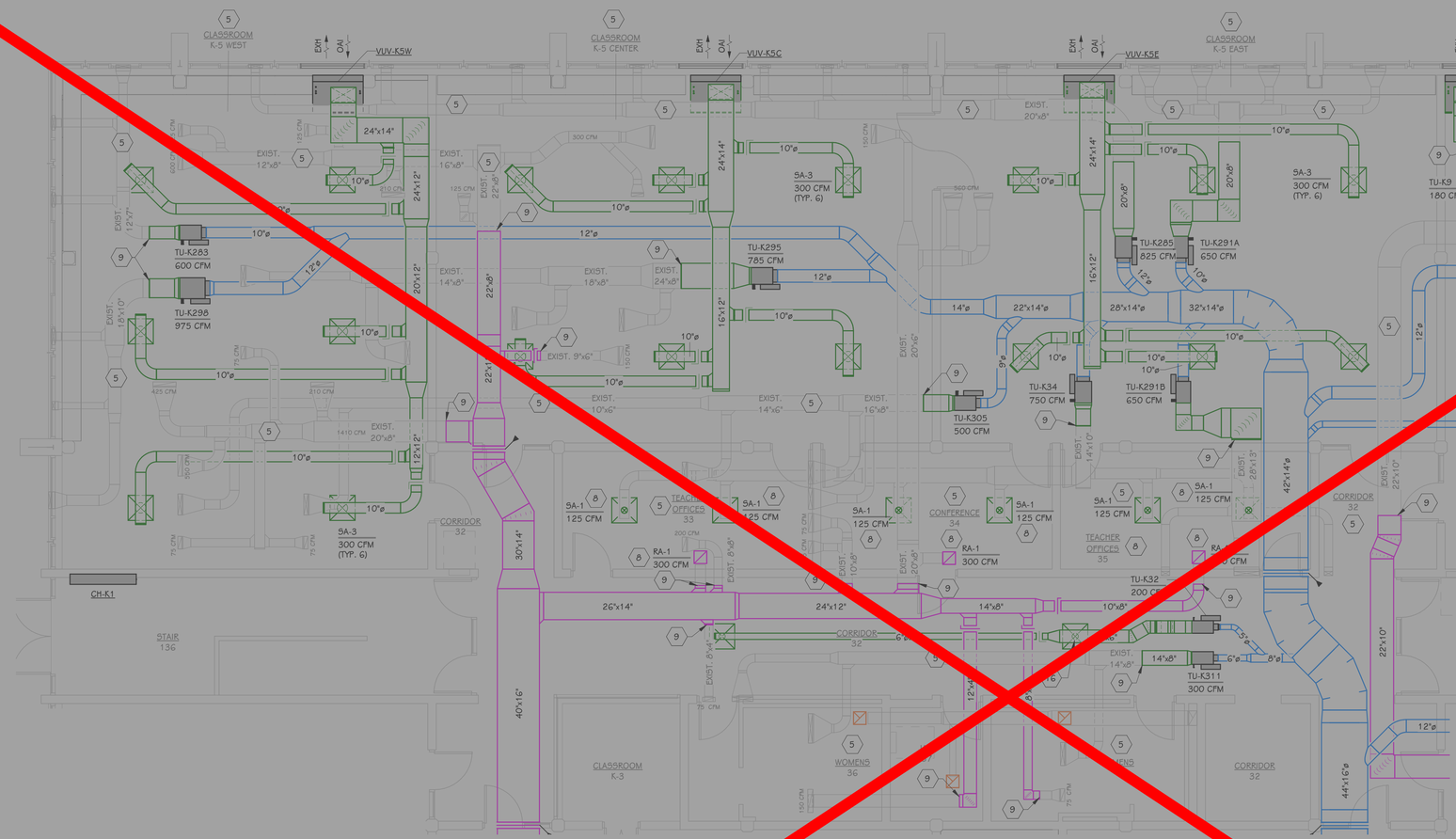
OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
ENLARGED MECHANICAL PLANS - UNIT M

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 302
21-807.00



1 ENLARGED LOWER LEVEL SHEET METAL PLAN - UNIT K
M.302 3/16" = 1'-0"

OMIT ALL WORK ON THIS SHEET.

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.

KEYED NOTES - SHEET METAL

1 INSTALL EXHAUST FAN ON EXISTING ROOF CURB. INSTALL CURB ADAPTER IF REQUIRED. CLEAN EXISTING EXHAUST DUCTWORK. PROVIDE PHOTO DOCUMENTATION.

2 INSTALL CEILING MOUNTED UNIT VENTILATOR. REWORK EXISTING SUPPLY, RETURN, AND OAI DUCTWORK AS REQUIRED TO RECONNECT. CLEAN EXISTING DUCTWORK. PROVIDE PHOTO DOCUMENTATION.

3 INSTALL AIR HANDLING UNIT. REWORK EXIST. DUCTWORK AS REQUIRED TO RECONNECT. CLEAN EXISTING DUCTWORK. PROVIDE PHOTO DOCUMENTATION

4 INSTALL MAKE-UP AIR UNIT AND EXHAUST FAN TO SERVE THE PAINT BOOTH. MODIFY EXISTING DUCTWORK AS REQUIRED TO RECONNECT.

5 CLEAN EXISTING SUPPLY, RETURN, AND EXHAUST DUCTWORK IN THIS AREA. PROVIDE PHOTO DOCUMENTATION.

6 INSTALL RELIEF HOOD ON EXIST. ROOF CURB. CLEAN EXISTING RELIEF AIR DUCTWORK. PROVIDE PHOTO DOCUMENTATION.

7 INSTALL 14"x14" RELIEF AIR DUCT AND GRILLE. CONNECT TO EXISTING PLENUM.

8 CLEAN EXIST. DUCTWORK AND INSTALL NEW GRILLE OR DIFFUSER. MODIFY EXISTING DUCTWORK AS REQUIRED TO RECONNECT. VERIFY IF BALANCE DAMPER EXIST AND IS OPERATIONAL AND INSTALL NEW ONE IF REQUIRED.

9 CONNECT TO EXISTING DUCTWORK.

10 REFRIGERANT PIPING FROM BELOW TO ACCU. REFER TO PIPING PORTAL / CURB DETAIL ON SHEET M505. REFRIGERANT PIPING SIZED PER MANUFACTURE'S RECOMMENDATIONS.

KEYED NOTES - SHEET METAL CONT'D

11 INSTALL SALVAGED BI-POLAR IONIZATION INTO AIR HANDLING UNIT.

13 PAINT TO MATCH EXISTING.

16 INSTALL BALANCE DAMPER IN THE VERTICAL.

17 ROUTE BRANCH DUCTWORK THRU BAR JOIST (TYP.)

18 REFER TO ROOF EXHAUSTER DETAIL - UPBLAST (WITH WINDBAND) DETAIL ON SHEET M506.

19 REFER TO VERTICAL UNIT VENTILATOR DETAIL WITH 15" REAR EXTENSION ON SHEET M507.

20 INSTALL DUCT LINER ON RETURN AIR PLENUM FROM RTU TO RETURN AIR GRILLE.

21 SUPPLY DUCTWORK INSTALLED BELOW CEILING AS HIGH AS POSSIBLE.

22 REFER TO ENLARGED MECHANICAL PLAN ON SHEET M302 FOR CONTINUATION.

23 CONNECT TO EXISTING DUCTWORK. TRANSITION AS REQUIRED TO CONNECT.

24 INSTALL RTU ON EXISTING ROOF CURB. MODIFY EXISTING GAS PIPING ON ROOF AS REQUIRED TO CONNECT.

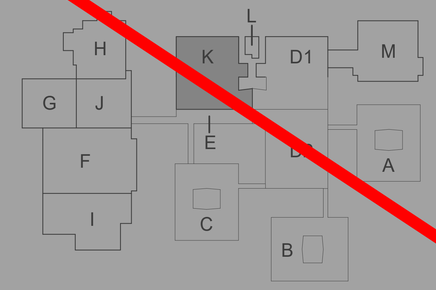
25 EXTEND GRILLE OUT TO FACE OF EXIST. EXHAUST HOOD.

26 ¾" CONDENSATE DRAIN FROM CONDENSATE LIFT PUMP IN TUNNEL. SPILL CONDENSATE ON ROOF.

KEYED NOTES - SHEET METAL CONT'D

27 INSTALL 20"x80" TRANSFER AIR GRILLES ON BOTH SIDES OF WALL TO COVER UP EXISTING OPENING.

LOWER LEVEL - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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ISSUED FOR DATE

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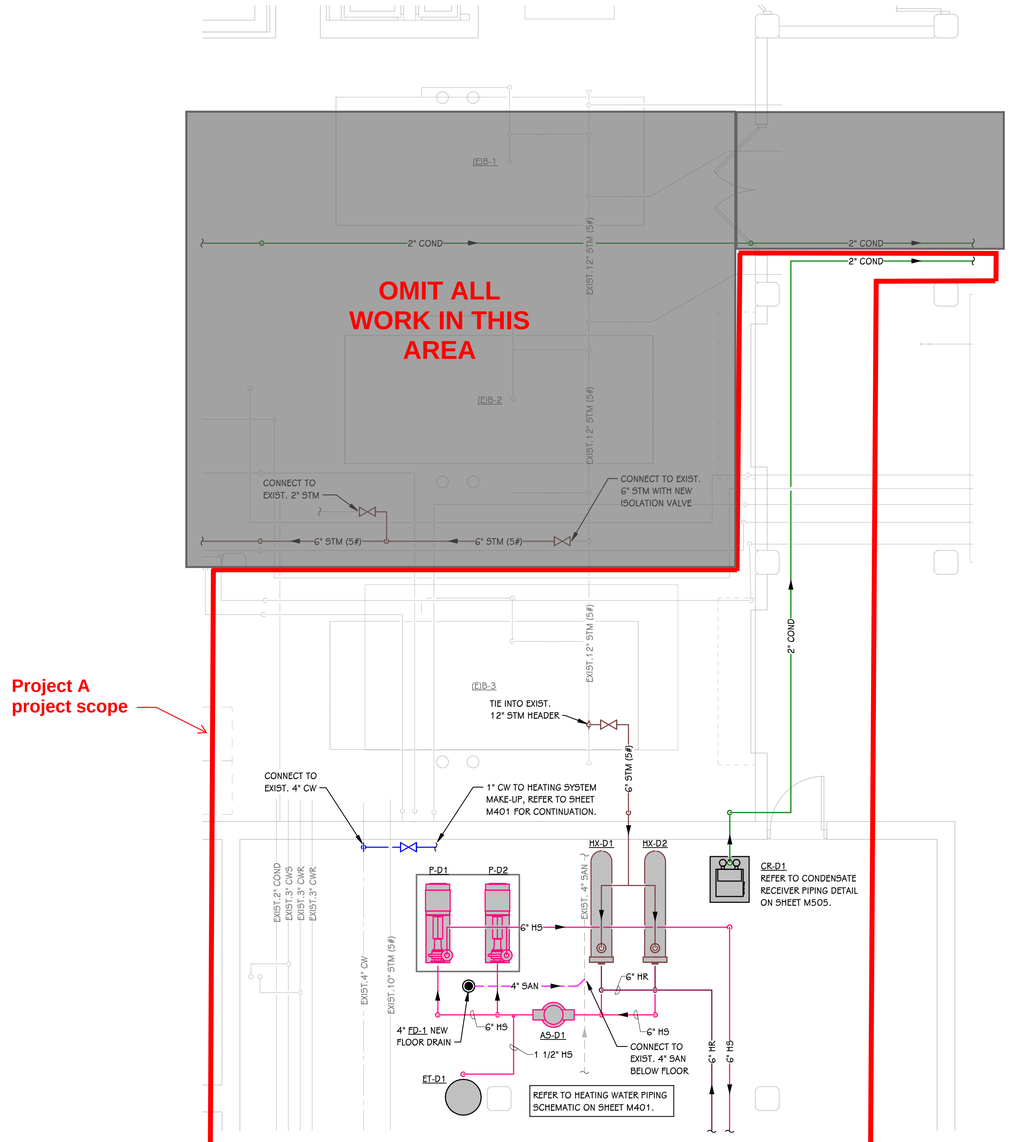
OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ENLARGED LOWER LEVEL SHEET METAL PLAN - UNIT K

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 303
21-807.00



1 / M 304 ENLARGED LOWER LEVEL MECHANICAL PLAN - UNIT D

1/4" = 1'-0"

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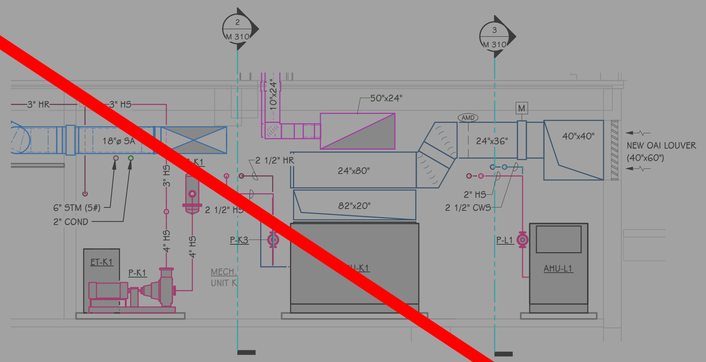
OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

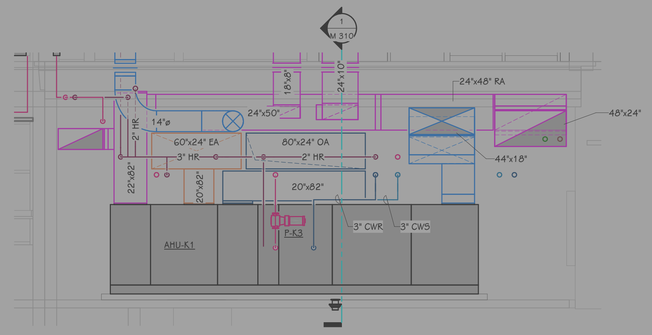
SHEET TITLE
ENLARGED MECHANICAL PLANS

DATE
NOVEMBER 22, 2022

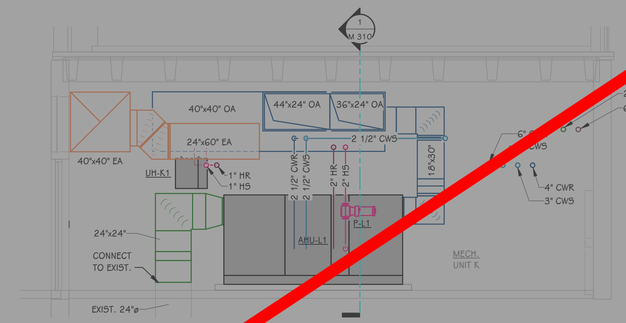
SHEET NUMBER
M 304
21-807.00



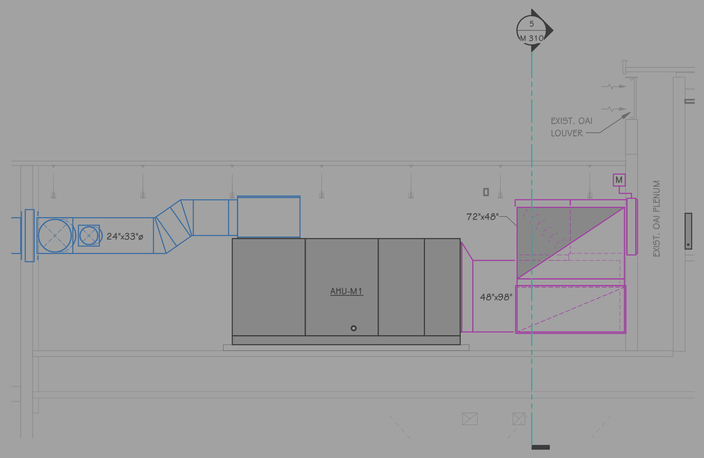
1 M 310 UNIT K MECHANICAL ROOM SECTION LOOKING NORTH
1/4" = 1'-0"



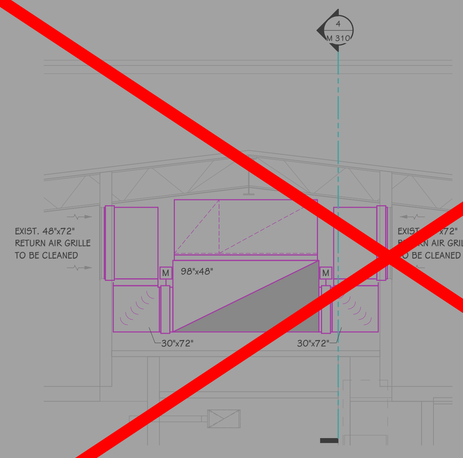
2 M 310 AHU-K1 SECTION LOOKING EAST
1/4" = 1'-0"



3 M 310 AHU-L1 SECTION LOOKING EAST
1/4" = 1'-0"

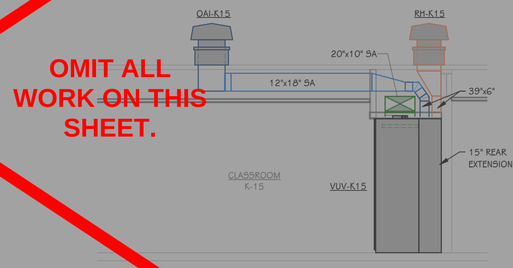


4 M 310 AHU-M1 SECTION LOOKING SOUTH
1/4" = 1'-0"

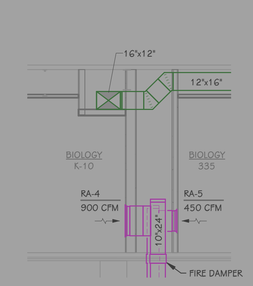


5 M 310 AHU-M1 SECTION LOOKING NORTH
1/4" = 1'-0"

OMIT ALL WORK ON THIS SHEET.



6 M 310 TYPICAL UNIT K VERTICAL UNIT VENTILATOR SECTION
1/4" = 1'-0"



7 M 310 BIOLOGY K-10 SECTION
1/4" = 1'-0"

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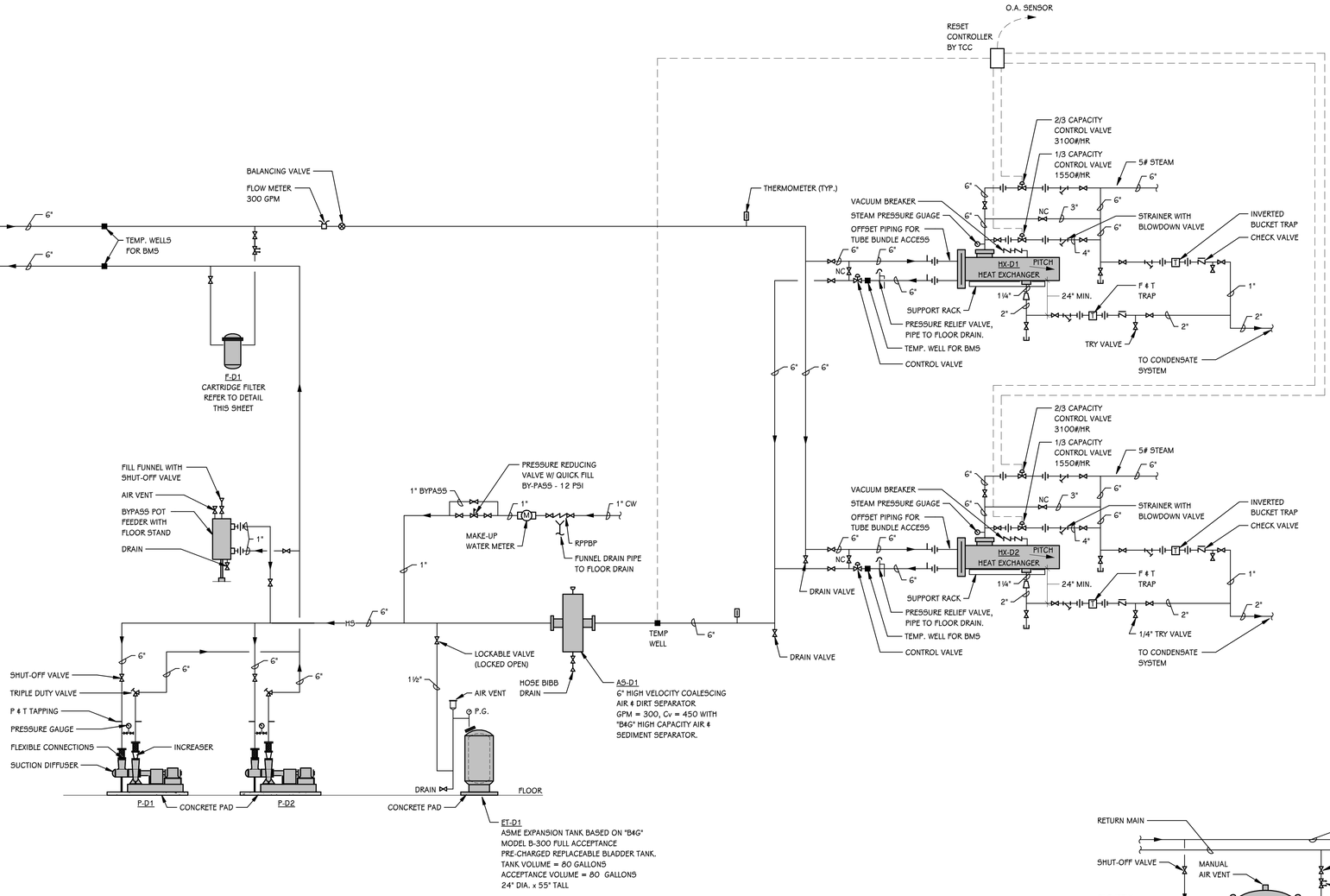
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
MECHANICAL SECTIONS

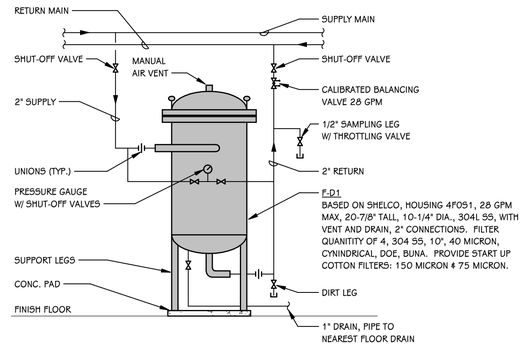
DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 310
21-807.00



UNITS A, B, & C HEATING WATER PIPING SCHEMATIC - HEAT EXCHANGER

SCALE: NONE



CARTRIDGE FILTER PIPING DETAIL

SCALE: NONE

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PROJECT

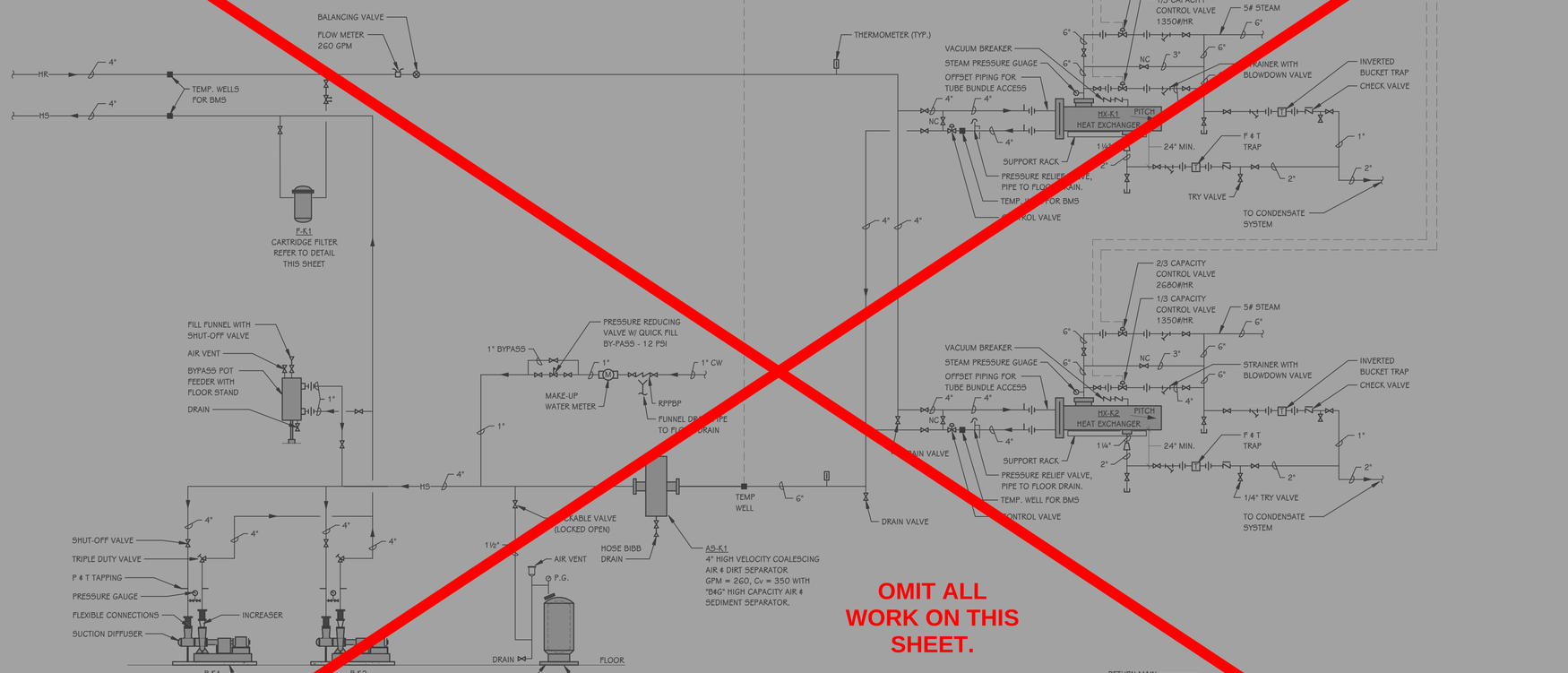
OWNER
KALAMAZOO PUBLIC
SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
MECHANICAL SCHEMATIC - UNITS A, B,
& C HEATING WATER

DATE
NOVEMBER 22, 2022

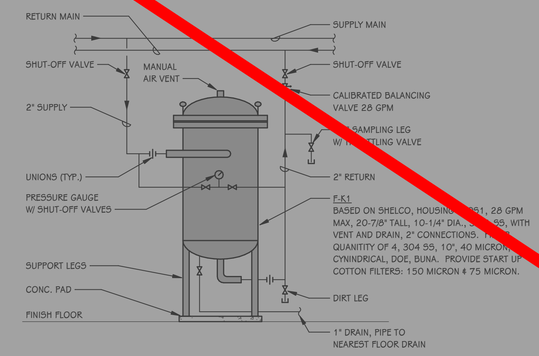
SHEET NUMBER
M 401
21-807.00



OMIT ALL WORK ON THIS SHEET.

UNIT K HEATING WATER PIPING SCHEMATIC - HEAT EXCHANGER

SCALE: NONE



CARTRIDGE FILTER PIPING DETAIL

SCALE: NONE

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SHEET TITLE
MECHANICAL SCHEMATIC - UNIT K HEATING WATER

DATE
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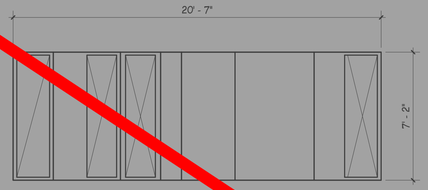


PLAN - TOP VIEW

ELEVATION - SIDE VIEW

AHU-K1

1/4" = 1'-0"

INDOOR VAV AIR HANDLING UNIT (AHU-K1)

BASED ON: CARRIER MODEL 39MN SIZE 25W
AREA SERVED: UNIT K LOWER LEVEL AND ADMINISTRATION.
TYPE: MODULAR, VARIABLE AIR VOLUME 12,000 CFM NOMINAL. UNIT TO BE BROUGHT INTO MECHANICAL ROOM IN SECTIONS AND TO BE ASSEMBLED IN PLACE.
OUTSIDE AIR: 1,200 - 3,600 CFM BASED ON CO2 READING.
WEIGHT: 5,400 LBS
UNIT MOUNTING: HOUSEKEEPING PAD.
ELECTRICAL: INDIVIDUAL FEEDS TO EACH MOTOR AND LIGHTING / OUTLET CIRCUIT.

ACOUSTICS (Hz/db):
DISCHARGE: 63/97, 125/99, 250/96, 500/102, 1K/92, 2K/90, 4K/88, 8K/90
INLET: 63/94, 125/95, 250/92, 500/94, 1K/89, 2K/83, 4K/82, 8K/84

MIXING BOX: TOP INSULATED AIRFOIL OPPOSED BLADE LOW-LEAK DAMPERS.

RETURN FANS: TWO DIRECT DRIVE FANS TOTALLING 12,000 CFM @ 1.0" ESP, 2178 FAN RPM, 3.1 BHP EACH, TWO 5 HP PREMIUM EFF. MOTOR, 460V/3/60HZ. INCLUDE VIEW WINDOW, LED MARINE LIGHT AND ACCESS DOOR. TWO VFDs BY TEMPERATURE CONTROLS CONTRACTOR.

MIXING BOX: OUTSIDE AIR DAMPERS BY TEMPERATURE CONTROLS CONTRACTOR.

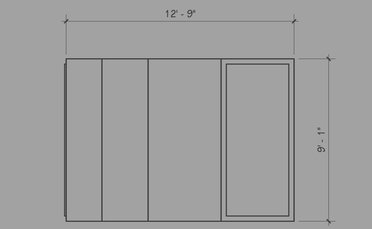
FILTERS: 2" PLEATED MERV-8 PRE-FILTER, MERV-13 FILTER, MAGNIHELIC DIFFERENTIAL PRESSURE GAGE 0-2" w.c.

HOT WATER COIL: 588 MBH, 43.8 GPM, 130.0 °F EWT, 110.0 °F LWT, -10°F EDB, 35°F LDB, 0.24" APD, 1.7' WPD MAX.

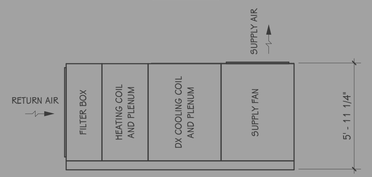
CHILLED WATER COIL: 488 TMBH, 316 SMBH, 79.3°F EDB, 67.7°F EWB, 55°F LDB, 55°F LWB, 45°F EWT, 55°F LWT, 97 GPM, 5.2' WPD, 1.4" APD, WITH 55 IAQ DRAIN PAN.

SUPPLY FANS: TWO DIRECT DRIVE FANS TOTALLING 12,000 CFM @ 2.5" ESP, 2707 FAN RPM, 7.3 BHP EACH, TWO 10 HP PREMIUM EFF. MOTOR, 460V/3/60HZ. INCLUDE VIEW WINDOW, LED MARINE LIGHT AND ACCESS DOOR. TWO VFDs BY TEMPERATURE CONTROLS CONTRACTOR.

BI-POLAR IONIZATION: INSTALL SALVAGED BI-POLAR IONIZATION FROM DEMO'D UNIT IN NEW UNIT.



PLAN - TOP VIEW



ELEVATION - SIDE VIEW

AHU-M1

1/4" = 1'-0"

INDOOR VAV AIR HANDLING UNIT (AHU-M1)

BASED ON: CARRIER MODEL 39MN SIZE 36W
AREA SERVED: UNIT M SHOP CLASSES
TYPE: MODULAR, VARIABLE AIR VOLUME 18,0[illegible] CFM NOMINAL. UNIT TO BE BROUGHT INTO MECHANICAL ROOM IN SECTIONS AND TO BE ASSEMBLED IN PLACE.
OUTSIDE AIR: 1,800 - 4,600 CFM BASED ON CO2 READING.
WEIGHT: 4,200 LBS
UNIT MOUNTING: HOUSEKEEPING PAD.
ELECTRICAL: INDIVIDUAL FEEDS TO EACH MOTOR AND LIGHTING / OUTLET CIRCUIT.

ACOUSTICS (Hz/db):
DISCHARGE: 63/96, 125/85, 250/100, 500/94, 1K/90, 2K/89, 4K/86, 8K/82
INLET: 63/91, 125/80, 250/91, 500/90, 1K/84, 2K/80, 4K/79, 8K/82

FILTER BOX: 2" PLEATED MERV-8 PRE-FILTER, MERV-13 FILTER, MAGNIHELIC DIFFERENTIAL PRESSURE GAGE 0-2" w.c.

HOT WATER COIL: 960 MBH, 58.6 GPM, 130.0 °F EWT, 100.0 °F LWT, -10°F EAT, 35°F LAT, 0.23" APD.

DX COOLING COIL: 691.98 TMBH, 486.65 SMBH, 80.1°F EDB, 66.0°F EWB, 55.4°F LDB, 53.2° F LWB, 0.59" APD, 500 FPM MAX FACE VELOCITY, WITH 55 IAQ DRAIN PAN. INCLUDE ACCESS DOOR WITH VIEW WINDOW AND LED MARINE LIGHT.

SUPPLY FANS: TWO DIRECT DRIVE FANS TOTALLING 18,000 CFM @ 2.0" ESP, 2057 FAN RPM, 8.2 BHP EACH, TWO 10 HP PREMIUM EFF. MOTOR, 460V/3/60HZ. INCLUDE VIEW WINDOW AND LED MARINE LIGHT AND ACCESS DOOR. TWO VFDs BY TEMPERATURE CONTROLS CONTRACTOR.

BI-POLAR IONIZATION: INSTALL SALVAGED BI-POLAR IONIZATION FROM DEMO'D UNIT IN NEW UNIT.

ACCU-M1: BASED ON "CARRIER" MODEL 38APD, DIGITAL SCROLL COMPRESSORS CONDENSING UNIT, 70 TON NOMINAL COOLING CAPACITY, 460/3/60, SINGLE POINT POWER, 4 CONDENSER FAN MOTORS, 11.0 EER @ ARI CONDITIONS, 127.9 [illegible], 150 MOCP. R-410A REFRIGERANT, FROSTAT, AND VIBRATION ISOLATORS, 2,600 LBS OPERATING WEIGHT, 9'-2.8"L x 7'-4.2"W x 6'-6.5"H.

OMIT ALL WORK ON THIS SHEET.

PLAN - TOP VIEW

ELEVATION - SIDE VIEW

AHU-C1

1/4" = 1'-0"

INDOOR VAV AIR HANDLING UNIT (AHU-C1)

BASED ON: CARRIER MODEL 39MN SIZE 08W
AREAS SERVED: COURTYARD GLASS - UNIT C
TYPE: MODULAR, CONSTANT AIR VOLUME, 3,700 CFM. UNIT TO BE BROUGHT INTO TUNNEL IN SECTIONS AND TO BE ASSEMBLED IN PLACE.
OUTSIDE AIR: NONE.
WEIGHT: 1,500 LBS
UNIT MOUNTING: HOUSEKEEPING PAD.
ELECTRICAL: INDIVIDUAL FEEDS TO EACH MOTOR AND LIGHTING / OUTLET CIRCUIT.
ACOUSTICS (Hz/db):
DISCHARGE: 63/60, 125/70, 250/75, 500/84, 1K/83, 2K/86, 4K/89, 8K/80
INLET: 63/59, 125/65, 250/69, 500/77, 1K/81, 2K/77, 4K/81, 8K/72

FILTERS: 2" PLEATED MERV-8 PRE-FILTER, MERV-13 FILTER, MAGNIHELIC DIFFERENTIAL PRESSURE GAGE 0-2" w.c.

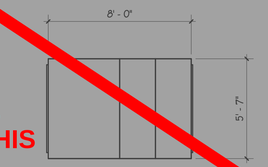
HOT WATER COIL: 120 MBH, 13 GPM, 130.0 °F EWT, 110.0 °F LWT, -10°F EDB, 95°F LDB, 0.36" APD.

DX COOLING COIL: 102.3 TMBH, 79.1 SMBH, 75°F EDB, 63.1°F EWB, 55.5°F LDB, 53.5°F LWB, 0.58" APD, 500 FPM MAX FACE VELOCITY, WITH 55 IAQ DRAIN PAN. INCLUDE ACCESS DOOR WITH VIEW WINDOW AND LED MARINE LIGHT.

SUPPLY FANS: ONE DIRECT DRIVE FAN 3,700 CFM @ 1.25" ESP, 2787 FAN RPM, 3.0 BHP, ONE 5 HP PREMIUM EFF. MOTOR, 460V/3/60HZ. INCLUDE VIEW WINDOW, LED MARINE LIGHT AND ACCESS DOOR RIGHT SIDE. VFD BY TEMPERATURE CONTROLS CONTRACTOR.

BI-POLAR IONIZATION: INSTALL SALVAGED BI-POLAR IONIZATION FROM DEMO'D UNIT IN NEW UNIT.

ACCU-C1: BASED ON "CARRIER" MODEL 38AUD DUAL DIGITAL SCROLL COMPRESSORS CONDENSING UNIT, 10 TON NOMINAL COOLING CAPACITY, 460/3/60, SINGLE POINT POWER, 2 CONDENSER FAN MOTORS, 12.4 EER @ ARI CONDITIONS, 22 MCA, 25 MOCP. R-410A REFRIGERANT, FROSTAT, AND VIBRATION ISOLATORS, 600 LBS OPERATING WEIGHT, 59.4"L x 45.9"W x 50.4"H.



PLAN - TOP VIEW

ELEVATION - SIDE VIEW

AHU-M2

1/4" = 1'-0"

INDOOR VAV AIR HANDLING UNIT (AHU-M2)

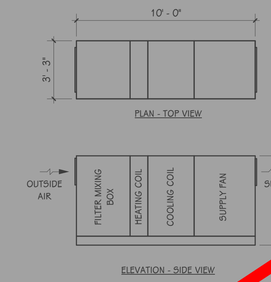
BASED ON: CARRIER MODEL 39MN SIZE 12W
AREA SERVED: UNIT M AUTO BODY PAINT BOOTH
TYPE: MODULAR, VARIABLE AIR VOLUME, 6,700 CFM NOMINAL.
OUTSIDE AIR: 6,700 CFM (100% OA)
WEIGHT: 1,500 LBS
UNIT MOUNTING: SUSPENDED FROM ROOF STRUCTURE.
ELECTRICAL: INDIVIDUAL FEEDS TO EACH MOTOR AND LIGHTING / OUTLET CIRCUIT.

ACOUSTICS (Hz/db):
DISCHARGE: 63/86, 125/85, 250/88, 500/81, 1K/78, 2K/77, 4K/75, 8K/73
INLET: 63/78, 125/84, 250/84, 500/78, 1K/69, 2K/69, 4K/67, 8K/64

FILTER BOX: 2" PLEATED MERV-8 PRE-FILTER, MERV-13 FILTER, MAGNIHELIC DIFFERENTIAL PRESSURE GAGE 0-2" w.c.

HOT WATER COIL: 557.4 MBH, 56.8 GPM, 130.0 °F EWT, 110.0 °F LWT, -10°F EAT, 67.1°F LAT, 0.35" APD.

SUPPLY FAN: ONE DIRECT DRIVE FAN 6,700 CFM @ 2.25" ESP, 1630 FAN RPM, 4.6 BHP, 5 HP PREMIUM EFF. MOTOR, 460V/3/60HZ. INCLUDE VIEW WINDOW, LED MARINE LIGHT AND ACCESS DOOR. VFD BY TEMPERATURE CONTROLS CONTRACTOR.



PLAN - TOP VIEW

ELEVATION - SIDE VIEW

AHU-L1

1/4" = 1'-0"

INDOOR VAV AIR HANDLING UNIT (AHU-L1)

BASED ON: CARRIER MODEL 39MN SIZE 07T
AREA SERVED: UNIT L STAIR TOWER
TYPE: MODULAR, SINGLE ZONE VARIABLE AIR VOLUME 3,600 CFM NOMINAL. UNIT TO BE BROUGHT INTO MECHANICAL ROOM IN SECTIONS AND TO BE ASSEMBLED IN PLACE.
OUTSIDE AIR: 3,600 CFM (100% OA)
WEIGHT: 6,300 LBS
UNIT MOUNTING: HOUSEKEEPING PAD.
ELECTRICAL: INDIVIDUAL FEEDS TO EACH MOTOR AND LIGHTING / OUTLET CIRCUIT.

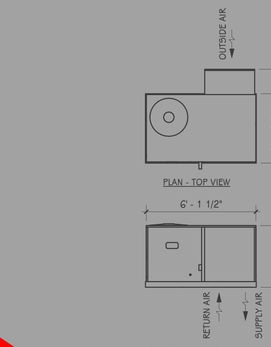
ACOUSTICS (Hz/db):
DISCHARGE: 63/88, 125/88, 250/86, 500/89, 1K/84, 2K/86, 4K/88, 8K/83
INLET: 63/87, 125/82, 250/81, 500/83, 1K/82, 2K/76, 4K/80, 8K/74

FILTER MIXING BOX: REAR STANDARD OPPOSED BLADE LOW-LEAK DAMPER, 2" PLEATED MERV-8 PRE-FILTER, MERV-13 FILTER, MAGNIHELIC DIFFERENTIAL PRESSURE GAGE 0-2" w.c.

HOT WATER COIL: 422.4 MBH, 28.4 GPM, 130.0 °F EWT, 110.0 °F LWT, -10°F EDB, 100°F LDB, 0.66" APD, 3.6' WPD MAX.

CHILLED WATER COIL: 214.1 TMBH, 128.5 SMBH, 95°F EDB, 76°F EWB, 59.6°F LDB, 58.1°F LWB, 45°F EWT, 55°F LWT, 42.7 GPM, 3' WPD, 1.18" APD, WITH 55 IAQ DRAIN PAN.

SUPPLY FAN: ONE DIRECT DRIVE FAN 3,600 CFM @ 1.75" ESP, 3015 FAN RPM, 4.2 BHP, 5 HP PREMIUM EFF. MOTOR, 460V/3/60HZ. INCLUDE VIEW WINDOW, LED MARINE LIGHT AND ACCESS DOOR. VFD BY TEMPERATURE CONTROLS CONTRACTOR.



PLAN - TOP VIEW

ELEVATION - SIDE VIEW

RTU-C1 AND M1

1/4" = 1'-0"

PACKAGED ROOFTOP AIR HANDLING UNIT (RTU-C1 AND M1)

TYPE: ROOFTOP SINGLE ZONE, CONSTANT VOLUME, NATURAL GAS HEATING, DX COOLING, DOWNWARD DISCHARGE
AREA SERVED: CHEMISTRY C17 AND CLASSROOM M14
MANUFACTURER: BASED ON "CARRIER" MODEL 48JCUV05B3AG - SIZE 05 (4 TON)
WEIGHT: 750 LB
OUTSIDE AIR: 530 CFM
LOCATION: ROOFTOP
UNIT MOUNTING: PROVIDE WITH CURB ADAPTER FOR MOUNTING ON EXIST. ROOF CURB

FILTER SECTION: 2" PLEATED MERV 8 FILTERS

DX COOLING SECTION: 60 TMBH, 37 SMBH, 79.7°F EDB, 67.9°F EWB, 56.0°F LDB, [illegible]°F LWB, R-410A REFRIGERANT, 2 STAGE.

NATURAL GAS HEATING SECTION: 110 MBH INPUT, 88 MBH OUTPUT, 46.8°F EAT. 99.2°F LAT.

SUPPLY FAN: ONE FAN @ 2 HP, 1.15 BHP, 1600 CFM @ 1.25" ESP, 1.32" TSP, 2225 FAN RPM, 460/3/60 PREMIUM EFFICIENCY FOR USE WITH VFD, VFD PROVIDED BY TEMPERATURE CONTROLS CONTRACTOR.

ELECTRICAL: SINGLE-POINT POWER CONNECTION WITH FACTORY FUSED DISCONNECT W/ LOCKING HANDLE, 460/3/60, 45 LRA, 16 FLA, 16 MCA, 20 MOCP, AND DEDICATED 120/1/60 POWER CONNECTION FOR CONVENIENCE RECEPTACLE AND LIGHTS.

OPTIONS: PROVIDE WITH MINIMUM 5 YEAR MANUFACTURE'S WARRANTY, DUCT DETECTORS, & CONVENIENCE RECEPTACLE.

BI-POLAR IONIZATION: INSTALL SALVAGED BI-POLAR IONIZATION FROM DEMO'D UNIT IN NEW UNIT.

TowerPinkster
Architecture · Engineering · Interiors
CITY OF KNOWLEDGE
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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
MECHANICAL SCHEDULES AND DETAILS

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 501
21-807.00

AIR COOLED CONDENSING UNITS (UNITS A & B) - PRE-PURCHASED — **BASED ON YORK**

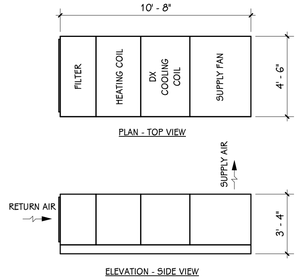
MARK	MODEL	NOMINAL COOLING CAPACITY (BTUH)	ELECTRICAL				REMARKS
			MOCP	MCA	VOLTAGE	PHASE	
ACCU-170	YCE18	18,000	20 A	12.7 A	208 V	1	
ACCU-173	YCE24	24,000	25 A	14.8 A	208 V	1	
ACCU-179	YCE24	24,000	25 A	14.8 A	208 V	1	
ACCU-187	YCE24	24,000	25 A	14.8 A	208 V	1	
ACCU-188	YCE24	24,000	25 A	14.8 A	208 V	1	
ACCU-195	YCE18	18,000	20 A	12.7 A	208 V	1	
ACCU-A1							REFER TO AHU-A1 SCHEDULE ON SHEET M501
ACCU-A10	YCE48 (2-STAGE)	48,000	45 A	30.0 A	208 V	1	
ACCU-A12A	YCE30 (2-STAGE)	30,000	30 A	18.4 A	208 V	1	
ACCU-A12B	YCE30 (2-STAGE)	30,000	30 A	18.4 A	208 V	1	
ACCU-A13	YCE24	24,000	25 A	14.8 A	208 V	1	
ACCU-A14A	YCE30 (2-STAGE)	30,000	30 A	18.4 A	208 V	1	
ACCU-A14B	YCE30 (2-STAGE)	30,000	30 A	18.4 A	208 V	1	
ACCU-A15	YCE30 (2-STAGE)	30,000	30 A	18.4 A	208 V	1	
ACCU-A16	YCE30 (2-STAGE)	30,000	30 A	18.4 A	208 V	1	
ACCU-A17	YCE48 (2-STAGE)	48,000	45 A	30.0 A	208 V	1	
ACCU-A18	YCE30 (2-STAGE)	30,000	30 A	18.4 A	208 V	1	
ACCU-A19	YCE30 (2-STAGE)	30,000	30 A	18.4 A	208 V	1	
ACCU-A20A	YCE24	24,000	25 A	14.8 A	208 V	1	
ACCU-A20B	YCE24	24,000	25 A	14.8 A	208 V	1	
ACCU-A21A	YCE24	24,000	25 A	14.8 A	208 V	1	
ACCU-A21B	YCE24	24,000	25 A	14.8 A	208 V	1	
ACCU-B1							REFER TO AHU-B1 SCHEDULE ON SHEET M501
ACCU-B10	YCE30 (2-STAGE)	30,000	30 A	18.4 A	208 V	1	
ACCU-B11	YCE24	24,000	25 A	14.8 A	208 V	1	
ACCU-B12	YCE30 (2-STAGE)	30,000	30 A	18.4 A	208 V	1	
ACCU-B13	YCE24	24,000	25 A	14.8 A	208 V	1	
ACCU-B14	YCE30 (2-STAGE)	30,000	30 A	18.4 A	208 V	1	
ACCU-B15	YCE30 (2-STAGE)	30,000	30 A	18.4 A	208 V	1	
ACCU-B16	YCE24	24,000	25 A	14.8 A	208 V	1	
ACCU-B17	YCE48 (2-STAGE)	48,000	45 A	30.0 A	208 V	1	
ACCU-B18	YCE30 (2-STAGE)	30,000	30 A	18.4 A	208 V	1	
ACCU-B19	YCE30 (2-STAGE)	30,000	30 A	18.4 A	208 V	1	
ACCU-B20	YCE48 (2-STAGE)	48,000	45 A	30.0 A	208 V	1	
ACCU-B21	YCE30 (2-STAGE)	30,000	30 A	18.4 A	208 V	1	
ACCU-B22	YCE30 (2-STAGE)	30,000	30 A	18.4 A	208 V	1	
ACCU-B23	YCE30 (2-STAGE)	30,000	30 A	18.4 A	208 V	1	

UNIT VENTILATOR - HOT WATER HEAT / DX COOLING (UNITS A & B) - PRE-PURCHASED — **BASED ON "AIREDALE"**

MARK	MODEL	TYPE	CABINET		S.A. FAN				HOT WATER COIL (1)					DX COOLING COIL						REMARKS
			RA INLET	OA LOUVER	SUPPLY CFM	O.A. CFM	HP	VOLTAGE	MBH	GPM	EAT	WPD	ROWS	TMBH	SMBH	EDB	EWB	LDB	LWB	
HUV-170	ZCV750	CEILING MTD.	(3)	(3)	750	225	1/2	208/1/60	42.7	0	42.0	0	0	19.1	12.5	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(6) NO HEATING COIL
HUV-173	ZFV1000	UNDER WINDOW	BOTTOM	BACK	1000	300	1/4	208/1/60	49.7	3.8	42.0	6.5	2	27.6	19.0	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-179	ZCV1000	ABOVE CEILING	(2)	(2)	1000	300	1/2	208/1/60	49.7	3.8	42.0	1.0	2	27.6	19.0	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(6)(7)
HUV-187	ZFV1000	UNDER WINDOW	BOTTOM	BACK	1000	300	1/4	208/1/60	49.7	3.8	42.0	6.5	2	27.6	19.0	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-188	ZCV1000	ABOVE CEILING	(2)	(2)	1000	300	1/2	208/1/60	49.7	3.8	42.0	1.0	2	27.6	19.0	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(6)(7)
HUV-195	ZCV750	CEILING MTD.	(3)	(3)	750	225	1/2	208/1/60	42.7	0	42.0	0	0	19.1	12.5	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(6) NO HEATING COIL
HUV-A10	ZFV1500	UNDER WINDOW	BOTTOM	BACK	1500	450	1/4	208/1/60	78.6	5.7	42.0	6.5	2	39.8	28.0	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-A12A	ZFV1250	UNDER WINDOW	BOTTOM	BACK	1250	375	1/4	208/1/60	63.7	4.7	42.0	6.5	2	32.5	23.4	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-A12B	ZFV1250	UNDER WINDOW	BOTTOM	BACK	1250	375	1/4	208/1/60	63.7	4.7	42.0	6.5	2	32.5	23.4	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-A13	ZFV1000	UNDER WINDOW	BOTTOM	BACK	1000	300	1/4	208/1/60	49.7	3.8	42.0	6.5	2	27.6	19.0	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-A14A	ZFV1250	UNDER WINDOW	BOTTOM	BACK	1250	375	1/4	208/1/60	63.7	4.7	42.0	6.5	2	32.5	23.4	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-A14B	ZFV1250	UNDER WINDOW	BOTTOM	BACK	1250	375	1/4	208/1/60	63.7	4.7	42.0	6.5	2	32.5	23.4	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-A15	ZFV1250	UNDER WINDOW	BOTTOM	BACK	1250	375	1/4	208/1/60	63.7	4.7	42.0	6.5	2	32.5	23.4	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-A16	ZFV1250	UNDER WINDOW	BOTTOM	BACK	1250	375	1/4	208/1/60	63.7	4.7	42.0	6.5	2	32.5	23.4	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-A17	ZFV1500	UNDER WINDOW	BOTTOM	BACK	1500	450	1/4	208/1/60	78.6	5.7	42.0	6.5	2	39.8	28.0	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-A18	ZFV1250	UNDER WINDOW	BOTTOM	BACK	1250	375	1/4	208/1/60	63.7	4.7	42.0	6.5	2	32.5	23.4	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-A19	ZFV1250	UNDER WINDOW	BOTTOM	BACK	1250	375	1/4	208/1/60	63.7	4.7	42.0	6.5	2	32.5	23.4	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-A20A	ZFV1000	UNDER WINDOW	BOTTOM	BACK	1000	300	1/4	208/1/60	49.7	3.8	42.0	6.5	2	27.6	19.0	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-A20B	ZFV1000	UNDER WINDOW	BOTTOM	BACK	1000	300	1/4	208/1/60	49.7	3.8	42.0	6.5	2	27.6	19.0	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-A21A	ZFV1000	UNDER WINDOW	BOTTOM	BACK	1000	300	1/4	208/1/60	49.7	3.8	42.0	6.5	2	27.6	19.0	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)(7)
HUV-A21B	ZFV1000	UNDER WINDOW	BOTTOM	BACK	1000	300	1/4	208/1/60	49.7	3.8	42.0	6.5	2	27.6	19.0	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)(7)
HUV-B10	ZFV1250	UNDER WINDOW	BOTTOM	BACK	1250	375	1/4	208/1/60	63.7	4.7	42.0	6.5	2	32.5	23.4	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-B11	ZFV1000	UNDER WINDOW	BOTTOM	BACK	1000	300	1/4	208/1/60	49.7	3.8	42.0	6.5	2	27.6	19.0	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-B12	ZFV1250	UNDER WINDOW	BOTTOM	BACK	1250	375	1/4	208/1/60	63.7	4.7	42.0	6.5	2	32.5	23.4	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-B13	ZFV1000	UNDER WINDOW	BOTTOM	BACK	1000	300	1/4	208/1/60	49.7	3.8	42.0	6.5	2	27.6	19.0	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-B14	ZFV1250	UNDER WINDOW	BOTTOM	BACK	1250	375	1/4	208/1/60	63.7	4.7	42.0	6.5	2	32.5	23.4	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-B15	ZFV1250	UNDER WINDOW	BOTTOM	BACK	1250	375	1/4	208/1/60	63.7	4.7	42.0	6.5	2	32.5	23.4	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-B16	ZFV1000	UNDER WINDOW	BOTTOM	BACK	1000	300	1/4	208/1/60	49.7	3.8	42.0	6.5	2	27.6	19.0	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-B17	ZFV1500	UNDER WINDOW	BOTTOM	BACK	1500	450	1/4	208/1/60	78.6	5.7	42.0	6.5	2	39.8	28.0	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-B18	ZFV1250	UNDER WINDOW	BOTTOM	BACK	1250	375	1/4	208/1/60	63.7	4.7	42.0	6.5	2	32.5	23.4	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-B19	ZFV1250	UNDER WINDOW	BOTTOM	BACK	1250	375	1/4	208/1/60	63.7	4.7	42.0	6.5	2	32.5	23.4	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-B20	ZFV1500	UNDER WINDOW	BOTTOM	BACK	1500	450	1/4	208/1/60	78.6	5.7	42.0	6.5	2	39.8	28.0	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-B21	ZFV1250	UNDER WINDOW	BOTTOM	BACK	1250	375	1/4	208/1/60	63.7	4.7	42.0	6.5	2	32.5	23.4	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)
HUV-B22	ZFV1250	UNDER WINDOW	BOTTOM	BACK	1250	375	1/4	208/1/60	63.7	4.7	42.0	6.5	2	32.5	23.4	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)(7)
HUV-B23	ZFV1250	UNDER WINDOW	BOTTOM	BACK	1250	375	1/4	208/1/60	63.7	4.7	42.0	6.5	2	32.5	23.4	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(6)(7)

NOTES:

1. BASED ON 130°F EWT, 30°F dT.
2. UNIT IS CONCEALED ABOVE CEILING WITH FRONT DISHCARGE WITH DUCT COLLAR, REAR RETURN AIR AND REAR OUTSIDE AIR.
3. UNIT IS CELING (FLUSH) MOUNTED WITH FRONT DISCHARGE WITH DUCT COLLAR, BOTTOM RETURN AIR AND TOP OUTSIDE AIR.
4. PROVIDE UNIT WITH OPTIONAL 6" HIGH SUB-BASE & ALL APPLICABLE FILLER SECTIONS.
5. UNIT IS CONCEALED IN CASEWORK. DISCHARGE AIR OPENING TO BE DUCTED IN FIELD TO COUNTERTOP MOUNTED SUPPLY AIR GRILLE.
6. INSTALL SALVAGED BI-POLAR IONIZATION DEVICE IN NEW UNIT.
7. PROVIDE WITH 3-WAY CONTROL VALVE.



AHU-A1 AND AHU-B1 - PRE-PURCHASED

1/4" = 1'-0"

INDOOR VAV AIR HANDLING UNIT (AHU-A1 AND AHU-B1)

BASED ON: CARRIER MODEL 39MN SIZE 08W
AREAS SERVED: COURTYARD GLASS - UNITS A AND B
TYPE: MODULAR, CONSTANT AIR VOLUME, 3,700 CFM. UNIT TO BE BROUGHT INTO TUNNEL IN SECTIONS AND TO BE ASSEMBLED IN PLACE.
OUTSIDE AIR: NONE.
WEIGHT: 1,500 LBS
UNIT MOUNTING: HOUSEKEEPING PAD.
ELECTRICAL: INDIVIDUAL FEEDS TO EACH MOTOR AND LIGHTING / OUTLET CIRCUIT.
ACOUSTICS (Hz/db):
DISCHARGE: 63/60, 125/70, 250/75, 500/84, 1K/83, 2K/86, 4K/89, 8K/80
INLET: 63/59, 125/65, 250/69, 500/77, 1K/81, 2K/77, 4K/81, 8K/72

FILTERS: 2" PLEATED MERV-8 PRE-FILTER, MERV-13 FILTER, MAGNIHELIC DIFFERENTIAL PRESSURE GAGE 0-2" w.c.

HOT WATER COIL: 120 MBH, 13 GPM, 130.0 °F EWT, 110.0 °F LWT, 65°F EDB, 95°F LDB, 0.36" APD.

DX COOLING COIL: 102.3 TMBH, 79.1 SMBH, 75°F EDB, 63°F EWB, 55.5°F LDB, 53.5°F LWB, 0.58" APD, 500 FPM MAX FACE VELOCITY, WITH 95 IAQ DRAIN PAN. INCLUDE ACCESS DOOR WITH VIEW WINDOW AND LED MARINE LIGHT.

SUPPLY FANS: ONE DIRECT DRIVE FAN 3700 CFM @ 1.25" ESP, 2787 FAN RPM, 3.0 BHP, ONE 5 HP PREMIUM EFF. MOTOR, 460V/3/60HZ. INCLUDE VIEW WINDOW, LED MARINE LIGHT AND ACCESS DOOR RIGHT SIDE. VFD BY TEMPERATURE CONTROLS CONTRACTOR.

BI-POLAR IONIZATION: INSTALL SALVAGED BI-POLAR IONIZATION FROM DEMO'D UNIT IN NEW UNIT.

ACCU-A1 AND B1: BASED ON "CARRIER" MODEL 38AUD DUAL DIGITAL SCROLL COMPRESSORS CONDENSING UNIT, 10 TON NOMINAL COOLING CAPACITY, 460/3/60, SINGLE POINT POWER, 2 CONDENSER FAN MOTORS, 12.4 EER @ ARI CONDITIONS, 22 MCA, 25 MOCP. R-410A REFRIGERANT, FROSTAT, AND VIBRATION ISOLATORS, 600 LBS OPERATING WEIGHT, 59.4"L x 45.9"W x 50.4"H.

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Addendum No. 2 December 16, 2022

ISSUED FOR — DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
MECHANICAL SCHEDULES - PRE-PURCHASED EQUIPMENT

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 502
21-807.00

GRILLES, REGISTERS, & DIFFUSERS

BASED ON PRICE

MARK	PANEL SIZE	FACE SIZE	NECK SIZE	MODEL	CFM RANGE	VCD	THROW	MATERIAL	FINISH	INSTALLATION	REMARKS
SA-1	24x24	-	6" Ø	A5CDA	120-200	NO	4-WAY	ALUMINUM	WHITE	LAY-IN	
SA-2	24x24	-	8" Ø	A5CDA	175-315	NO	4-WAY	ALUMINUM	WHITE	LAY-IN	
SA-3	24x24	-	10" Ø	A5CDA	225-350	NO	4-WAY	ALUMINUM	WHITE	LAY-IN	
SA-4	48" LONG	4-SLOTS	10"Ø	SD575	250-320	NO	11' @ 20" DT	ALUMINUM	WHITE	LAY-IN	
SA-5	-	-	8"x4"	620	125-145	NO	DBL. DEFL.	ALUMINUM	WHITE	SURFACE	
SA-6	-	-	14"x4"	620	180-225	YES	DBL. DEFL.	ALUMINUM	CLR ANODIZED	DUCT MTD.	
SA-7	-	-	14"x4"	620	180-225	YES	DBL. DEFL.	ALUMINUM	WHITE	SURFACE	
SA-8	-	-	14"x6"	620	275-350	YES	DBL. DEFL.	ALUMINUM	WHITE	SURFACE	
SA-9	-	-	24"x12"	620	900-1100	YES	DBL. DEFL.	ALUMINUM	WHITE	DUCT MTD.	
RA-1	12"x12"	-	-	80	0 - 500	NO	-	ALUMINUM	WHITE	SURFACE	
RA-2	24"x24"	-	22"x22"	80	500 - 2000	NO	-	ALUMINUM	WHITE	LAY-IN	
RA-3	-	-	24"x8"	610Z	600	NO	-	ALUMINUM	WHITE	SURFACE	
RA-4	-	-	24"x20"	535	900	NO	-	STEEL	WHITE	SURFACE	
RA-5	-	-	18"x14"	535	450	NO	-	STEEL	WHITE	SURFACE	
RA-6	-	-	34"x16"	635	1300	NO	-	ALUMINUM	WHITE	SURFACE	
EA-1	12"x12"	-	12"x12"	80	0-500	NO	-	ALUMINUM	WHITE	SURFACE	
EA-3	-	-	14"x14"	635	-	NO	-	ALUMINUM	WHITE	SURFACE	
TA-1	-	-	20"x80"	535	0-1300	NO	-	STEEL	WHITE	SURFACE	

FINNED TUBE RADIATION - WATER

BASED ON VULCAN

MARK	MODEL	HEATING ELEMENT (1) SIZE	ROWS	LENGTH (2)	EWT (°F)	CAPACITY (BTUH/FT)	FLOW (GPM)	COVER TYPE	HEIGHT	FINISH	MOUNT HEIGHT	REMARKS
FR-A1	VC3/4-44	¾"C - 4¼"x4¼" - 40/.020	3	60' - 0"	130 °F	1210	3	LV4-524	2' - 0"	(3)	28"	
FR-B1	VC3/4-44	¾"C - 4¼"x4¼" - 40/.020	3	60' - 0"	130 °F	1210	3	LV4-524	2' - 0"	(3)	28"	
FR-B2	VC3/4-44	¾"C - 4¼"x4¼" - 40/.020	3	26' - 0"	130 °F	1210	3	LV4-524	2' - 0"	(3)	28"	
FR-C1	VC3/4-44	¾"C - 4¼"x4¼" - 40/.020	3	59' - 0"	130 °F	1210	3	LV4-524	2' - 0"	(3)	28"	
FR-K1	VC3/4-44	¾"C - 4¼"x4¼" - 40/.020	3	8' - 0"	130 °F	1210	3	LV4-524	2' - 0"	(3)	28"	
FR-K2	VC3/4-44	¾"C - 4¼"x4¼" - 40/.020	3	8' - 0"	130 °F	1210	3	LV4-524	2' - 0"	(3)	28"	
FR-K3	VC3/4-44	¾"C - 4¼"x4¼" - 40/.020	3	9' - 0"	130 °F	1210	3	LV4-524	2' - 0"	(3)	28"	
FR-M1	VC45	1"C - 4¼"x4¼" - 50/.020	2	19' - 11"	130 °F	950	6	LV4-PM2	2' - 0"	(3)	11"	
FR-M2	VC45	1"C - 4¼"x4¼" - 50/.020	2	19' - 6"	130 °F	950	6	LV4-PM2	2' - 0"	(3)	11"	
FR-M3	VC45	1"C - 4¼"x4¼" - 50/.020	2	19' - 11"	130 °F	950	6	LV4-PM2	2' - 0"	(3)	11"	
FR-M4	VC3/4-44	¾"C - 4¼"x4¼" - 40/.020	3	24' - 5"	130 °F	1210	3	LV4-524	2' - 0"	(3)	11"	
FR-M5	VC3/4-44	¾"C - 4¼"x4¼" - 40/.020	3	11' - 6"	130 °F	1210	3	LV4-524	2' - 0"	(3)	28"	
FR-M6	VC3/4-44	¾"C - 4¼"x4¼" - 40/.020	3	14' - 0"	130 °F	1210	3	LV4-524	2' - 0"	(3)	28"	
FR-M7	VC3/4-44	¾"C - 4¼"x4¼" - 40/.020	3	5' - 0"	130 °F	1210	3	LV4-524	2' - 0"	(3)	28"	
FR-M8	VC3/4-44	¾"C - 4¼"x4¼" - 40/.020	3	6' - 0"	130 °F	1210	3	LV4-524	2' - 0"	(3)	(4)	
FR-M9	VC3/4-44	¾"C - 4¼"x4¼" - 40/.020	3	34' - 0"	130 °F	1210	3	LV4-524	2' - 0"	(3)	28"	
FR-M10A	VC3/4-44	¾"C - 4¼"x4¼" - 40/.020	3	44' - 0"	130 °F	1210	3	LV4-524	2' - 0"	(3)	28"	
FR-M10B	VC3/4-44	¾"C - 4¼"x4¼" - 40/.020	3	44' - 0"	130 °F	1210	3	LV4-524	2' - 0"	(3)	28"	
FR-M10C	VC3/4-44	¾"C - 4¼"x4¼" - 40/.020	3	44' - 0"	130 °F	1210	3	LV4-524	2' - 0"	(3)	28"	
FR-M11	VC3/4-44	¾"C - 4¼"x4¼" - 40/.020	3	8' - 0"	130 °F	1210	3	LV4-524	2' - 0"	(3)	28"	
FR-M12	VC3/4-44	¾"C - 4¼"x4¼" - 40/.020	3	5' - 6"	130 °F	1210	3	LV4-524	2' - 0"	(3)	28"	

NOTES:

1 BASED ON 130°F EWT, 110°F LWT, AND 65° F EAT.
2 LENGHTS ARE APPROXIMATE. FINAL ELEMENT LENGTHS ARE TO BE MEASURED IN FIELD.
3 COLOR TO BE SELECTED BY ARCHITECT FROM MANUFACTURES FULL RANGE OF STANDARD COLORS.
4 FIN TUBE RADIATION IS MOUNTED ABOVE DOORS WITH INVERTED ENCLOSURE.

OUTDOOR AIR INTAKE / RELIEF HOODS

BASED ON GREENHECK

MARK	MODEL	THROAT SIZE	HOOD SIZE	CURB HEIGHT	AIR FLOW (CFM)	MAX APD (IN WC)	CONTROL DAMPER	REMARKS
OAI-324	FGI	12"x24"	24"x36"	3' - 5"	800	0.05	No	
OAI-K11	FGI	18"x18"	28"x36"	3' - 5"	1,100	0.05	No	
OAI-K12	FGI	18"x18"	28"x36"	3' - 5"	1,100	0.05	No	
OAI-K13	FGI	18"x18"	28"x36"	3' - 5"	1,100	0.05	No	
OAI-K15	FGI	18"x18"	28"x36"	3' - 5"	1,100	0.05	No	
OAI-K16	FGI	18"x18"	28"x36"	3' - 5"	1,100	0.05	No	
RH-324	FGR	16"x16"	26"x36"	2' - 6"	800	0.07	Yes	
RH-A1	FGR	18"x18"	28"x36"	2' - 6"	1,250	0.07	Yes	
RH-A2	FGR	18"x18"	28"x36"	2' - 6"	1,250	0.07	Yes	
RH-A3	FGR	18"x18"	28"x36"	2' - 6"	1,250	0.07	Yes	
RH-A4	FGR	18"x18"	28"x36"	2' - 6"	1,250	0.07	Yes	
RH-A5	FGR	18"x18"	28"x36"	2' - 6"	1,250	0.07	Yes	
RH-A6	FGR	18"x18"	28"x36"	2' - 6"	1,250	0.07	Yes	
RH-A7	FGR	18"x18"	28"x36"	2' - 6"	1,250	0.07	Yes	
RH-A8	FGR	18"x18"	28"x36"	2' - 6"	1,250	0.07	Yes	
RH-B1	FGR	18"x18"	28"x36"	2' - 6"	1,250	0.07	Yes	
RH-B2	FGR	18"x18"	28"x36"	2' - 6"	1,250	0.07	Yes	
RH-B3	FGR	18"x18"	28"x36"	2' - 6"	1,250	0.07	Yes	
RH-B4	FGR	18"x18"	28"x36"	2' - 6"	1,250	0.07	Yes	
RH-B5	FGR	18"x18"	28"x36"	2' - 6"	1,250	0.07	Yes	
RH-B6	FGR	18"x18"	28"x36"	2' - 6"	1,250	0.07	Yes	
RH-C1	FGR	18"x18"	28"x36"	2' - 6"	1,250	0.07	Yes	
RH-C2	FGR	18"x18"	28"x36"	2' - 6"	1,250	0.07	Yes	
RH-C3	FGR	18"x18"	28"x36"	2' - 6"	1,250	0.07	Yes	
RH-C4	FGR	18"x18"	28"x36"	2' - 6"	1,250	0.07	Yes	
RH-C5	FGR	18"x18"	28"x36"	2' - 6"	1,250	0.07	Yes	
RH-C6	FGR	18"x18"	28"x36"	2' - 6"	1,250	0.07	Yes	
RH-C7	FGR	18"x18"	28"x36"	2' - 6"	1,250	0.07	Yes	
RH-K11	FGR	16"x16"	26"x36"	3' - 5"	1,100	0.07	Yes	
RH-K12	FGR	16"x16"	26"x36"	3' - 5"	1,100	0.07	Yes	
RH-K13	FGR	16"x16"	26"x36"	3' - 5"	1,100	0.07	Yes	
RH-K14	FGR	16"x16"	26"x36"	3' - 5"	1,100	0.07	Yes	
RH-K15	FGR	16"x16"	26"x36"	3' - 5"	1,100	0.07	Yes	
RH-K16	FGR	16"x16"	26"x36"	3' - 5"	1,100	0.07	Yes	
RH-M4	FGR	42"x62"	62"x84"	3' - 5"	9,000	0.07	Yes	
RH-M5	FGR	42"x62"	62"x84"	3' - 5"	9,000	0.07	Yes	

TERMINAL UNITS

BASED ON PRICE

MARK	MAX CFM	TYPE	NC (MAX)	SP DROP (MAX)	INLET SIZE	REHEAT COIL (1) MBH	TR	W.P.D.	GPM	MIN CFM CLG	HTG	REMARKS
TU-K1	800	SDV	25	0.4"	12	39.1	45	5' MAX	4.00	400	267	(1)
TU-K2	800	SDV	25	0.4"	12	39.1	45	5' MAX	4.00	400	267	(1)
TU-K3	1,300	SDV	25	0.4"	14	63.5	45	5' MAX	6.25	650	433	(1)
TU-K9	180	SDV	25	0.4"	06	8.8	45	5' MAX	1.00	90	60	
TU-K10	900	SDV	25	0.4"	14	43.9	45	5' MAX	4.50	450	300	
TU-K32	200	SDV	25	0.4"	05	9.8	45	5' MAX	1.00	100	67	
TU-K34	750	SDV	25	0.4"	12	36.6	45	5' MAX	3.75	375	250	
TU-K283	600	SDV	25	0.4"	10	29.3	45	5' MAX	3.00	300	200	
TU-K285	825	SDV	25	0.4"	12	40.3	45	5' MAX	4.00	413	275	
TU-K289A	800	SDV	25	0.4"	12	39.1	45	5' MAX	4.00	400	267	
TU-K289B	400	SDV	25	0.4"	08	19.5	45	5' MAX	2.00	200	133	
TU-K290	100	SDV	25	0.4"	04	4.9	45	5' MAX	0.50	50	33	
TU-K291A	650	SDV	25	0.4"	10	31.7	45	5' MAX	3.25	325	217	
TU-K291B	650	SDV	25	0.4"	10	31.7	45	5' MAX	3.25	325	217	
TU-K295	785	SDV	25	0.4"	12	38.3	45	5' MAX	3.75	393	262	
TU-K298	975	SDV	25	0.4"	14	47.6	45	5' MAX	4.75	488	325	
TU-K305	500	SDV	25	0.4"	09	24.4	45	5' MAX	2.50	250	167	
TU-K311	300	SDV	25	0.4"	06	14.6	45	5' MAX	1.50	150	100	
TU-K335	450	SDV	25	0.4"	08	22.0	45	5' MAX	2.25	225	150	
TU-K419	720	SDV	25	0.4"	12	35.2	45	5' MAX	3.50	360	240	
TU-M1	750	SDV	25	0.4"	12	36.6	45	5' MAX	3.75	375	250	
TU-M2	750	SDV	25	0.4"	12	36.6	45	5' MAX	3.75	375	250	
TU-M2A	3,000	SDV	25	0.4"	24x16	146.5	45	5' MAX	14.75	1500	1000	
TU-M2B	3,000	SDV	25	0.4"	24x16	146.5	45	5' MAX	14.75	1500	1000	
TU-M3	1,200	SDV	25	0.4"	14	58.6	45	5' MAX	5.75	600	400	
TU-M4A	3,000	SDV	25	0.4"	24x16	146.5	45	5' MAX	14.75	1500	1000	
TU-M4B	3,000	SDV	25	0.4"	24x16	146.5	45	5' MAX	14.75	1500	1000	
TU-M5A	3,000	SDV	25	0.4"	24x16	146.5	45	5' MAX	14.75	1500	1000	
TU-M5B	3,000	SDV	25	0.4"	24x16	146.5	45	5' MAX	14.75	1500	1000	
TU-M6A	3,000	SDV	25	0.4"	24x16	146.5	45	5' MAX	14.75	1500	1000	
TU-M6B	3,000	SDV	25	0.4"	24x16	146.5	45	5' MAX	14.75	1500	1000	

NOTES:

1 REHEAT COIL SIZING BASED ON 130°F EWT, 110°F LWT, W/ BOX AT MAXIMUM FLOW.
2 PROVIDE WITH 3-WAY CONTROL VALVE.

EXHAUST FANS

BASED ON GREENHECK

MARK	MODEL	TYPE	AIR FLOW (CFM)	ESP (IN WC)	SONES	MOTOR EC MOTOR	NOMINAL HP	BRAKE HP	RPM	VOLTAGE	REMARKS
EF-A1	G-180-VG	DOWNBLAST	1795	0.38	6.5	Yes	0.75	0.18	900	208/1	(1)(2)(3)
EF-A2	G-140-VG	DOWNBLAST	1500	0.25	7.7	Yes	0.5	0.17	1200	120/1	(1)(2)(3)(4)
EF-A3	CUE-099-VG	UPBLAST	600	0.35	6.2	Yes	0.25	0.08	1183	120/1	(1)(2)(3)(5) SERVES FUME HOOD
EF-A4	G-060-VG	DOWNBLAST	150	0.25	4.6	Yes	0.07	0.02	1725	120/1	(1)(2)(3)
EF-B1	G-180-VG	DOWNBLAST	1795	0.38	6.5	Yes	0.75	0.18	900	208/1	(1)(2)(3)
EF-B2	G-140-VG	DOWNBLAST	1500	0.25	7.7	Yes	0.5	0.17	1200	120/1	(1)(2)(3)(4)
EF-B3	G-095-VG	DOWNBLAST	600	0.25	6.1	Yes	0.17	0.06	1725	120/1	(1)(2)(3)(4)
EF-B4	G-140-VG	DOWNBLAST	1500	0.25	7.7	Yes	0.5	0.17	1200	120/1	(1)(2)(3)(4)
EF-C1	G-180-VG	DOWNBLAST	1795	0.38	6.5	Yes	0.75	0.18	900	208/1	(1)(2)(3)
EF-C2	G-140-VG	DOWNBLAST	1500	0.25	7.7	Yes	0.5	0.17	1200	120/1	(1)(2)(3)(4)
EF-C3	G-095-VG	DOWNBLAST	600	0.25	6.1	Yes	0.17	0.06	1725	120/1	(1)(2)(3)(4)
EF-C4	G-140-VG	DOWNBLAST	1500	0.25	7.7	Yes	0.5	0.17	1200	120/1	(1)(2)(3)(4)
EF-C5	CUE-099-VG	UPBLAST	600	0.35	6.2	Yes	0.25	0.08	1183	120/1	(1)(2)(3)(5) SERVES FUME HOOD
EF-C6	G-140-VG	DOWNBLAST	1500	0.25	7.7	Yes	0.5	0.17	1200	120/1	(1)(2)(3)(4)
EF-K1	G-098-VG	DOWNBLAST	400	0.25	5.2	Yes	0.25	0.04	1050	120/1	(1)(2)(3)
EF-K2	G-140-VG	DOWNBLAST	1475	0.50	8.6	Yes	0.5	0.26	1079	120/1	(1)(2)(3)
EF-K3	G-070-VG	DOWNBLAST	200	0.13	2.0	Yes	0.07	0.01	1124	120/1	(1)(2)(3)
EF-K4	G-095-VG	DOWNBLAST	450	0.25	4.9	Yes	0.17	0.04	1116	120/1	(1)(2)(3)(4)
EF-K5	G-095-VG	DOWNBLAST	400	0.13	2.4	Yes	0.17	0.02	870	120/1	(1)(2)(3)(4)
EF-K6	G-180-VG	DOWNBLAST	1600	0.25	5.9	Yes	0.75	0.11	564	208/1	(1)(2)(3)(4)
EF-K7	G-098-VG	DOWNBLAST	325	0.25	4.0	Yes	0.25	0.03	941	120/1	(1)(2)(3)(4)
EF-K8	CUE-180-VG	UPBLAST	1800	0.25	5.1	Yes	0.75	0.15	622	208/1	(1)(2)(3)(5) SERVES FUME HOOD
EF-K9	G-140-VG	DOWNBLAST	1500	0.25	7.7	Yes	0.25	0.17	952	120/1	(1)(2)(3)(4)
EF-K10	G-095-VG	DOWNBLAST	550	0.25	5.6	Yes	0.17	0.05	1213	120/1	(1)(2)(3)(4)
EF-K11	G-100-VG	DOWNBLAST	750	0.25	5.4	Yes	0.25	0.07	1725	120/1	(1)(2)(3)
EF-M1	CUBE-360-VG	UPBLAST	6700	0.40	8.0	Yes	1	0.77	1725	208/1	(1)(2)(3)
EF-M2	G-180-VG	DOWNBLAST	2500	0.38	8.4	Yes	0.75	0.31	900	208/1	(1)(2)(3)

NOTES:

1. RE-USE EXISTING ROOF CURB. PROVIDE CURB ADAPTER.
2. PROVIDE WITH DISCONNECT & VARI-GREEN MOTOR FOR BALANCING.
3. PROVIDE NEW BACKDRAFT DAMPER FOR INSTALLATION IN EXIST. CURB. FIELD VERIFY SIZE.
4. PROVIDE WITH 1 HOUR WALL TIMER SWITCH.
5. FAN IS CONTROLED BY FUME HOOD SWITCH.

STEAM TO WATER HEAT EXCHANGERS

BASED ON BELL & GOSSETT

MARK	MODEL	CAPACITY (MBH)	STEAM SIDE FLOW (LB/HR)	STEAM SIDE PRESS. (PSI)	WATER SIDE FLOW (GPM)	WPD (FT)	FLUID TYPE	EWT (°F)	LWT (°F)	SYSTEM	LOCATION	REMARKS
HX-D1	QSU-105-2	4500	4654.1	5	300	6.5	WATER	100 °F	130 °F	UNITS A,B,C HEATING WATER	UNIT D TUNNEL	PRIMARY
HX-D2	QSU-105-2	4500	4654.1	5	300	6.5	WATER	100 °F	130 °F	UNITS A,B,C HEATING WATER	UNIT D TUNNEL	STAND-BY
HX-K1	QSU-105-2	3900	4033.8	5	260	6.5	WATER	100 °F	130 °F	UNIT K HEATING SYSTEM	MECH. RM. UNIT K	PRIMARY
HX-K2	QSU-105-2	3900	4033.8	5	260	6.5	WATER	100 °F	130 °F	UNIT K HEATING SYSTEM	MECH. RM. UNIT K	STAND-BY

HEATING COILS - ELECTRIC

BASED ON MARLEY

MARK	SIZE	CFM	MBH	ATR	KW	VOLTAGE	PHASE	REMARKS
EHC-A1	33"x8"	750	36.8	45	10.8	208 V	3	PROVIDE WITH SCR CONTROL
EHC-B1	33"x8"	750	36.8	45	10.8	208 V	3	PROVIDE WITH SCR CONTROL
EHC-C1	33"x8"	750	36.8	45	10.8	208 V	3	PROVIDE WITH SCR CONTROL

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
MECHANICAL SCHEDULES AND DETAILS

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 503
21-807.00

AIR COOLED CONDENSING UNITS — BASED ON YORK

MARK	MODEL	NOMINAL COOLING CAPACITY (BTUH)	ELECTRICAL				REMARKS
			MOCP	MCA	VOLTAGE	PHASE	
ACCU-203	YCE18	18,000	20 A	12.7 A	208 V	1	
ACCU-205	YCE24	24,000	25 A	14.8 A	208 V	1	
ACCU-212	YCE24	24,000	25 A	14.8 A	208 V	1	
ACCU-C1							REFER TO AHU-C1 SCHEDULE ON SHEET M501
ACCU-C10A	YCE30 (2-STAGE)	30,000	30 A	18.4 A	208 V	1	
ACCU-C10B	YCE30 (2-STAGE)	30,000	30 A	18.4 A	208 V	1	
ACCU-C12	YCE30 (2-STAGE)	30,000	30 A	18.4 A	208 V	1	
ACCU-C13	YCE48 (2-STAGE)	48,000	45 A	30.0 A	208 V	1	
ACCU-C14	YCE30 (2-STAGE)	30,000	30 A	18.4 A	208 V	1	
ACCU-C15	YCE30 (2-STAGE)	30,000	30 A	18.4 A	208 V	1	
ACCU-C16	YCE48 (2-STAGE)	48,000	45 A	30.0 A	208 V	1	
ACCU-C19A	YCE30 (2-STAGE)	30,000	30 A	18.4 A	208 V	1	
ACCU-C19B	YCE30 (2-STAGE)	30,000	30 A	18.4 A	208 V	1	
ACCU-C21A	YCE48 (2-STAGE)	48,000	45 A	30.0 A	208 V	1	
ACCU-C21B	YCE48 (2-STAGE)	48,000	45 A	30.0 A	208 V	1	
ACCU-C21C	YCE48 (2-STAGE)	48,000	45 A	30.0 A	208 V	1	
ACCU-C23	YCE48 (2-STAGE)	48,000	45 A	30.0 A	208 V	1	
ACCU-M1							REFER TO AHU-M1 SCHEDULE ON SHEET M501

UNIT VENTILATOR - HOT WATER HEAT / DX COOLING — BASED ON "AIREDALE"

MARK	MODEL	TYPE	CABINET		S.A. FAN				HOT WATER COIL (1)					DX COOLING COIL						REMARKS
			RA INLET	OA LOUVER	SUPPLY CFM	O.A. CFM	HP	VOLTAGE	MBH	GPM	EAT	WPD	ROWS	TMBH	SMBH	EDB	EWB	LDB	LWB	
HUV-203	ZCV750	CEILING MTD.	(3)	(3)	750	225	1/2	208/1/60	42.7	0	42.0	0	0	19.1	12.5	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(9) NO HEATING COIL
HUV-205	ZFV1000	UNDER WINDOW	BOTTOM	BACK	1000	300	1/4	208/1/60	49.7	3.8	42.0	6.5	2	27.6	19.0	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(9)
HUV-212	ZCV1000	ABOVE CEILING	(2)	(2)	1000	300	1/2	208/1/60	49.7	3.8	42.0	1.0	2	27.6	19.0	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(9)(10)
HUV-C10A	ZFV1250	UNDER WINDOW	BOTTOM	BACK	1250	375	1/4	208/1/60	63.7	4.7	42.0	6.5	2	32.5	23.4	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(9)(10)
HUV-C10B	ZFV1250	UNDER WINDOW	BOTTOM	BACK	1250	375	1/4	208/1/60	63.7	4.7	42.0	6.5	2	32.5	23.4	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(9)(10)
HUV-C12	ZFV1250	UNDER WINDOW	BOTTOM	BACK	1250	375	1/4	208/1/60	63.7	4.7	42.0	6.5	2	32.5	23.4	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(9)
HUV-C13	ZFV1500	UNDER WINDOW	BOTTOM	BACK	1500	450	1/4	208/1/60	78.6	5.7	42.0	6.5	2	39.8	28.0	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(9)
HUV-C14	ZFV1250	UNDER WINDOW	BOTTOM	BACK	1250	375	1/4	208/1/60	63.7	4.7	42.0	6.5	2	32.5	23.4	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(9)
HUV-C15	ZFV1250	UNDER WINDOW	BOTTOM	BACK	1250	375	1/4	208/1/60	63.7	4.7	42.0	6.5	2	32.5	23.4	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(9)
HUV-C16	ZFV1500	UNDER WINDOW	BOTTOM	BACK	1500	450	1/4	208/1/60	78.6	5.7	42.0	6.5	2	39.8	28.0	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(9)
HUV-C19A	ZFV1250	UNDER WINDOW	BOTTOM	BACK	1250	375	1/4	208/1/60	63.7	4.7	42.0	6.5	2	32.5	23.4	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(9)
HUV-C19B	ZFV1250	UNDER WINDOW	BOTTOM	BACK	1250	375	1/4	208/1/60	63.7	4.7	42.0	6.5	2	32.5	23.4	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(9)
HUV-C21A	ZFV1500	UNDER WINDOW	BOTTOM	BACK	1500	450	1/4	208/1/60	78.6	5.7	42.0	6.5	2	39.8	28.0	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(9)
HUV-C21B	ZFV1500	UNDER WINDOW	BOTTOM	BACK	1500	450	1/4	208/1/60	78.6	5.7	42.0	6.5	2	39.8	28.0	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(9)
HUV-C21C	ZFV1500	UNDER WINDOW	BOTTOM	BACK	1500	450	1/4	208/1/60	78.6	5.7	42.0	6.5	2	39.8	28.0	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(9)
HUV-C23	ZFV1500	UNDER WINDOW	BOTTOM	BACK	1500	450	1/4	208/1/60	78.6	5.7	42.0	6.5	2	39.8	28.0	80.0 °F	67.0 °F	55.0 °F	55.0 °F	(4)(9)
VUV-278	CMD60	VERTICAL	FRONT	BACK	1800	540	3/4	208/3/60	95.2	5	47.5	2.14	2	55.9	40.9	75.0 °F		59.0 °F		(8)(9)
VUV-313	CMD24	VERTICAL	FRONT	BACK	800	240	3/4	208/3/60	38.1	3.5	49	0.84	2	17.7	11.0	75.0 °F		46.0 °F		(8)(9)(10)
VUV-324	CMD24	VERTICAL	FRONT	BACK	800	240	3/4	208/3/60	38.1	3.5	49	0.84	2	17.7	11.0	75.0 °F		46.0 °F		(6)(7)(8)(11)
VUV-421	CMD60	VERTICAL	FRONT	BACK	1800	540	3/4	208/3/60	95.2	5	47.5	2.14	2	55.9	40.9	75.0 °F		59.0 °F		(8)(9)(10)
VUV-K4	CMD60	VERTICAL	FRONT	BACK	1800	540	3/4	208/3/60	95.2	5	47.5	2.14	2	55.9	40.9	75.0 °F		59.0 °F		(8)(9)
VUV-K5C	CMD60	VERTICAL	FRONT	BACK	1800	540	3/4	208/3/60	95.2	5	47.5	2.14	2	55.9	40.9	75.0 °F		59.0 °F		(8)(9)
VUV-K5E	CMD60	VERTICAL	FRONT	BACK	1800	540	3/4	208/3/60	95.2	5	47.5	2.14	2	55.9	40.9	75.0 °F		59.0 °F		(8)(9)
VUV-K5W	CMD60	VERTICAL	FRONT	BACK	1800	540	3/4	208/3/60	95.2	5	47.5	2.14	2	55.9	40.9	75.0 °F		59.0 °F		(8)(9)
VUV-K6	CMD60	VERTICAL	FRONT	BACK	1800	540	3/4	208/3/60	95.2	5	47.5	2.14	2	55.9	40.9	75.0 °F		59.0 °F		(8)(9)
VUV-K11	CMD36	VERTICAL	FRONT	BACK	1100	330	3/4	208/3/60	61.9	3.5	44.8	0.84	2	34.0	24.3	75.0 °F		46.0 °F		(6)(7)(8)(11)
VUV-K12	CMD36	VERTICAL	FRONT	BACK	1100	330	3/4	208/3/60	61.9	3.5	44.8	0.84	2	34.0	24.3	75.0 °F		46.0 °F		(6)(7)(8)(11)
VUV-K13	CMD36	VERTICAL	FRONT	BACK	1100	330	3/4	208/3/60	61.9	3.5	44.8	0.84	2	34.0	24.3	75.0 °F		46.0 °F		(6)(7)(8)(11)
VUV-K14	CMD36	VERTICAL	FRONT	BACK	1100	330	3/4	208/3/60	61.9	3.5	44.8	0.84	2	34.0	24.3	75.0 °F		46.0 °F		(6)(7)(8)(11)
VUV-K15	CMD36	VERTICAL	FRONT	BACK	1100	330	3/4	208/3/60	61.9	3.5	44.8	0.84	2	34.0	24.3	75.0 °F		46.0 °F		(6)(7)(8)(11)
VUV-K16	CMD36	VERTICAL	FRONT	BACK	1100	330	3/4	208/3/60	61.9	3.5	44.8	0.84	2	34.0	24.3	75.0 °F		46.0 °F		(6)(7)(8)(11)
VUV-K17	CMD60	VERTICAL	FRONT	BACK	1800	540	3/4	208/3/60	95.2	5	47.5	2.14	2	55.9	40.9	75.0 °F		59.0 °F		(8)(9)(10)
VUV-M1A	CMD60	VERTICAL	FRONT	BACK	1800	540	3/4	208/3/60	95.2	5	47.5	2.14	2	55.9	40.9	75.0 °F		59.0 °F		(6)(7)(8)(9)
VUV-M3	CMD24	VERTICAL	FRONT	BACK	800	240	3/4	208/3/60	38.1	3.5	49	0.84	2	17.7	11.0	75.0 °F		46.0 °F		(6)(7)(8)(9)(10)
VUV-M3A	CMD48	VERTICAL	FRONT	BACK	1500	450	3/4	208/3/60	77.6	4	47.5	1.45	2	46.8	31.5	75.0 °F		46.0 °F		(6)(7)(8)(9)
VUV-M3B	CMD48	VERTICAL	FRONT	BACK	1500	450	3/4	208/3/60	77.6	4	47.5	1.45	2	46.8	31.5	75.0 °F		46.0 °F		(6)(7)(8)(9)
VUV-M6	CMD24	VERTICAL	FRONT	BACK	800	240	3/4	208/3/60	38.1	3.5	49	0.84	2	17.7	11.0	75.0 °F		46.0 °F		(6)(7)(8)(9)
VUV-M10	CMD36	VERTICAL	FRONT	BACK	1100	330	3/4	208/3/60	61.9	3.5	44.8	0.84	2	34.0	24.3	75.0 °F		46.0 °F		(8)(9)(10)
VUV-M11	CMD36	VERTICAL	FRONT	BACK	1100	330	3/4	208/3/60	61.9	3.5	44.8	0.84	2	34.0	24.3	75.0 °F		46.0 °F		(8)(9)(10)
VUV-M12A	CMD48	VERTICAL	FRONT	BACK	1500	450	3/4	208/3/60	77.6	4	47.5	1.45	2	46.8	31.5	75.0 °F		46.0 °F		(8)(9)(10)
VUV-M12B	CMD48	VERTICAL	FRONT	BACK	1500	450	3/4	208/3/60	77.6	4	47.5	1.45	2	46.8	31.5	75.0 °F		46.0 °F		(8)(9)
VUV-M13	CMD48	VERTICAL	FRONT	BACK	1500	450	3/4	208/3/60	77.6	4	47.5	1.45	2	46.8	31.5	75.0 °F		46.0 °F		(8)(9)

NOTES:
1. BASED ON 130°F EWT, 30°F dT.
2. UNIT IS CONCEALED ABOVE CEILING WITH FRONT DISHCARGE WITH DUCT COLLAR, REAR RETURN AIR AND REAR OUTSIDE AIR.
3. UNIT IS CELING (FLUSH) MOUNTED WITH FRONT DISCHARGE WITH DUCT COLLAR, BOTTOM RETURN AIR AND TOP OUTSIDE AIR.
4. PROVIDE UNIT WITH OPTIONAL 6" HIGH SUB-BASE & ALL APPLICABLE FILLER SECTIONS.
5. NOT USED.
6. PROVIDE UNIT WITH 15" REAR EXTENSION FOR OAI AND RELIEF AIR DUCTED TO WALL LOUVER INSTALLED ABOVE UNIT.
7. PROVIDE WITH OPTIONAL FACTORY SUPPLIED CONDENSATE PUMP BASED ON "SAUERMAN" MODEL SI-1801.
8. PROVIDE UNIT WITH DUCT SHROUD TO CEILING, REAR EXTENSION, & FRONT RETURN.
9. INSTALL SALVAGED BI-POLAR IONIZATION DEVICE IN NEW UNIT.
10. PROVIDE WITH 3-WAY CONTROL VALVE.
11. INSTALL NEW BI-POLAR IONIZATION DEVICE IN UNIT.

CABINET UNIT HEATERS - HOT WATER — BASED ON VULCAN

MARK	MODEL	TYPE	CFM	MBH (1)(2)	GPM	HP	RPM	VOLTAGE	MAX RECESS	MOUNTING HEIGHT	REMARKS
CH-A1	RWI-1130-03	RECESSED INVERTED FLOW	330	17.7	3.5	0.07	1050	120/1	FULLY RECESSED	(3)	
CH-A2	RWI-1130-03	RECESSED INVERTED FLOW	330	17.7	3.5	0.07	1050	120/1	FULLY RECESSED	(3)	
CH-B1	RWI-1130-03	RECESSED INVERTED FLOW	330	17.7	3.5	0.07	1050	120/1	FULLY RECESSED	(3)	
CH-B2	RWI-1130-03	RECESSED INVERTED FLOW	330	17.7	3.5	0.07	1050	120/1	FULLY RECESSED	(3)	
CH-C1	RWI-1130-03	RECESSED INVERTED FLOW	330	17.7	3.5	0.07	1050	120/1	FULLY RECESSED	(3)	
CH-C2	RWI-1130-03	RECESSED INVERTED FLOW	330	17.7	3.5	0.07	1050	120/1	FULLY RECESSED	(3)	
CH-D1	WI-1110-04	WALL INVERTED FLOW	420	22.7	4	0.1	1050	120/1	SURFACE MTD.	(3)	
CH-K1	RWI-1130-06	RECESSED INVERTED FLOW	620	33	4	0.1	1050	120/1	SEMI RECESSED	(3)	
CH-K2	RWI-1130-06	RECESSED INVERTED FLOW	620	33	4	0.1	1050	120/1	SEMI RECESSED	(3)	
CH-M1	RC-1200-06	RECESSED CEILING	620	33	4	0.1	1050	120/1	FULLY RECESSED	(3)	
CH-M2	RC-1200-06	RECESSED CEILING	620	33	4	0.1	1050	120/1	FULLY RECESSED	(3)	
CH-M3	RWI-1130-04	RECESSED INVERTED FLOW	420	22.7	4	0.1	1050	120/1	FULLY RECESSED	(3)	
CH-M4	RWI-1130-04	RECESSED INVERTED FLOW	420	22.7	4	0.1	1050	120/1	FULLY RECESSED	(3)	

NOTES:
1. BASED ON 130°F EWT, 20°F dT, 60°F EAT.
2. PROVIDE WITH 2 ROW HIGH CAPACITY COIL.
3. MOUNTING HEIGHT TO MATCH EXISTING CABINET HEATER.

PUMPS — BASED ON BELL & GOSSETT

MARK	MODEL	FLOW RATE (GPM)	HEAD (FT)	PEIcl	MOTER DATA				SYSTEM	LOCATION	REMARKS
					HP	BHP	RPM	VOLTAGE			
P-D1	e-1510 2.5BB	300	80	0.89	10	7.8	1800	480/3	UNIT A,B,C HEATING WATER	UNIT D TUNNEL	(1)
P-D2	e-1510 2.5BB	300	80	0.89	10	7.8	1800	480/3	UNIT A,B,C HEATING WATER	UNIT D TUNNEL	(1)
P-K1	e-1510 2.5BB	260	50	0.89	7.5	4.35	1800	480/3	UNIT K HEATING WATER	MECH. RM. UNIT K	(1)
P-K2	e-1510 2.5BB	260	50	0.89	7.5	4.35	1800	480/3	UNIT K HEATING WATER	MECH. RM. UNIT K	(1)
P-K3	e-60 STOCK 1.5x1.5x5.25	44	20	-	0.75	0.358	1800	480/3	AHU-K1 HTG. COIL	MECH. RM. UNIT K	
P-L1	e-60 STOCK 1.25x1.25x5.25	28	20	-	0.5	0.24	1800	115/1	AHU-L1 HTG. COIL	MECH. RM. UNIT K	
P-M1	e-60 STOCK 1.5x1.5x6.25	59	20	-	0.75	0.472	1800	480/3	AHU-M1 HTG. COIL	UNIT M MEZZANINE	
P-M2	e-60 STOCK 1.5x1.5x6.25	57	20	-	0.75	0.454	1800	480/3	AHU-M2 HTG. COIL	UNIT M AUTO BODY	

NOTES:
1. VFD PROVIDED BY TEMPERATURE CONTROLS CONTRACTOR.

UNIT HEATER - HOT WATER — BASED ON VULCAN

MARK	MODEL	TYPE	CFM	MBH (1)	GPM	WPD	HP	RPM	VOLTAGE	REMARKS
UH-K1	HV-84	HORIZONTAL	1,400	30.5	6.1	.24	1/12	1000	120/1	
UH-M1	HV-120	HORIZONTAL	1,900	43.6	8.8	.39	1/3	1140	120/1	
UH-M2	HV-120	HORIZONTAL	1,900	43.6	8.8	.39	1/3	1140	120/1	
UH-M3	HV-120	HORIZONTAL	1,900	43.6	8.8	.39	1/3	1140	120/1	
UH-M4	HV-120	HORIZONTAL	1,900	43.6	8.8	.39	1/3	1140	120/1	
UH-M5	HV-120	HORIZONTAL	1,900	43.6	8.8	.39	1/3	1140	120/1	
UH-M6	HV-120	HORIZONTAL	1,900	43.6	8.8	.39	1/3	1140	120/1	

NOTES:
1. 1. BASED ON 130°F EWT, 20°F dT, 60°F EAT.

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Addendum No. 2 December 16, 2022

ISSUED FOR — DATE

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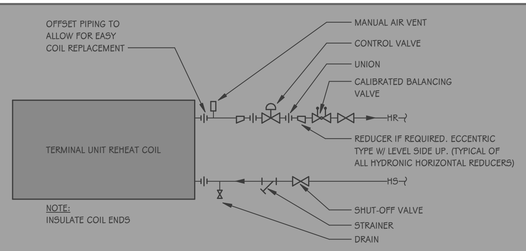
OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
MECHANICAL SCHEDULES AND DETAILS

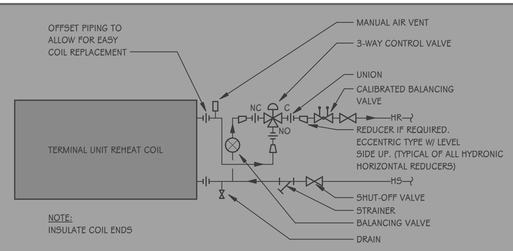
DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 504
21-807.00



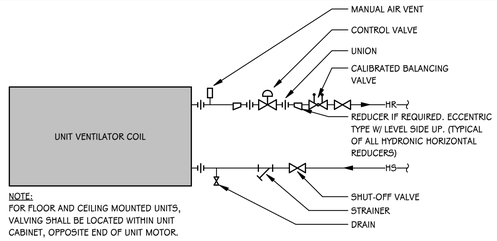
TERMINAL UNIT REHEAT COIL PIPING DETAIL (2-WAY)

SCALE: NONE



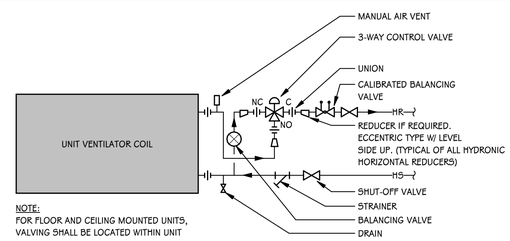
TERMINAL UNIT REHEAT COIL PIPING DETAIL (3-WAY)

SCALE: NONE



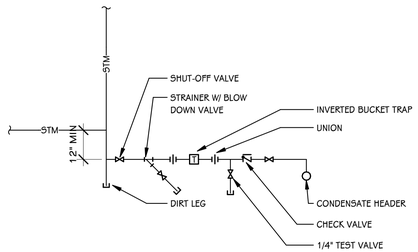
UNIT VENTILATOR PIPING DETAIL (2-WAY)

SCALE: NONE



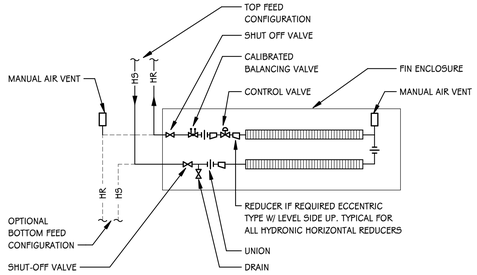
UNIT VENTILATOR PIPING DETAIL (3-WAY)

SCALE: NONE



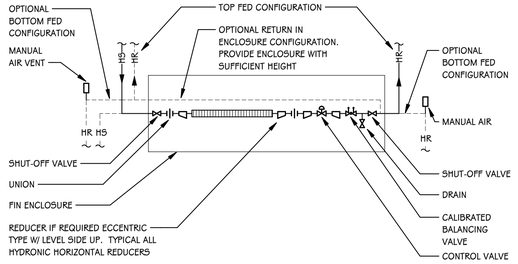
STEAM TRAP DETAIL

SCALE: NONE



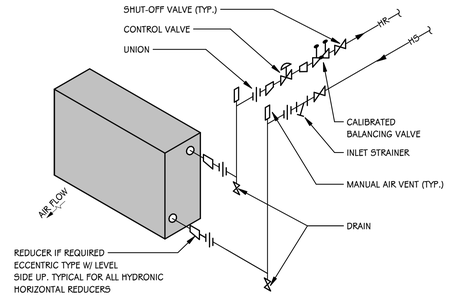
FIN RADIATION PIPING DETAIL - TWO ROW

SCALE: NONE



FIN RADIATION PIPING DETAIL - SINGLE ROW

SCALE: NONE

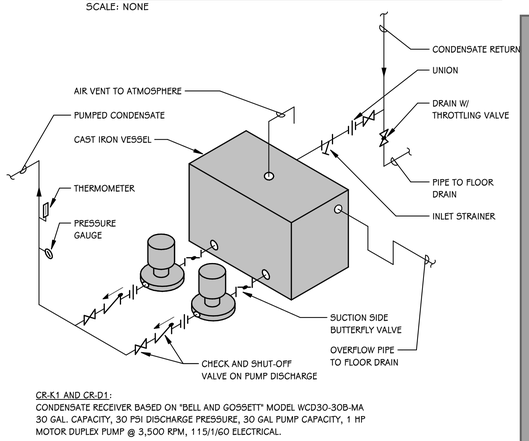


CABINET HEATER PIPING DETAIL

SCALE: NONE

PUMP - BASE MOUNTED DETAIL WITH SUCTION DIFFUSER

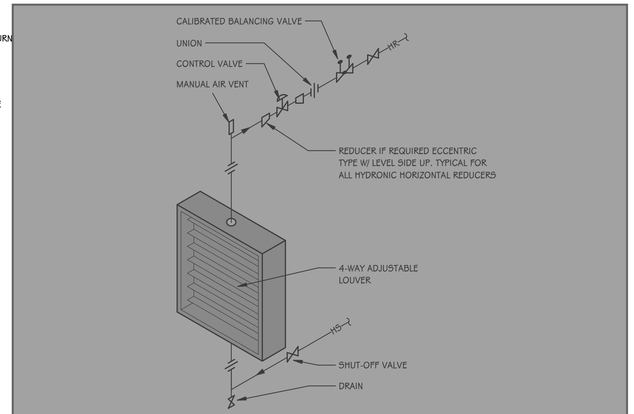
SCALE: NONE



CR-K1 AND CR-D1:
CONDENSATE RECEIVER BASED ON "BELL AND GOSSETT" MODEL WCD30-30B-MA 30 GAL. CAPACITY, 30 PSI DISCHARGE PRESSURE, 30 GAL PUMP CAPACITY, 1 HP MOTOR DUPLEX PUMP @ 3,500 RPM, 115/1/60 ELECTRICAL.

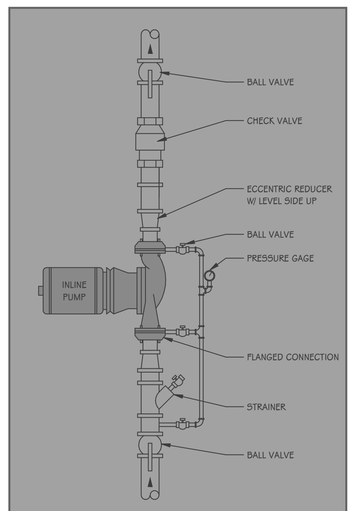
CONDENSATE RECEIVER PIPING DETAIL - DUPLEX

SCALE: NONE



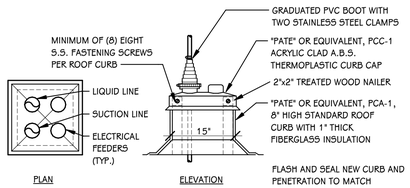
UNIT HEATER PIPING DETAIL - HORIZONTAL(B)

SCALE: NONE



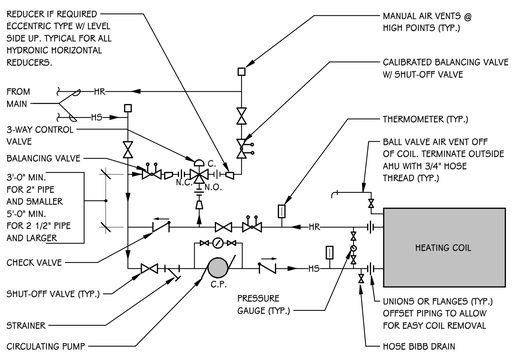
PUMP - INLINE PIPING DETAIL

SCALE: NONE



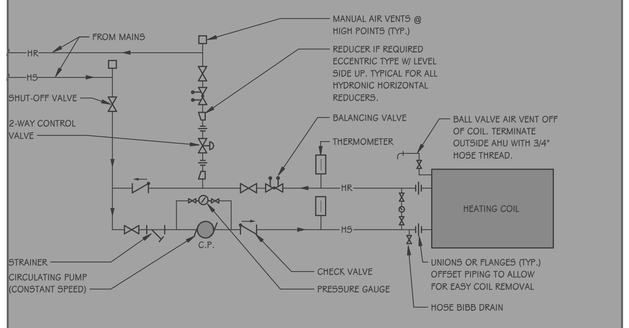
PIPING PORTAL / CURB DETAIL

SCALE: NONE



AHU HEATING COIL PIPING DETAIL - SINGLE COIL 3-WAY VALVE

SCALE: NONE



AHU HEATING COIL PIPING DETAIL - SINGLE COIL 2-WAY VALVE

SCALE: NONE

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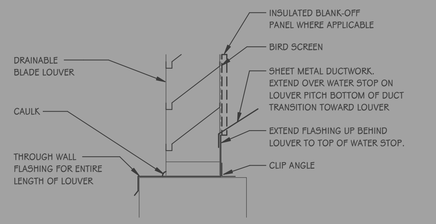
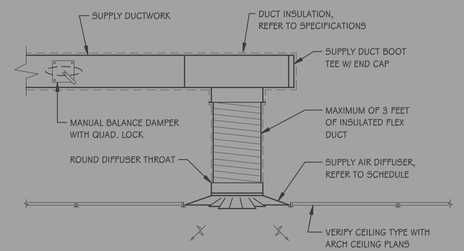
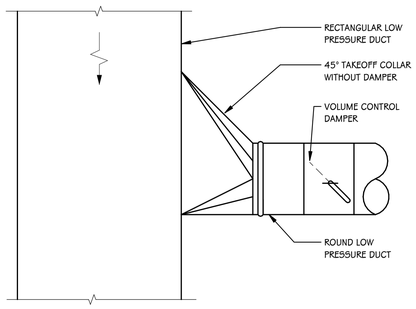


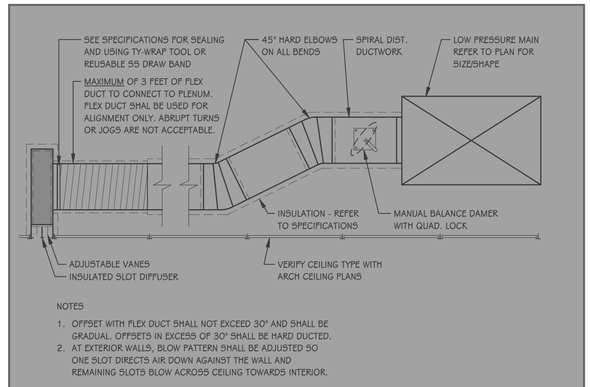
LOUVER INSTALLATION DETAIL
SCALE: NONE



CEILING MOUNTED SUPPLY DIFFUSER DETAIL - TYPICAL
SCALE: NONE



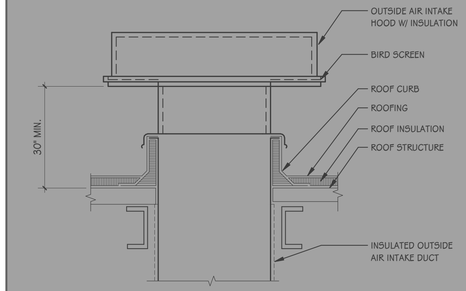
TAKEOFF DETAIL - RECTANGULAR TO ROUND
SCALE: NONE



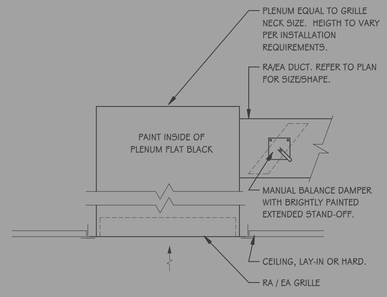
NOTES

1. OFFSET WITH FLEX DUCT SHALL NOT EXCEED 30° AND SHALL BE GRADUAL. OFFSETS IN EXCESS OF 30° SHALL BE HARD DUCTED.
2. AT EXTERIOR WALLS, BLOW PATTERN SHALL BE ADJUSTED SO ONE SLOT DIRECTS AIR DOWN AGAINST THE WALL AND REMAINING SLOTS BLOW ACROSS CEILING TOWARDS INTERIOR.

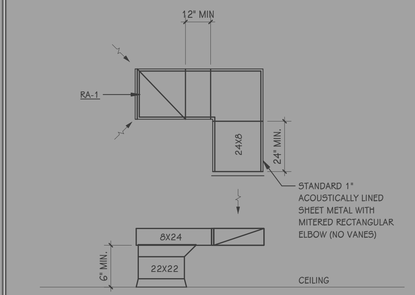
TYPICAL SLOT DIFFUSER BRANCH DETAIL
SCALE: NONE



OUTSIDE AIR INTAKE DETAIL
SCALE: NONE



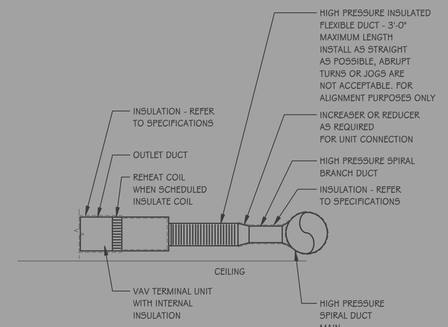
RETURN / EXHAUST AIR GRILLE PLENUM DETAIL
SCALE: NONE



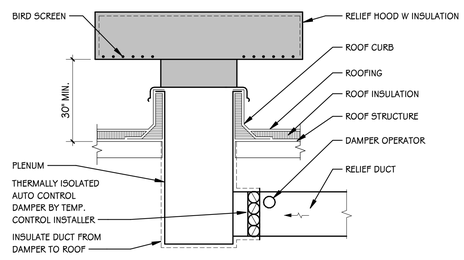
NOTE:

1. SEE PLANS LOCATION OF RETURN AIR TRANSFER DUCTS.

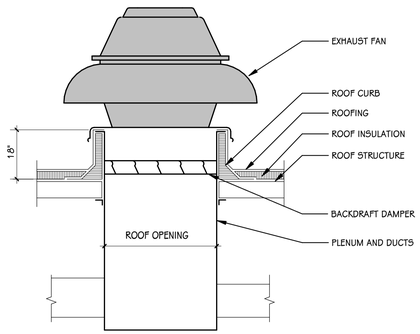
RETURN AIR PLENUM TRANSFER DUCT DETAIL
SCALE: NONE



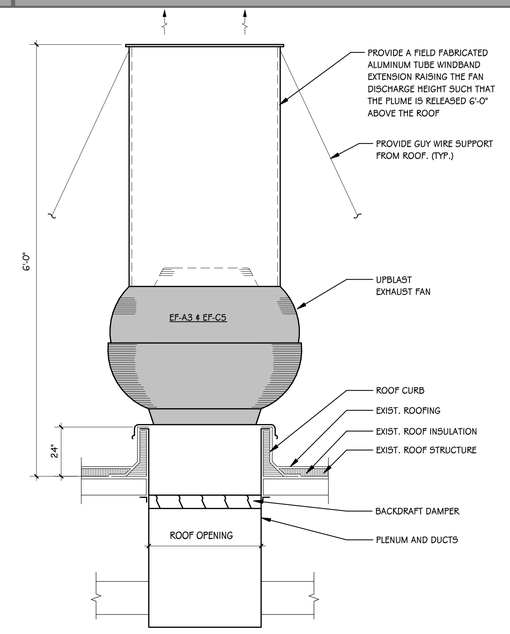
TERMINAL UNIT DUCTWORK DETAIL
SCALE: NONE



RELIEF VENTILATOR DETAIL
SCALE: NONE



ROOF EXHAUSTER DETAIL
SCALE: NONE



ROOF EXHAUSTER DETAIL - UPBLAST (WITH WINDBAND)
SCALE: NONE

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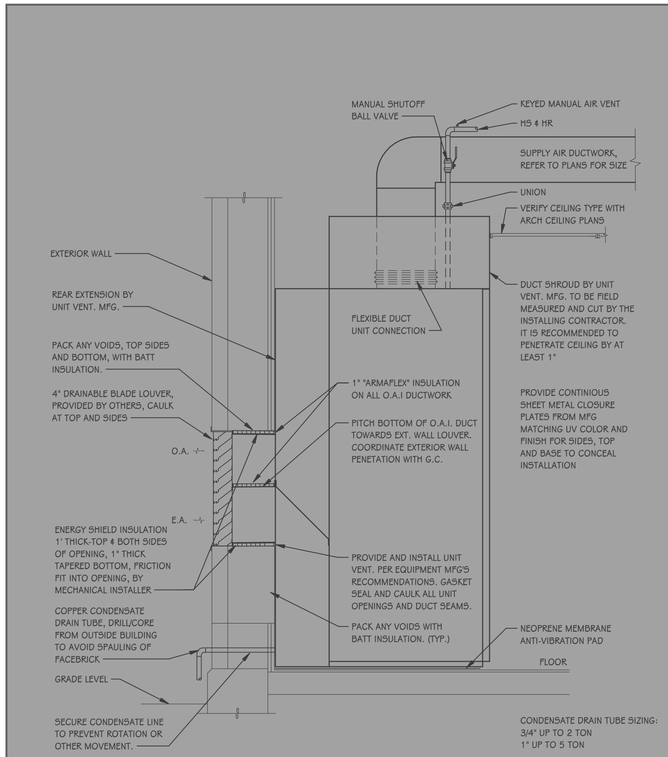
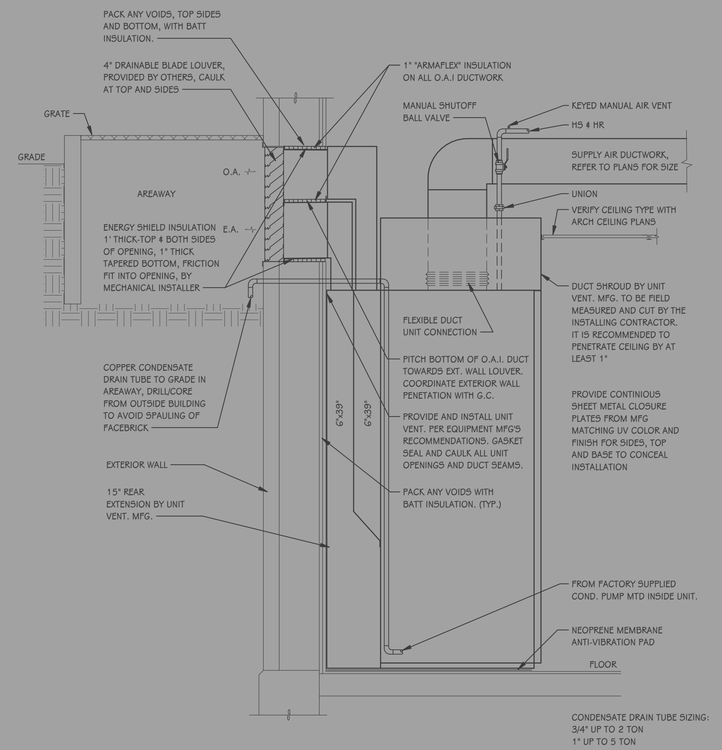


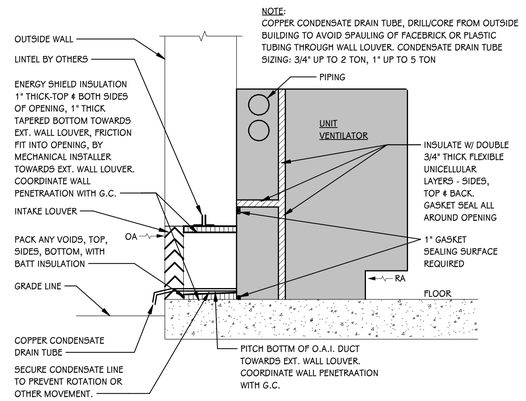
UNIT VENTILATOR DETAIL - VERTICAL

SCALE: NONE



UNIT VENTILATOR DETAIL - VERTICAL WITH 15" REAR EXTENSION

SCALE: NONE



UNIT VENTILATOR DETAIL - FLOOR MOUNTED

SCALE: NONE

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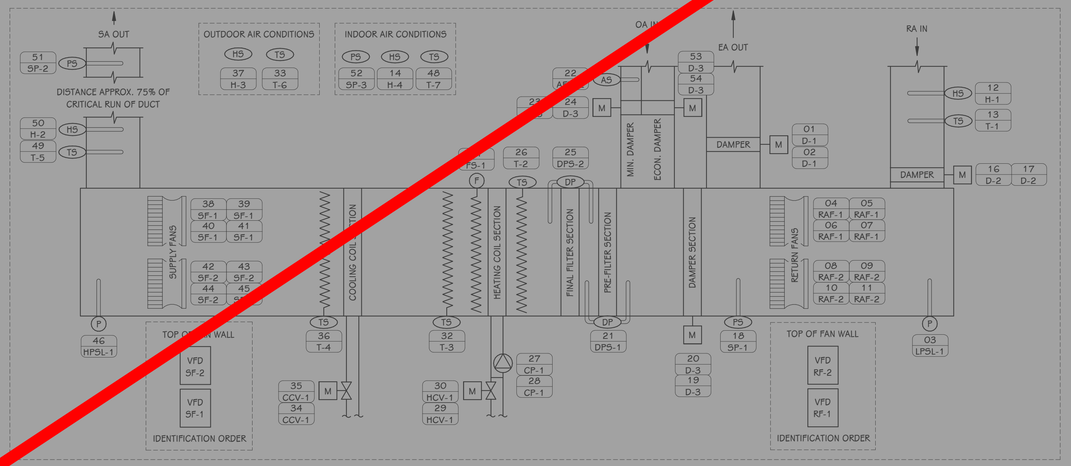
CONTROL POINTS

NUMBER	TAG	DESCRIPTION	ALARM	TREND	MISC.	REMARKS
AHU-K1						
01	D-1	EXHAUST AIR DAMPER OUTPUT		▮		
02	D-1	EXHAUST AIR DAMPER POSITION		▮		
03	LPSL-1	LOW PRESSURE STATIC LIMIT	▮	▮		HARD WIRED SAFETY - MANUAL RESET
04	RAF-1	VFD BACNET INTEGRATION		▮		POWER, % SPEED, RUN TIME, FAULT, ALARM
05	RAF-1	FAN SPEED CONTROL		▮		
06	RAF-1	FAN ENABLE/DISABLE		▮		
07	RAF-1	FAN STATUS	▮	▮		
08	RAF-2	VFD BACNET INTEGRATION		▮		POWER, % SPEED, RUN TIME, FAULT, ALARM
09	RAF-2	FAN SPEED CONTROL		▮		
10	RAF-2	FAN ENABLE/DISABLE		▮		
11	RAF-2	FAN STATUS	▮	▮		
12	H-1	RETURN AIR HUMIDITY		▮		DISPLAY ENTHALPY BASED ON T+H READINGS
13	T-1	RETURN AIR TEMPERATURE		▮		DISPLAY ENTHALPY BASED ON T+H READINGS
14	H-4	INDOOR AIR HUMIDITY SENSOR		▮		
16	D-2	RETURN AIR DAMPER OUTPUT		▮		
17	D-2	RETURN AIR DAMPER POSITION		▮		
18	SP-1	RETURN AIR PLENUM STATIC PRESSURE		▮		NOTE LOCATION ON AS-BUILTS
19	D-3	MIXED AIR DAMPER POSITION		▮		
20	D-3	MIXED AIR DAMPER OUTPUT		▮		
21	DPS-1	PRE-FILTER STATUS	▮	▮		
22	AFM-2	MINIMUM OUTDOOR AIR FLOW		▮		
23	D-3	MINIMUM OUTDOOR AIR DAMPER POSITION		▮		
24	D-3	MINIMUM OUTDOOR AIR DAMPER OUTPUT		▮		
25	DPS-2	FINAL FILTER STATUS	▮	▮		
26	T-2	MIXED AIR TEMPERATURE	▮	▮		
27	CP-1	PUMP STATUS	▮	▮		
28	CP-1	PUMP ENABLE/DISABLE		▮		
29	HCV-1	HEATING CONTROL VALVE POSITION		▮		
30	HCV-1	HEATING CONTROL VALVE OUTPUT		▮		
31	FS-1	FREEZE STAT ALARM STATUS	▮	▮		HARD WIRED SAFETY - MANUAL RESET
32	T-3	HEATING COIL DISCHARGE TEMPERATURE		▮		
36	T-6	OUTDOOR AIR TEMPERATURE		▮		GLOBAL
34	CCV-1	COOLING CONTROL VALVE POSITION		▮		
35	CCV-1	COOLING CONTROL VALVE OUTPUT		▮		
36	T-4	COOLING COIL DISCHARGE TEMPERATURE		▮		
37	H-3	OUTDOOR AIR HUMIDITY		▮		GLOBAL
38	SF-1	VFD BACNET ITEGRATION		▮		POWER, % SPEED, RUN TIME, FAULT, ALARM
39	SF-1	FAN SPEED CONTROL		▮		
40	SF-1	FAN ENABLE/DISABLE		▮		
41	SF-1	FAN STATUS	▮	▮		
42	SF-2	VFD BACNET INTEGRATION		▮		POWER, % SPEED, RUN TIME, FAULT, ALARM
43	SF-2	FAN SPEED CONTROL		▮		
44	SF-2	FAN ENABLE/DISABLE		▮		
45	SF-2	FAN STATUS	▮	▮		
46	HPSL-1	HIGH PRESSURE STATIC LIMIT	▮	▮		HARD WIRED SAFETY - MANUAL RESET
48	T-7	INDOOR AIR TEMPERATURE		▮		
49	T-5	DISCHARGE AIR TEMPERATURE		▮		DISPLAY ENTHALPY BASED ON T+H READINGS
50	H-2	DISCHARGE AIR HUMIDITY		▮		DISPLAY ENTHALPY BASED ON T+H READINGS
51	SP-2	SUPPLY AIR STATIC PRESSURE		▮		NOTE LOCATION ON AS-BUILTS
52	SP-3	ROOM STATIC PRESSURE		▮		CONTRACTOR SHALL PROPOSE LOCATION FOR ENGINEERS REVIEW
53	D-3	ECONOMIZER OUTDOOR AIR DAMPER POSITION		▮		
54	D-3	ECONOMIZER OUTDOOR AIR DAMPER OUTPUT		▮		

OMIT ALL WORK ON THIS SHEET.



AHU-K1 CONTROLS DIAGRAM
SCALE: NONE

SEQUENCE OF OPERATIONS

NOTE: ALL LABOR, MATERIAL, EQUIPMENT AND SOFTWARE NOT SPECIFICALLY INDICATED WITHIN CONTROLS DRAWINGS THAT IS REQUIRED TO MEET THE FUNCTIONAL INTENT OF THE SEQUENCE OF OPERATIONS SHALL BE PROVIDED WITHOUT ADDITIONAL COST. POINT LISTS SHALL BE A GUIDE TO THE POINTS REQUIRED FOR CONTROL SYSTEM. FINAL POINTS SHALL BE DETERMINED BY SEQUENCE OF OPERATIONS. ALL SET POINTS SHALL BE OPERATOR ADJUSTABLE THROUGH THE BMS. ALL POINTS SHALL BE TRENDABLE.

AHU-K1 CONTROLS:

A. PROVIDE DDC CONTROL AND MONITORING FOR AIR HANDLING SYSTEM. SYSTEM INCLUDES INDOOR VARIABLE VOLUME UNIT WITH SUPPLY FAN, RETURN FAN, VFD DRIVEN MOTORS, ECONOMIZER DAMPER 4 MINIMUM OUTSIDE AIR DAMPER, PRE-FILTER, FINAL FILTER, PUMPED HOT WATER PREHEATING COIL WITH CONTROL VALVE AND ACTUATOR, AND CHILLED WATER COIL WITH CONTROL VALVE AND ACTUATOR. TEMPERATURE, HUMIDITY, AIRFLOW, AND PRESSURE SENSORS ARE REQUIRED AND BIPOLAR IONIZATION.
B. REFER TO VARIABLE AIR VOLUME (VAV) TERMINAL UNIT CONTROL ARTICLES FOR VAV TERMINAL UNIT OPERATION.
C. AIR HANDLING UNIT ADJUSTABLE SCHEDULE BASED ON THE FOLLOWING:
   1. TIME OF DAY (TOD) SCHEDULE.
      a. TO BE DETERMINED BY OWNER (CONSULT WITH OWNER).
      b. SUGGESTED OCCUPIED SCHEDULE: 7AM-5PM M-F, OFF SAT-SUN, OFF HOLIDAYS
   2. ENABLED AND DISABLED BASED ON MANUAL OVERRIDE FROM DDC.
D. AIR HANDLING UNIT ADJUSTABLE SETPOINTS:
   1. OCCUPIED 75°F COOLING / 70°F HEATING
   2. STANDBY 77°F COOLING / 68°F HEATING (BASED ON LIGHTING OCCUPANCY SENSORS)
   3. UNOCCUPIED 85°F COOLING / 55°F HEATING
   4. CO2 800 PPM MINIMUM / 1,000 PPM MAXIMUM
E. START/STOP, CONTROLLED DEVICES SHALL RESPOND AS FOLLOWS:
   1. WHEN INDEXED TO STOP:
      a. DISABLE SUPPLY AND RETURN FANS SIMULTANEOUSLY.
      b. COOLING CV 100% CLOSED.
      c. HEATING CV SHALL MODULATE TO MAINTAIN CONSTANT DISCHARGE AIR TEMPERATURE SENSOR AT 80°F (ADJ.), WHEN OUTDOOR AIR TEMPERATURE IS BELOW 45°F (ADJ.).
      d. OUTDOOR AND RELIEF AIR DAMPERS 100% CLOSED.
      e. RETURN AIR DAMPER 100% OPENED.
      f. BPI IS DISABLED.
   2. WHEN INDEXED TO START:
      a. ENABLE RETURN FANS FIRST, THEN SUPPLY FANS AFTER A DELAY.
      b. OPERATION OF SYSTEM TO RESUME AFTER START-UP DELAY.
F. SUPPLY FAN CONTROL (STATIC RESET) - SYSTEM CONTROLLER SHALL MODULATE SUPPLY FC VFD DRIVEN MOTORS TO MAINTAIN AN ADJUSTABLE DUCT STATIC PRESSURE SETPOINT MEASURED BY A DUCT STATIC PRESSURE CONTROLLER LOCATED 75% OF MAXIMUM MAIN DUCT DISTANCE DOWNSTREAM OF SYSTEM (FINAL POSITION TO BE PROPOSED BY CONTRACTOR AND APPROVED BY ENGINEER). RESET STATIC PRESSURE DIFFERENTIAL SETPOINT BASED ON THE FOLLOWING:
   1. STATIC PRESSURE SETPOINT SHALL BE RESET USING "TRIM AND RESPOND" LOGIC WITHIN THE RANGE OF 0.15" W.C. TO 1.75" W.C. (ADJ.). WHEN THE SYSTEM IS OFF, THE SETPOINT SHALL BE 0.5" W.C. (ADJ.). WHEN SYSTEM IS ON, EVERY TEN (10) MINUTES, TRIM THE SETPOINT BY 0.04" W.C. IF THERE ARE TWO (2) OR FEWER ZONE PRESSURE REQUESTS. IF THERE ARE MORE THAN TWO (2) ZONE PRESSURE REQUESTS, RESPOND BY INCREASING THE SETPOINT BY 0.06" W.C..
      a. A REQUEST IS GENERATED WHENEVER TERMINAL UNIT DAMPER IS GREATER THAN 90% (ADJ.) OPEN UNTIL IT DROPS TO 80% (ADJ.) OPEN.
      b. EXCLUDE ANY TERMINAL UNITS SET-UP AS CONSTANT VOLUME FROM "TRIM AND RESPOND" LOGIC.
      c. PROVIDE THE ABILITY TO OMIT ANY VAV TERMINAL UNITS FROM "TRIM AND RESPOND" LOGIC.
      d. TEST AND BALANCE CONTRACTOR SHALL PROVIDE MINIMUM AND MAXIMUM STATIC SETPOINTS, WHICH WILL BE DETERMINED DURING THE BALANCING PROCESS.
   2. DISCHARGE PRESSURE HIGH LIMIT WILL CONTROL STATIC PRESSURE AT UNIT FROM EXCEEDING 3.0" W.G. (ADJ.) WITH OVERRIDE CONTROL OF SUPPLY FANS VFD DRIVEN MOTORS.
G. RELIEF FAN CONTROL (ZONE PRESSURE) - SYSTEM CONTROLLER SHALL MODULATE RETURN FAN VFD DRIVEN MOTOR TO MAINTAIN ZONE PRESSURE SETPOINT MEASURED BY A ZONE PRESSURE CONTROLLER LOCATED IN THE ZONE SERVED.
   1. THE ZONE STATIC PRESSURE SETPOINT (ADJ.) SHALL BE A SETPOINT THAT CONTROLS TO A SLIGHTLY POSITIVE PRESSURE.
H. FAN VFD DRIVEN MOTOR CONTROLLERS SHALL BE MONITORED BASED ON THE FOLLOWING:
   1. VIA BACNET/MODBUS CONNECTION (POWER USAGE / % SPEED / HOURS / FAULT / ALARM)
I. FANS INITIAL START-UP CONTROL – WHEN INDEXED TO START, SYSTEM CONTROLLER SHALL ENABLE FANS BASED ON THE FOLLOWING:
   1. WHEN ENABLED, AND AFTER A DELAY OF TWO (2) MINUTES (ADJ.) WITH NO STATUS SENSED, DDC SHALL INDICATE A CRITICAL ALARM.
      a. IF ANY FAN (SUPPLY OR RETURN) STATUS IS NOT SENSED, THE SYSTEM SHALL BE DISABLED AND AN ALARM IS INITIATED.
      WHEN ENABLED AND STATUS IS SENSED BY THE CURRENT SENSOR, A RUN TIMER WILL BE ACTIVE.
J. DISCHARGE AIR TEMPERATURE CONTROL (DAT RESET) - SYSTEM CONTROLLER SHALL MODULATE HEATING AND COOLING SOURCES AND MIXED AIR DAMPERS TO MAINTAIN AN ADJUSTABLE DISCHARGE AIR TEMPERATURE SETPOINT MEASURED BY A DUCT TEMPERATURE SENSOR LOCATED DOWNSTREAM OF UNIT. RESET DISCHARGE AIR TEMPERATURE SETPOINT AS FOLLOWS:
   1. ALL TERMINAL AIR UNIT ZONE SPACE TEMPERATURES FOR THE SERVING AHU SHALL BE AVERAGED. A REVERSE ACTING PI (PROPORTIONAL, INTEGRAL) LOOP SHALL BE CONFIGURED SUCH THAT THE INPUT SHALL BE THE AVERAGE ZONE SPACE TEMPERATURE AND ITS SETPOINT SHALL BE HALFWAY BETWEEN THE GLOBAL REHEAT AND COOLING SETPOINTS. FOR EXAMPLE, IF THE ZONE SPACE TEMPERATURE REHEAT SETPOINT IS 70°F AND THE ZONE SPACE TEMPERATURE COOLING SETPOINT IS 75°F, THE RESULTING AVERAGE SPACE TEMP SETPOINT WOULD BE 72.5°F.
      a. THE PI LOOP OUTPUT SHALL BE USED AS THE AHU DISCHARGE TEMPERATURE SETPOINT AND SHALL BE LIMITED BETWEEN 55°F AND 75°F (ADJ.).
      b. DISCHARGE AIR TEMPERATURE CONTROL SEQUENCE IS DESIGNED TO MAINTAIN MOST SPACES IN THE AHU SERVED ZONE AT OR CLOSE TO THE AVERAGE SPACE TEMPERATURE SETPOINT WHICH SHOULD POSITION MOST TERMINAL AIR UNITS AT MINIMUM CFM WITH NO REHEAT REQUIRED.
K. DEWPOINT CONTROL - UNIT CONTROLLER SHALL LIMIT THE UNIT DISCHARGE DEW POINT TO 60°F (ADJ.). MODULATE COOLING CONTROL VALVE TO MAINTAIN AN ADJUSTABLE DISCHARGE AIR DEWPOINT SETPOINT MEASURED BY DUCT TEMPERATURE AND HUMIDITY SENSORS LOCATED DOWNSTREAM OF UNIT.
L. COIL PUMP CONTROL BASED ON THE FOLLOWING:
   1. HEATING HOT WATER COIL PUMP SHALL RUN WHEN THE SYSTEM IS IN HEATING MODE (WHEN CV IS GREATER THAN 10% OPEN).
   2. PUMP SHALL RUN CONTINUOUSLY WHENEVER THE OUTDOOR AIR TEMPERATURE IS LESS THAN 36°F.
M. ECONOMIZER CONTROL (ENTHALPY) - SYSTEM CONTROLLER SHALL MODULATE MIXED AIR DAMPERS TO MEET UNIT DISCHARGE AIR TEMPERATURE SETPOINT WHEN OUTDOOR AIR ENTHALPY IS BELOW THE RETURN AIR ENTHALPY.
   1. WHEN BTU CALCULATION FOR OUTDOOR AIR CONDITIONS EXCEEDS 27 BTUH/LB (ADJ.), ECONOMIZER SHALL BE DISABLED.
N. MINIMUM OUTDOOR AIR CONTROL (MEASURED AIRFLOW) - SYSTEM CONTROLLER SHALL MODULATE OUTDOOR AIR DAMPER TO MAINTAIN MINIMUM CFM SETPOINT MEASURED BY AN OUTDOOR AIR FLOW MEASURING STATION.
   1. CLOSE THE RETURN AIR DAMPER AND OPENING OF RELIEF AIR DAMPERS IN EQUAL PROPORTION TO THE OUTSIDE AIR DAMPER.
   2. REFER TO UNIT SCHEDULE FOR THE MINIMUM OUTDOOR AIRFLOW CFM SETPOINT.

SEQUENCE OF OPERATIONS (CONT'D)

AHU-K1 CONTROLS (CONT'D):

O. CO2 CONTROL - SYSTEM CONTROLLER SHALL OVERRIDE MIXED AIR DAMPER CONTROLS IN NON-VFD ECONOMIZING MODE USING SPACE CO2 SENSORS TO INCREASE OUTDOOR MINIMUM CFM TO A MAXIMUM CFM. INCLUDE CORRESPONDING CLOSING RETURN AIR DAMPER AND OPENING OF RELIEF AIR DAMPERS.
   1. UPON SPACE CO2 SENSOR EXCEEDING SETPOINT (800 PPM ADJ.), START TO MODULATE MIXED AIR DAMPERS (OUTDOOR AIR DAMPER OPENING) IN GRADUAL INCREMENTS UNTIL CO2 SENSOR SETPOINT IS SATISFIED.
      a. MODULATE MIXED AIR DAMPERS DOWN TO ITS ABSOLUTE MINIMUM POSITION UPON SATISFYING SENSOR SETPOINT.
      b. REFER TO VAV TERMINAL SEQUENCE FOR ADDITIONAL OPERATIONS AT THE ZONE LEVEL.
   2. ALARM HIGH CO2 AT 1,200 PPM (ADJ.)
   3. REFER TO UNIT SCHEDULE FOR THE OUTDOOR AIR LOW CFM RANGE; HIGH AND LOW SETPOINTS.
P. DE-HUMIDIFICATION CONTROL - SYSTEM CONTROLLER SHALL ENABLE DE-HUMIDIFICATION MODE TO MAINTAIN SPACE HUMIDITY SETPOINT OF 60%RH (ADJ.) MEASURED BY A WALL-MOUNTED HUMIDISTAT.
   1. DE-HUMIDIFICATION CONTROL SHALL OVERRIDE DISCHARGE AIR TEMPERATURE FUNCTION AND RESET DOWN TO 45°F (ADJ.).
   2. DISCHARGE AIR TEMPERATURE SHALL BE RESET BACK UP TO ITS NORMAL (NON-DEHUMIDIFICATION) SETPOINT UPON SATISFACTION OF THE ZONE HUMIDITY SENSOR.
Q. MIXED AIR TEMPERATURE CONTROL - SYSTEM CONTROLLER SHALL MODULATE MIXED AIR DAMPERS WHEN MIXED AIR TEMPERATURE SENSOR FALLS BELOW 45°F (ADJ.), AS OUTDOOR - RELIEF - RETURN DAMPERS SHALL MODULATE TO MAINTAIN A MIXED AIR TEMPERATURE OF 55°F (ADJ.).
   1. PROVIDE OVERRIDE OF MINIMUM OUTDOOR AIR VOLUME SETPOINT IN THE HEATING MODE TO MAINTAIN A 55°F (ADJ.) MIXED AIR TEMPERATURE.
R. FILTER MONITORING - SYSTEM CONTROLLER SHALL MONITOR AND ALARM FILTER DIFFERENTIAL PRESSURE FOR THE FOLLOWING:
   1. FINAL FILTERS
      a. MONITORING OF INCHES OF W.C.
      b. ALARM SETPOINT, COORDINATE WITH FILTER MFR. DIRTY FILTER VALUE, SUGGEST 1.00" W.C. (ADJ.)
   2. PRE-FILTERS
      a. MONITORING OF INCHES OF W.C.
      b. ALARM SETPOINT, COORDINATE WITH FILTER MFR. DIRTY FILTER VALUE, SUGGEST 0.5" W.C. (ADJ.)
S. UNOCCUPIED CONTROL - SYSTEM CONTROLLER SHALL INITIATE THE FOLLOWING BASED ON A FALL OR RISE IN SPACE TEMPERATURE:
   1. HEATING - SYSTEM CONTROLLER SHALL CYCLE SYSTEM ON (UNOCCUPIED HEATING MODE) WHEN A CALL FOR HEAT IS INITIATED BY ANY SPACE TEMPERATURE SENSOR DURING UNOCCUPIED MODE AND HEATING WATER SYSTEM IS OR CAN BE ENABLED. SYSTEM SHALL RESPOND BASED ON THE FOLLOWING:
      a. ENABLE FANS AND SYSTEM SHALL FUNCTION AS DESCRIBED IN OCCUPIED TEMPERATURE CONTROL OPERATION TO PROVIDE HEATING TO ZONE WITH THE EXCEPTION TO THE FOLLOWING:
         • MIXED AIR DAMPERS SHALL REMAIN CLOSED WITH RETURN DAMPER 100% OPENED AND OUTDOOR AND RELIEF 100% CLOSED.
         • COOLING SHALL BE DISABLED.
      b. SYSTEM DISABLED UPON SATISFYING THE CALL FOR HEAT AND HEATING CV SHALL REMAIN UNDER CONTROL OF COIL DISCHARGE AIR TEMPERATURE CONTROL.
   2. COOLING - SYSTEM CONTROLLER SHALL CYCLE SYSTEM ON (UNOCCUPIED COOLING MODE) WHEN A CALL FOR COOLING IS INITIATED BY ANY SPACE TEMPERATURE SENSOR DURING UNOCCUPIED MODE AND CHILLED WATER SYSTEM IS OR CAN BE ENABLED.
      a. ENABLE FANS AND SYSTEM SHALL FUNCTION AS DESCRIBED IN TEMPERATURE CONTROL OPERATION TO PROVIDE COOLING TO THE ZONE WITH THE EXCEPTION TO THE FOLLOWING:
         • MIXED AIR DAMPERS SHALL REMAIN CLOSED WITH RETURN DAMPER 100% OPENED AND OUTDOOR AND RELIEF 100% CLOSED.
         • HEATING SHALL BE DISABLED.
         • ECONOMIZER SHALL BE ENABLE IF OUTDOOR ENTHALPY IS LESS THAN THE RETURN AIR ENTHALPY.
      b. SYSTEM DISABLED UPON SATISFYING THE CALL FOR COOL.
T. HUMIDITY CONTROL - SYSTEM CONTROLLER SHALL CYCLE UNIT ON (UNOCCUPIED DE-HUMIDIFICATION MODE) WHEN A CALL FOR HIGH HUMIDITY IS INITIATED BY ANY SPACE HUMIDISTAT DURING UNOCCUPIED MODE AND CHILLED WATER SYSTEM IS OR CAN BE ENABLED.
   1. ENABLE FANS AND SYSTEM SHALL FUNCTION AS DESCRIBED IN DE-HUMIDIFICATION CONTROL OPERATIONS TO PROVIDE DE-HUMIDIFICATION TO THE ZONE WITH THE EXCEPTION TO THE FOLLOWING:
      a. MIXED AIR DAMPERS SHALL REMAIN CLOSED WITH RETURN DAMPER 100% OPENED AND OUTDOOR AND RELIEF 100% CLOSED.
      b. DISCHARGE AIR TEMPERATURE SETPOINT SHALL BE 55°F (ADJ.).
   2. SYSTEM DISABLED UPON SATISFYING THE CALL FOR HIGH HUMIDITY.
U. INITIAL STARTUP CONTROL - SYSTEM CONTROLLER SHALL ENABLE UNIT PRIOR TO SCHEDULED OCCUPANCY UTILIZING OPTIMUM START LOGIC TO ADJUST STARTUP TIME FOR UNIT BASED ON OUTDOOR AIR TEMPERATURE, BUILDING TEMPERATURE AND HISTORIC ELAPSE TIME TO REACH SETPOINT.
   1. UNIT SHALL ENERGIZE AND PROVIDE HEATING AND COOLING BASED ON THE SPACE TEMPERATURE SENSORS TO BRING SPACE TO OCCUPIED SETPOINT. THE OUTDOOR AND RELIEF AIR DAMPERS SHALL BE CLOSED UNLESS VFD ECONOMIZER IS ENABLED. ONCE OCCUPIED SETPOINT HAS BEEN REACHED, THE UNIT SHALL SWITCH TO OCCUPIED MODE.
V. PRE AND POST OCCUPANCY PURGE – WHEN ENABLED BY THE OPERATOR THE UNIT CONTROLLER WILL BEGIN THE OCCUPIED OPERATION 2 HOURS (ADJ.) PRIOR TO THE SCHEDULED OCCUPANCY AND EXTEND OPERATION 2 HOURS (ADJ.) BEYOND SCHEDULED OCCUPANCY.
   1. OUTDOOR AND RELIEF AIR DAMPERS SHALL BE AT THEIR MAXIMUM OPEN POSITION WHILE MAINTAINING THE MIXED AIR TEMPERATURE LIMIT.
   2. INTEGRATE PRE-PURGE FEATURE WITH THE OPTIMUM START LOGIC TO ALLOW BOTH OPERATIONS TO FUNCTION CONCURRENTLY (OUTDOOR AND RELIEF AIR DAMPERS OPEN) THUS NOT RUNNING SEQUENCES END-TO-END.
W. TIMED OVERRIDE CONTROL - SYSTEM CONTROLLER SHALL ENABLE UNIT WHEN ASSOCIATED TERMINAL UNIT TIMED OVERRIDE (2 HOURS (ADJ)) IS ENABLED, SYSTEM SHALL BE ENABLE AND FUNCTION AS IN OCCUPIED MODE.
X. BI-POLAR IONIZATION (BPI) – ENABLE BPI WHENEVER THE SUPPLY FANS ARE PROVEN ON. DISABLE BPI WHENEVER THE SUPPLY FANS ARE OFF.
   1. WHEN ENABLED AND STATUS IS SENSED BY THE CURRENT SENSOR, A RUN TIMER WILL BE ACTIVE.
Y. SAFETY SHUTDOWNS:
   1. PROVIDE A LOW-TEMPERATURE PROTECTION THERMOSTAT(S) ON THE LEAVING SIDE OF HEATING HOT WATER COIL WHICH WILL DE-ENERGIZE UNIT, CLOSE MIXED AIR DAMPERS (CLOSING OUTDOOR AND RELIEF AIR DAMPERS), CLOSE CHILLED WATER COIL CONTROL VALVE AND THE HEATING HOT WATER COIL CONTROL VALVE SHALL BE FULLY OPENED AND COIL PUMP ENERGIZED. PROVIDE MANUAL RESET.
   2. PROVIDE A HIGH STATIC PRESSURE SENSOR IN THE SUPPLY DISCHARGE PLENUM TO DE-ENERGIZE THE UNIT UPON SENSING A HIGH STATIC PRESSURE OF 4.0" W.C.. PROVIDE MANUAL RESET.
   3. PROVIDE A LOW-PRESSURE STATIC LIMIT IN THE RETURN PLENUM TO DE-ENERGIZE THE UNIT UPON SENSING A HIGH NEGATIVE STATIC PRESSURE OF -4.0" W.C.. PROVIDE MANUAL RESET.
   4. DUCT MOUNTED IONIZATION SMOKE DETECTOR(S) FURNISHED BY DIVISION 28 SHALL DE-ENERGIZE THE UNIT WHENEVER PRODUCTS OF COMBUSTION ARE SENSED.
Z. THE FOLLOWING SHALL BE SUPPLIED AND INSTALLED BY TEMPERATURE CONTROL INSTALLER:
   1. SENSORS (TEMPERATURE, RELATIVE HUMIDITY, CO2, PRESSURE, AIRFLOW MEASURING DEVICES, ACTUATORS)
AA. THE FOLLOWING SHALL BE SUPPLIED BY TEMPERATURE CONTROL INSTALLER AND INSTALLED BY OTHERS:
   1. CONTROL VALVES
   2. DAMPERS

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

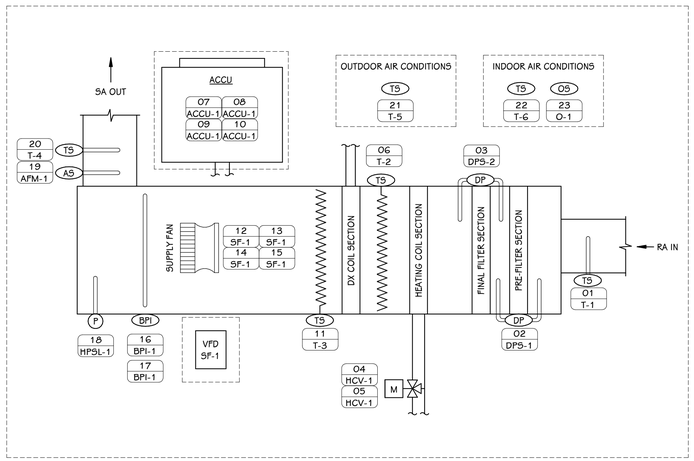
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
TEMPERATURE CONTROLS

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 601
21-807.00

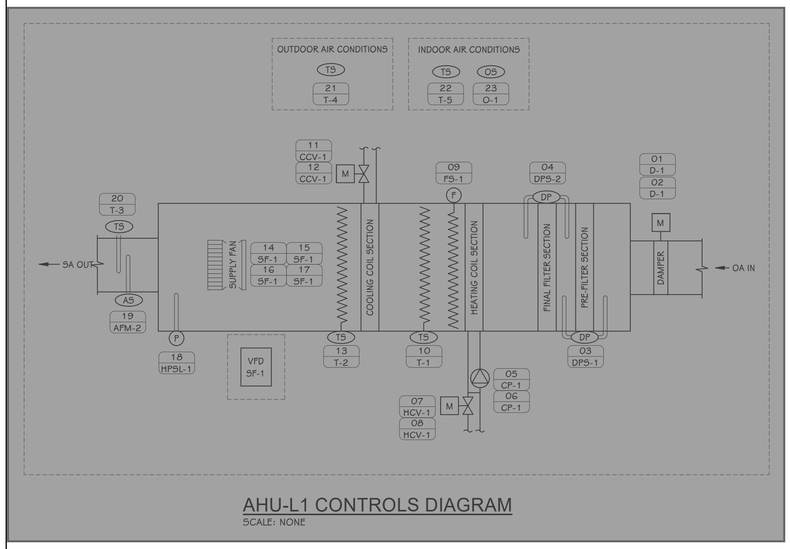


AHU-A1, B1, ~~C1~~ CONTROLS DIAGRAM

SCALE: NONE

CONTROL POINTS

NUMBER	TAG	DESCRIPTION	ALARM	TREND	MISC.	REMARKS
AHU-A1, B1, ~~C1~~						
01	T-1	RETURN AIR TEMPERATURE		■		
02	DP5-1	PRE-FILTER STATUS	■	■		
03	DP5-2	FINAL FILTER STATUS	■	■		
04	HCV-1	HEATING CONTROL VALVE OUTPUT		■		
05	HCV-1	HEATING CONTROL VALVE POSITION	■	■		
06	T-2	HEATING COIL DISCHARGE TEMPERATURE		■		
07	ACCU-1	COOLING SYSTEM ALARM STATUS	■	■		
08	ACCU-1	COOLING SYSTEM RUN STATUS		■		
09	ACCU-1	COOLING SYSTEM ENABLE/DISABLE		■		
10	ACCU-1	COOLING SYSTEM STAGING		■		
11	T-3	COOLING COIL DISCHARGE TEMPERATURE		■		
12	5F-1	FAN AIR FLOW		■		
13	5F-1	FAN SPEED CONTROL		■		
14	5F-1	FAN ENABLE/DISABLE		■		
15	5F-1	FAN RUN STATUS	■	■		
16	BPI-1	BPI STATUS	■	■		
17	BPI-1	BPI ENABLE/DISABLE		■		
18	HP5L-1	HIGH PRESSURE STATIC LIMIT	■	■		HARD WIRED SAFETY - MANUAL RESET
19	AFM-1	TOTAL SUPPLY AIR FLOW		■		
20	T-4	DISCHARGE AIR TEMPERATURE		■		
21	T-5	OUTDOOR AIR TEMPERATURE		■		GLOBAL
22	T-6	INDOOR AIR TEMPERATURE		■		
23	O-1	OCCUPANCY SENSOR (LIGHTING)		■		SENSOR TO BE PROVIDED BY DIV 26
AHU-L1						
01	D-1	OUTDOOR AIR DAMPER OUTPUT		■		
02	D-1	OUTDOOR AIR DAMPER POSITION		■		
03	DP5-1	PRE-FILTER STATUS	■	■		
04	DP5-2	FINAL FILTER STATUS	■	■		
05	CP-1	HEATING COIL PUMP STATUS	■	■		
06	CP-1	HEATING COIL PUMP ENABLE/DISABLE		■		
07	HCV-1	HEATING CONTROL VALVE OUTPUT		■		
08	HCV-1	HEATING CONTROL VALVE POSITION		■		
09	FS-1	FREEZE STAT ALARM STATUS	■	■		HARD WIRED SAFETY - MANUAL RESET
10	T-1	HEATING COIL DISCHARGE TEMPERATURE		■		
11	CCV-1	COOLING CONTROL VALVE OUTPUT		■		
12	CCV-1	COOLING CONTROL VALVE POSITION		■		
13	T-2	COOLING COIL DISCHARGE TEMPERATURE		■		
14	5F-1	FAN AIR FLOW		■		
15	5F-1	FAN SPEED CONTROL		■		
16	5F-1	FAN ENABLE/DISABLE		■		
17	5F-1	FAN RUN STATUS	■	■		
18	HP5L-1	HIGH PRESSURE STATIC LIMIT	■	■		HARD WIRED SAFETY - MANUAL RESET
19	AFM-2	TOTAL SUPPLY AIR FLOW		■		
20	T-3	DISCHARGE AIR TEMPERATURE		■		
21	T-4	OUTDOOR AIR TEMPERATURE		■		GLOBAL
22	T-5	INDOOR AIR TEMPERATURE		■		
23	O-1	OCCUPANCY SENSOR (LIGHTING)		■		SENSOR TO BE PROVIDED BY DIV 26



AHU-L1 CONTROLS DIAGRAM

SCALE: NONE

SEQUENCE OF OPERATIONS

NOTE: ALL LABOR, MATERIAL, EQUIPMENT AND SOFTWARE NOT SPECIFICALLY INDICATED WITHIN CONTROLS DRAWINGS THAT IS REQUIRED TO MEET THE FUNCTIONAL INTENT OF THE SEQUENCE OF OPERATIONS SHALL BE PROVIDED WITHOUT ADDITIONAL COST. POINT LISTS SHALL BE A GUIDE TO THE POINTS REQUIRED FOR CONTROL SYSTEM. FINAL POINTS SHALL BE DETERMINED BY SEQUENCE OF OPERATIONS. ALL SET POINTS SHALL BE OPERATOR ADJUSTABLE THROUGH THE BMS. ALL POINTS SHALL BE TRENDABLE.

AHU-A1, B1, C1 CONTROLS:

1. PROVIDE DIRECT DIGITAL CONTROLS FOR AIR HANDLING SYSTEM OPERATION. UNIT IS AN INDOOR SINGLE ZONE VARIABLE VOLUME UNIT WITH, FILTERS, HOT WATER PREHEAT COIL, DIRECT EXPANSION COIL, BI-POLAR IONIZATION, AND SUPPLY FAN. NO OUTSIDE AIR DAMPERS, NO RELIEF AIR DAMPERS.
2. AIR HANDLING UNIT ADJUSTABLE SCHEDULE BASED ON THE FOLLOWING:
   A. TIME OF DAY (TOD) SCHEDULE.
      a. TO BE DETERMINED BY OWNER (CONSULT WITH OWNER).
      b. SUGGESTED OCCUPIED SCHEDULE: 7AM-5PM M-F, OFF SAT-SUM, OFF HOLIDAYS
   B. ENABLED AND DISABLED BASED ON MANUAL OVERRIDE FROM DDC.
3. AIR HANDLING UNIT ADJUSTABLE SETPOINTS:
   A. OCCUPIED 75°F COOLING / 70°F HEATING
   B. STANDBY 78°F COOLING / 68°F HEATING (BASED ON LIGHTING OCCUPANCY SENSOR(S))
   C. UNOCCUPIED 95°F COOLING / 55°F HEATING
4. START/STOP, CONTROLLED DEVICES SHALL RESPOND AS FOLLOWS:
   A. WHEN INDEXED TO STOP:
      a. DISABLE SUPPLY FAN.
      b. DISABLE DX COOLING.
      c. HEATING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN COIL DISCHARGE AIR TEMPERATURE SENSOR AT 55°F (ADJ.), WHEN OUTDOOR AIR TEMPERATURE IS BELOW 45°F (ADJ.).
   B. WHEN INDEXED TO START:
      a. ENABLE SUPPLY FAN.
      b. OPERATION OF SYSTEM TO RESUME AFTER START-UP DELAY.
5. SUPPLY FAN 4 TEMPERATURE CONTROL - SYSTEM CONTROLLER SHALL MODULATE SUPPLY FAN MOTOR VARIABLE FREQUENCY DRIVE, HEATING AND COOLING SOURCES TO MAINTAIN AN ADJUSTABLE SPACE TEMPERATURE SETPOINT MEASURED BY A SPACE TEMPERATURE THERMOSTAT.
   A. HEATING – UPON A FALL IN SPACE TEMPERATURE BELOW SPACE TEMPERATURE SETPOINT, CONTROLLER SHALL RESPOND BASED ON THE FOLLOWING:
      a. MODULATE HEATING SOURCE (AS FIRST STAGE HEATING) TO MAINTAIN SPACE TEMPERATURE SETPOINT.
         • INCLUDE A MAXIMUM HEATING DISCHARGE TEMPERATURE OF 95°F (ADJ.).
         • SUPPLY FAN AT MINIMUM CFM/SPEED SETPOINT.
      b. MODULATE SUPPLY FAN SPEED (AS SECOND STAGE HEATING) TO MAINTAIN ACTIVE CFM/SPEED SETPOINT MEASURED BY A DUCT/FAN INLET AIR FLOW MEASURING STATION TO MAINTAIN SPACE TEMPERATURE SETPOINT.
         • MINIMUM (30% OF DESIGN CFM) AND MAXIMUM (100% OF DESIGN CFM) CFM SETPOINTS (ADJ.).
      c. UPON A CALL FOR ADDITIONAL HEAT BASED ON SUPPLY FAN(S) ARE DELIVERING MAXIMUM CFM/SPEED (AS THIRD STAGE OF HEATING) OVERRIDE MAXIMUM HEATING DISCHARGE TEMPERATURE.
         • ALLOW HEATING COIL CONTROL VALVE TO MODULATE TO MAINTAIN SPACE TEMPERATE SETPOINT.
   B. COOLING – UPON A RISE IN SPACE TEMPERATURE ABOVE SPACE TEMPERATURE SETPOINT, CONTROLLER SHALL RESPOND BASED ON THE FOLLOWING:
      a. MODULATE SUPPLY FAN SPEED (AS FIRST STAGE COOLING) TO MAINTAIN ACTIVE CFM SETPOINT MEASURED BY FAN INLET AIR FLOW MEASURING STATION TO MAINTAIN SPACE TEMPERATURE SETPOINT.
         • MINIMUM (30% OF DESIGN CFM) AND MAXIMUM (100% OF DESIGN CFM) CFM SETPOINTS (ADJ.).
         • MECHANICAL COOLING COIL SHALL BE UTILIZED (AS FIRST STAGE COOLING)
         • DISCHARGE AIR TEMPERATURE IS 60°F (ADJ).
      b. MODULATE COOLING SOURCE (AS SECOND STAGE COOLING) TO MAINTAIN SPACE TEMPERATURE SETPOINT.
         • SUPPLY FAN(S) SHALL BE AT MAXIMUM CFM SETPOINT.
         • DISCHARGE AIR TEMPERATURE MODULATED BETWEEN 60°F AND 55°F
6. FAN VARIABLE FREQUENCY CONTROLLER(S) SHALL BE MONITORED BASED ON THE FOLLOWING:
   a. VIA BACNET/MODBUS CONNECTION (POWER USAGE / SPEED % AND HZ / HOURS / FAULT / ALARM)
7. FAN(S) INITIAL START-UP CONTROL – WHEN INDEXED TO START, SYSTEM CONTROLLER SHALL ENABLE FAN(S) BASED ON THE FOLLOWING:
   A. WHEN ENABLED, AND AFTER A DELAY OF TWO (2) MINUTES (ADJ.) WITH NO STATUS SENSED, DDC SHALL INDICATE A CRITICAL ALARM.
      a. IF ANY FAN STATUS IS NOT SENSED, THE SYSTEM SHALL BE DISABLED.
   B. WHEN ENABLED AND STATUS IS SENSED BY THE CURRENT SENSOR, A TOTALIZES OF RUN HOURS FOR FAN WILL BE ACTIVE.
8. FILTER MONITORING - SYSTEM CONTROLLER SHALL MONITOR AND ALARM FILTER PRESSURE DIFFERENTIAL PRESSURE DROP FOR THE FOLLOWING:
   A. FILTERS
      a. MONITORING OF DIFFERENTIAL PRESSURE
      b. ALARM SETPOINT 1.00" W.C. (ADJ.)
9. UNOCCUPIED CONTROL – SYSTEM CONTROLLER SHALL INITIATE THE FOLLOWING BASED ON A FALL OR RISE IN SPACE TEMPERATURE:
   A. HEATING - SYSTEM CONTROLLER SHALL CYCLE SYSTEM ON (UNOCCUPIED HEATING MODE) WHEN A CALL FOR HEAT IS INITIATED BY A SPACE TEMPERATURE SENSOR(S) DURING UNOCCUPIED MODE AND HEATING SYSTEM IS OR CAN BE ENABLED. SYSTEM SHALL RESPOND BASED ON THE FOLLOWING:
      a. ENABLE FAN(S) AND SYSTEM SHALL FUNCTION AS DESCRIBED IN TEMPERATURE CONTROL OPERATION TO PROVIDE HEATING TO ZONE.
      b. SYSTEM DISABLED UPON SATISFYING THE CALL FOR HEAT AND HEATING COIL CONTROL VALVE SHALL REMAIN UNDER CONTROL OF COIL DISCHARGE AIR TEMPERATURE CONTROL.
   B. COOLING – NO UNOCCUPIED COOLING
10. INITIAL STARTUP CONTROL - SYSTEM CONTROLLER SHALL ENABLE UNIT PRIOR TO SCHEDULED OCCUPANCY UTILIZING OPTIMUM START LOGIC TO ADJUST STARTUP TIME FOR UNIT BASED ON OUTDOOR AIR TEMPERATURE, BUILDING TEMPERATURE AND HISTORIC ELAPSE TIME TO REACH SETPOINT.
   A. UNIT SHALL ENERGIZE AND PROVIDE HEATING AND COOLING BASED ON THE SPACE TEMPERATURE SENSOR(S) TO BRING SPACE TO OCCUPIED SETPOINT. ONCE OCCUPIED SETPOINT HAS BEEN REACHED, THE UNIT SHALL SWITCH TO OCCUPIED MODE.
11. SAFETY SHUTDOWNS:
   A. PROVIDE A HIGH STATIC PRESSURE SENSOR IN THE SUPPLY DISCHARGE PLENUM TO DE-ENERGIZE THE UNIT UPON SENSING A HIGH STATIC PRESSURE OF 4.0" W.C. (ADJ). PROVIDE MANUAL RESET.
   B. DUCT MOUNTED IONIZATION SMOKE DETECTOR(S) PROVIDED BY DIVISION 28 SHALL DE-ENERGIZE THE UNIT WHENEVER PRODUCTS OF COMBUSTION ARE SENSED.
12. THE FOLLOWING SHALL BE SUPPLIED AND INSTALLED BY TEMPERATURE CONTROL INSTALLER:
   A. CONTROL VALVE
   B. SENSORS
13. THE FOLLOWING SHALL BE SUPPLIED BY TEMPERATURE CONTROL INSTALLER AND INSTALLED BY OTHERS:
   A. CONTROL VALVES

SEQUENCE OF OPERATIONS (CONT'D)

AHU-L1 CONTROLS:

1. PROVIDE DIRECT DIGITAL CONTROLS FOR AIR HANDLING SYSTEM OPERATION. UNIT IS AN INDOOR SINGLE ZONE VARIABLE VOLUME UNIT WITH 100% OUTSIDE AIR, NO RELIEF AIR, FILTERS, PUMPED HOT WATER PREHEAT COIL, CHILLED WATER COIL WITH CONTROL VALVE AND ACTUATOR, AND SUPPLY FAN. NO BI-POLAR IONIZATION.
2. AIR HANDLING UNIT ADJUSTABLE SCHEDULE BASED ON THE FOLLOWING:
   A. TIME OF DAY (TOD) SCHEDULE.
      a. TO BE DETERMINED BY OWNER (CONSULT WITH OWNER).
      b. SUGGESTED OCCUPIED SCHEDULE: 7AM-5PM M-F, OFF SAT-SUM, OFF HOLIDAYS
   B. ENABLED AND DISABLED BASED ON MANUAL OVERRIDE FROM DDC.
3. AIR HANDLING UNIT ADJUSTABLE SETPOINTS:
   A. OCCUPIED 75°F COOLING / 70°F HEATING
   B. STANDBY 78°F COOLING / 68°F HEATING (BASED ON LIGHTING OCCUPANCY SENSOR(S))
   C. UNOCCUPIED 95°F COOLING / 55°F HEATING
4. START/STOP, CONTROLLED DEVICES SHALL RESPOND AS FOLLOWS:
   A. WHEN INDEXED TO STOP:
      a. DISABLE SUPPLY FAN.
      b. COOLING CV 100% CLOSED.
      c. HEATING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN COIL DISCHARGE AIR TEMPERATURE SENSOR AT 55°F (ADJ.), WHEN OUTDOOR AIR TEMPERATURE IS BELOW 45°F (ADJ.).
      d. OUTDOOR DAMPER 100% CLOSED.
   B. WHEN INDEXED TO START:
      a. ENABLE SUPPLY FAN.
      b. OPERATION OF SYSTEM TO RESUME AFTER START-UP DELAY.
      c. BELOW 36°F OAT, THE COIL PUMP SHALL START AND HEATING WATER VALVE SHALL OPEN WITH THE OUTSIDE AIR DAMPER TO PREVENT COIL FREEZING. RESUME OCCUPIED CONTROL UPON TIME DELAY FOR SYSTEM STABALIZATION.
5. SUPPLY FAN 4 TEMPERATURE CONTROL - SYSTEM CONTROLLER SHALL MODULATE SUPPLY FAN MOTOR VARIABLE FREQUENCY DRIVE, HEATING AND COOLING SOURCES TO MAINTAIN AN ADJUSTABLE SPACE TEMPERATURE SETPOINT MEASURED BY A SPACE TEMPERATURE THERMOSTAT.
   A. HEATING – UPON A FALL IN SPACE TEMPERATURE BELOW SPACE TEMPERATURE SETPOINT, CONTROLLER SHALL RESPOND BASED ON THE FOLLOWING:
      a. MODULATE HEATING SOURCE (AS FIRST STAGE HEATING) TO MAINTAIN SPACE TEMPERATURE SETPOINT.
         • INCLUDE A MAXIMUM HEATING DISCHARGE TEMPERATURE OF 95°F (ADJ.).
         • SUPPLY FAN AT MINIMUM CFM/SPEED SETPOINT.
      b. MODULATE SUPPLY FAN SPEED (AS SECOND STAGE HEATING) TO MAINTAIN ACTIVE CFM/SPEED SETPOINT MEASURED BY A DUCT/FAN INLET AIR FLOW MEASURING STATION TO MAINTAIN SPACE TEMPERATURE SETPOINT.
         • MINIMUM (30% OF DESIGN CFM) AND MAXIMUM (100% OF DESIGN CFM) CFM SETPOINTS (ADJ.).
      c. UPON A CALL FOR ADDITIONAL HEAT BASED ON SUPPLY FAN(S) ARE DELIVERING MAXIMUM CFM/SPEED (AS THIRD STAGE OF HEATING) OVERRIDE MAXIMUM HEATING DISCHARGE TEMPERATURE.
         • ALLOW HEATING COIL CONTROL VALVE TO MODULATE TO MAINTAIN SPACE TEMPERATE SETPOINT.
   B. COOLING – UPON A RISE IN SPACE TEMPERATURE ABOVE SPACE TEMPERATURE SETPOINT, CONTROLLER SHALL RESPOND BASED ON THE FOLLOWING:
      a. MODULATE SUPPLY FAN SPEED (AS FIRST STAGE COOLING) TO MAINTAIN ACTIVE CFM SETPOINT MEASURED BY FAN INLET AIR FLOW MEASURING STATION TO MAINTAIN SPACE TEMPERATURE SETPOINT.
         • MINIMUM (30% OF DESIGN CFM) AND MAXIMUM (100% OF DESIGN CFM) CFM SETPOINTS (ADJ.).
         • MECHANICAL COOLING COIL SHALL BE UTILIZED (AS FIRST STAGE COOLING)
         • DISCHARGE AIR TEMPERATURE IS 60°F (ADJ).
      b. MODULATE COOLING SOURCE (AS SECOND STAGE COOLING) TO MAINTAIN SPACE TEMPERATURE SETPOINT.
         • SUPPLY FAN(S) SHALL BE AT MAXIMUM CFM SETPOINT.
         • DISCHARGE AIR TEMPERATURE MODULATED BETWEEN 60°F AND 55°F
6. FAN VARIABLE FREQUENCY CONTROLLER(S) SHALL BE MONITORED BASED ON THE FOLLOWING:
   a. VIA BACNET/MODBUS CONNECTION (POWER USAGE / SPEED % AND HZ / HOURS / FAULT / ALARM)
7. FAN(S) INITIAL START-UP CONTROL – WHEN INDEXED TO START, SYSTEM CONTROLLER SHALL ENABLE FAN(S) BASED ON THE FOLLOWING:
   A. WHEN ENABLED, AND AFTER A DELAY OF TWO (2) MINUTES (ADJ.) WITH NO STATUS SENSED, DDC SHALL INDICATE A CRITICAL ALARM.
      a. IF ANY FAN STATUS IS NOT SENSED, THE SYSTEM SHALL BE DISABLED.
   B. WHEN ENABLED AND STATUS IS SENSED BY THE CURRENT SENSOR, A TOTALIZES OF RUN HOURS FOR FAN WILL BE ACTIVE.
8. COIL PUMP CONTROL BASED ON THE FOLLOWING:
   A. HEATING HOT WATER COIL PUMP SHALL RUN WHEN THE SYSTEM IS IN HEATING MODE (WHEN CV IS GREATER THAN 10% OPEN).
   B. PUMP SHALL RUN CONTINUOUSLY WHENEVER THE OUTDOOR AIR TEMPERATURE IS LESS THAN 36°F.
9. FILTER MONITORING - SYSTEM CONTROLLER SHALL MONITOR AND ALARM FILTER PRESSURE DIFFERENTIAL PRESSURE DROP FOR THE FOLLOWING:
   A. FILTERS
      a. MONITORING OF DIFFERENTIAL PRESSURE
      b. ALARM SETPOINT 1.00" W.C. (ADJ.)
10. UNOCCUPIED CONTROL – SYSTEM CONTROLLER SHALL INITIATE THE FOLLOWING BASED ON A FALL OR RISE IN SPACE TEMPERATURE:
   A. HEATING - SYSTEM CONTROLLER SHALL CYCLE SYSTEM ON (UNOCCUPIED HEATING MODE) WHEN A CALL FOR HEAT IS INITIATED BY A SPACE TEMPERATURE SENSOR(S) DURING UNOCCUPIED MODE AND HEATING SYSTEM IS OR CAN BE ENABLED. SYSTEM SHALL RESPOND BASED ON THE FOLLOWING:
      a. ENABLE FAN(S) AND SYSTEM SHALL FUNCTION AS DESCRIBED IN TEMPERATURE CONTROL OPERATION TO PROVIDE HEATING TO ZONE
      b. SYSTEM DISABLED UPON SATISFYING THE CALL FOR HEAT AND HEATING COIL CONTROL VALVE SHALL REMAIN UNDER CONTROL OF COIL DISCHARGE AIR TEMPERATURE CONTROL.
   B. COOLING – NO UNOCCUPIED COOLING
11. INITIAL STARTUP CONTROL - SYSTEM CONTROLLER SHALL ENABLE UNIT PRIOR TO SCHEDULED OCCUPANCY UTILIZING OPTIMUM START LOGIC TO ADJUST STARTUP TIME FOR UNIT BASED ON OUTDOOR AIR TEMPERATURE, BUILDING TEMPERATURE AND HISTORIC ELAPSE TIME TO REACH SETPOINT.
   A. UNIT SHALL ENERGIZE AND PROVIDE HEATING AND COOLING BASED ON THE SPACE TEMPERATURE SENSOR(S) TO BRING SPACE TO OCCUPIED SETPOINT. ONCE OCCUPIED SETPOINT HAS BEEN REACHED, THE UNIT SHALL SWITCH TO OCCUPIED MODE.
12. SAFETY SHUTDOWNS:
   A. PROVIDE A LOW-TEMPERATURE PROTECTION THERMOSTAT(S) ON THE LEAVING SIDE OF HEATING HOT WATER COIL WHICH WILL DE-ENERGIZE UNIT, CLOSE MIXED AIR DAMPERS (CLOSING OUTDOOR/RELIEF/EXHAUST AIR DAMPER(S)), THE HEATING HOT WATER COIL CONTROL VALVE SHALL BE FULLY OPENED AND COIL PUMP ENERGIZED. PROVIDE MANUAL RESET.
   B. PROVIDE A HIGH STATIC PRESSURE SENSOR IN THE SUPPLY DISCHARGE PLENUM TO DE-ENERGIZE THE UNIT UPON SENSING A HIGH STATIC PRESSURE OF 4.0" W.C. (ADJ). PROVIDE MANUAL RESET.
   C. DUCT MOUNTED IONIZATION SMOKE DETECTOR(S) PROVIDED BY DIVISION 28 SHALL DE-ENERGIZE THE UNIT WHENEVER PRODUCTS OF COMBUSTION ARE SENSED.
13. THE FOLLOWING SHALL BE SUPPLIED AND INSTALLED BY TEMPERATURE CONTROL INSTALLER:
   A. CONTROL VALVE AND DAMPER ACTUATORS
   B. SENSORS
14. THE FOLLOWING SHALL BE SUPPLIED BY TEMPERATURE CONTROL INSTALLER AND INSTALLED BY OTHERS:
   A. CONTROL VALVES
   B. DAMPERS

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

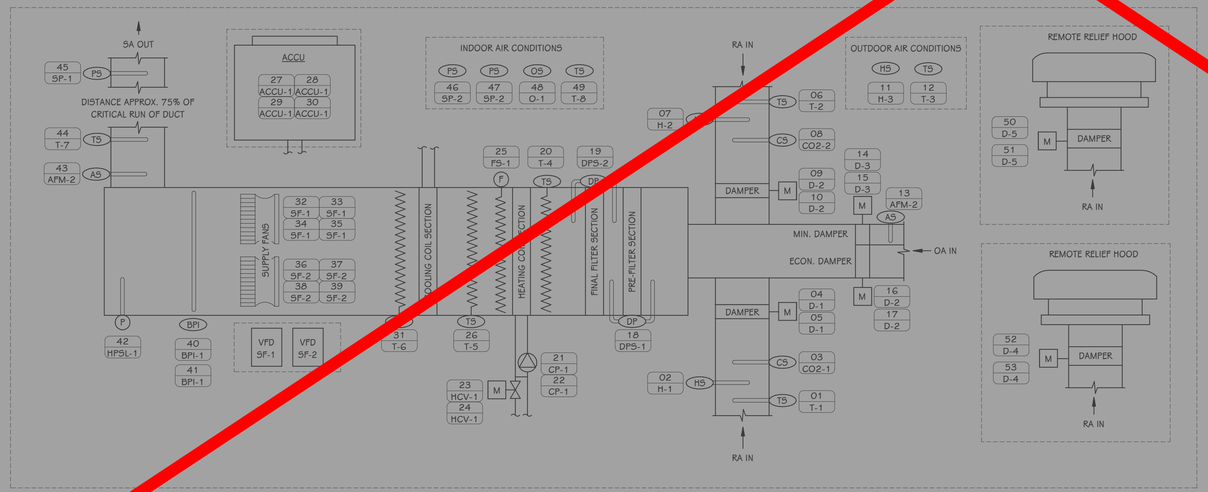
SHEET TITLE
TEMPERATURE CONTROLS

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 602
21-807.00

CONTROL POINTS

NUMBER	TAG	DESCRIPTION	ALARM	TREND	MISC.	REMARKS
AHU-M1						
01	T-1	RETURN AIR TEMPERATURE		■		
02	H-1	RETURN AIR HUMIDITY		■		DISPLAY ENTHALPY BASED ON T&H READINGS
03	CO2-1	RETURN AIR CARBON DIOXIDE	■	■		
04	D-1	RETURN AIR DAMPER OUTPUT		■		
05	D-1	RETURN AIR DAMPER POSITION		■		
06	T-2	RETURN AIR TEMPERATURE		■		
07	H-2	RETURN AIR HUMIDITY		■		DISPLAY ENTHALPY BASED ON T&H READINGS
08	CO2-2	RETURN AIR CARBON DIOXIDE	■	■		
09	D-2	RETURN AIR DAMPER OUTPUT		■		
10	D-2	RETURN AIR DAMPER POSITION		■		
11	H-3	OUTDOOR AIR HUMIDITY		■		GLOBAL - DISPLAY ENTHALPY BASED ON T&H READINGS
12	T-3	OUTDOOR AIR TEMPERATURE		■		GLOBAL
13	AFM-2	MINIMUM OUTDOOR AIR FLOW		■		
14	D-3	MINIMUM OUTDOOR AIR DAMPER POSITION		■		
15	D-3	MINIMUM OUTDOOR AIR DAMPER OUTPUT		■		
16	D-2	ECONOMIZER OUTDOOR AIR DAMPER POSITION		■		
17	D-2	ECONOMIZER OUTDOOR AIR DAMPER OUTPUT		■		
18	DPS-1	PRE-FILTER STATUS	■	■		
19	DPS-2	FINAL FILTER STATUS	■	■		
20	T-4	MIXED AIR TEMPERATURE		■		
21	CP-1	HEATING COIL PUMP STATUS	■	■		
22	CP-1	HEATING COIL PUMP ENABLE/DISABLE		■		
23	HCV-1	HEATING CONTROL VALVE OUTPUT		■		
24	HCV-1	HEATING CONTROL VALVE POSITION		■		
25	FS-1	FREEZE STAT ALARM STATUS	■	■		HARD WIRED SAFETY - MANUAL RESET
26	T-5	HEATING COIL DISCHARGE TEMPERATURE		■		
27	ACCU-1	COOLING SYSTEM ALARM STATUS	■	■		
28	ACCU-1	COOLING SYSTEM RUN STATUS		■		
29	ACCU-1	COOLING SYSTEM ENABLE/DISABLE		■		
30	ACCU-1	COOLING SYSTEM STAGING		■		
31	T-6	COOLING COIL DISCHARGE TEMPERATURE		■		
32	SF-1	FAN AIR FLOW		■		
33	SF-1	FAN SPEED CONTROL		■		
34	SF-1	FAN ENABLE/DISABLE		■		
35	SF-1	FAN STATUS	■	■		
36	SF-2	FAN AIR FLOW		■		
37	SF-2	FAN SPEED CONTROL		■		
38	SF-2	FAN ENABLE/DISABLE		■		
39	SF-2	FAN STATUS	■	■		
40	BPI-1	BPI STATUS	■	■		
41	BPI-1	BPI ENABLE/DISABLE		■		
42	HPSL-1	HIGH PRESSURE STATIC LIMIT	■	■		HARD WIRED SAFETY - MANUAL RESET
43	AFM-2	TOTAL SUPPLY AIR FLOW		■		
44	T-7	DISCHARGE AIR TEMPERATURE		■		
45	SP-1	SUPPLY AIR STATIC PRESSURE		■		NOTE LOCATION OF PRESS/BUILTS
46	SP-2	ZONE PRESSURE		■		
47	SP-2	ZONE PRESSURE		■		
48	O-1	OCCUPANCY SENSOR (LIGHTING)		■		SENSOR TO BE PROVIDED BY DIV 26
49	T-8	INDOOR AIR TEMPERATURE		■		
50	D-5	RELIEF AIR DAMPER OUTPUT		■		
51	D-5	RELIEF AIR DAMPER POSITION		■		
52	D-4	RELIEF AIR DAMPER OUTPUT		■		
53	D-4	RELIEF AIR DAMPER POSITION		■		



AHU-M1 CONTROLS DIAGRAM

SCALE: NONE

SEQUENCE OF OPERATIONS

NOTE: ALL LABOR, MATERIAL, EQUIPMENT AND SOFTWARE NOT SPECIFICALLY INDICATED WITHIN CONTROLS DRAWINGS THAT IS REQUIRED TO MEET THE FUNCTIONAL INTENT OF THE SEQUENCE OF OPERATIONS SHALL BE PROVIDED WITHOUT ADDITIONAL COST. POINT LISTS SHALL BE A GUIDE TO THE POINTS REQUIRED FOR CONTROL SYSTEM. FINAL POINTS SHALL BE DETERMINED BY SEQUENCE OF OPERATIONS. ALL SET POINTS SHALL BE OPERATOR ADJUSTABLE THROUGH THE BMS. ALL POINTS SHALL BE TRENDABLE.

AHU-M1 CONTROLS:

1. PROVIDE DIRECT DIGITAL CONTROLS FOR AIR HANDLING SYSTEM OPERATION. UNIT IS AN INDOOR MULTI ZONE VARIABLE VOLUME UNIT WITH, DUCT MOUNTED ECONOMIZER & MINIMUM OUTSIDE AIR DAMPERS, REMOTE RELIEF HOOD AND DAMPER, FILTERS, PUMPED HOT WATER PREHEAT COIL, DIRECT EXPANSION COIL, BI-POLAR IONIZATION, AND SUPPLY FAN.
2. AIR HANDLING UNIT ADJUSTABLE SCHEDULE BASED ON THE FOLLOWING:
   A. TIME OF DAY (TOD) SCHEDULE.
      a. TO BE DETERMINED BY OWNER (CONSULT WITH OWNER).
      b. SUGGESTED OCCUPIED SCHEDULE: 7AM-5PM M-F, OFF SAT-SUM, OFF HOLIDAYS
   B. ENABLED AND DISABLED BASED ON MANUAL OVERRIDE FROM DDC.
3. AIR HANDLING UNIT ADJUSTABLE SETPOINTS:
   A. OCCUPIED 75°F COOLING / 70°F HEATING
   B. STANDBY 78°F COOLING / 68°F HEATING (BASED ON LIGHTING OCCUPANCY SENSOR(S))
   C. UNOCCUPIED 95°F COOLING / 55°F HEATING
   D. CO2 800 PPM MINIMUM / 1,200 PPM MAXIMUM
4. START/STOP, CONTROLLED DEVICES SHALL RESPOND AS FOLLOWS:
   A. WHEN INDEXED TO STOP:
      a. DISABLE SUPPLY FANS.
      b. DISABLE DX COOLING.
      c. HEATING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN COIL DISCHARGE AIR TEMPERATURE SENSOR AT 55°F (ADJ.), WHEN OUTDOOR AIR TEMPERATURE IS BELOW 45°F (ADJ.).
      d. OUTDOOR AND RELIEF AIR DAMPERS 100% CLOSED.
      e. RETURN AIR DAMPER 100% OPENED.
   B. WHEN INDEXED TO START:
      a. ENABLE SUPPLY FAN.
      b. OPERATION OF SYSTEM TO RESUME AFTER START-UP DELAY.
5. SUPPLY FAN CONTROL (STATIC RESET) - SYSTEM CONTROLLER SHALL MODULATE SUPPLY FAN EC MOTORS TO MAINTAIN AN ADJUSTABLE DUCT STATIC PRESSURE SETPOINT MEASURED BY A DUCT STATIC PRESSURE CONTROLLER LOCATED 75% OF MAXIMUM MAIN DUCT DISTANCE DOWNSTREAM OF SYSTEM (FINAL POSITION TO BE PROPOSED BY CONTRACTOR AND APPROVED BY ENGINEER). RESET STATIC PRESSURE DIFFERENTIAL SETPOINT BASED ON THE FOLLOWING:
   A. STATIC PRESSURE SETPOINT SHALL BE RESET USING "TRIM AND RESPOND" LOGIC WITHIN THE RANGE OF 0.15" W.C. TO 1.75" W.C. (ADJ.). WHEN THE SYSTEM IS OFF, THE SETPOINT SHALL BE 0.5" W.C. (ADJ.). WHEN SYSTEM IS ON, EVERY TEN (10) SECONDS, TRIM THE SETPOINT BY 0.04" W.C. IF THERE ARE TWO (2) OR FEWER ZONE PRESSURE REQUESTS. IF THERE ARE MORE THAN TWO (2) ZONE PRESSURE REQUESTS, RESPOND BY INCREASING THE SETPOINT BY 0.06" W.C..
      a. A REQUEST IS GENERATED WHENEVER TERMINAL UNIT DAMPER IS GREATER THAN 90% (ADJ.) OPEN UNTIL IT DROPS TO 80% (ADJ.) OPEN.
      b. EXCLUDE ANY TERMINAL UNITS SET-UP AS CONSTANT VOLUME FROM "TRIM AND RESPOND" LOGIC.
      c. PROVIDE THE ABILITY TO OMIT ANY VAV TERMINAL UNITS FROM "TRIM AND RESPOND" LOGIC.
      d. TEST AND BALANCE CONTRACTOR SHALL PROVIDE MINIMUM AND MAXIMUM STATIC SETPOINTS, WHICH WILL BE DETERMINED DURING THE BALANCING PROCESS.
   B. DISCHARGE PRESSURE HIGH LIMIT WILL CONTROL STATIC PRESSURE AT UNIT FROM EXCEEDING 3.0" W.G. (ADJ.) WITH OVERRIDE CONTROL OF SUPPLY FANS EC MOTORS.
6. FAN VARIABLE FREQUENCY CONTROLLER(S) SHALL BE MONITORED BASED ON THE FOLLOWING:
   a. VIA BACNET/MODBUS CONNECTION (POWER USAGE / SPEED % AND HZ / HOURS / FAULT / ALARM)
7. FAN(S) INITIAL START-UP CONTROL – WHEN INDEXED TO START, SYSTEM CONTROLLER SHALL ENABLE FAN(S) BASED ON THE FOLLOWING:
   A. WHEN ENABLED, AND AFTER A DELAY OF TWO (2) MINUTES (ADJ.) WITH NO STATUS SENSED, DDC SHALL INDICATE A CRITICAL ALARM.
      a. IF ANY FAN STATUS IS NOT SENSED, THE SYSTEM SHALL BE DISABLED.
   B. WHEN ENABLED AND STATUS IS SENSED BY THE CURRENT SENSOR, A TOTALIZES OF RUN HOURS FOR FAN WILL BE ACTIVE.
8. COIL PUMP CONTROL BASED ON THE FOLLOWING:
   A. HEATING HOT WATER COIL PUMP SHALL RUN WHEN THE SYSTEM IS IN HEATING MODE (WHEN CV IS GREATER THAN 10% OPEN).
   B. PUMP SHALL RUN CONTINUOUSLY WHENEVER THE OUTDOOR AIR TEMPERATURE IS LESS THAN 36°F.
9. ECONOMIZER CONTROL - SYSTEM CONTROLLER SHALL MODULATE MIXED AIR DAMPERS TO MEET UNIT DISCHARGE AIR TEMPERATURE SETPOINT WHEN OUTDOOR AIR ENTHALPY IS BELOW THE RETURN AIR ENTHALPY BUT ABOVE ECONOMIZING SETPOINT.
   A. WHEN BTU CALCULATION FOR OUTDOOR AIR CONDITIONS EXCEEDS 25 BTUH/LB (ADJ.), ECONOMIZER SHALL BE DISABLED.
   B. MODULATE RELIEF AIR DAMPER TO MAINTAIN A SLIGHT POSITIVE ZONE PRESSURE AS MEASURED BY ZONE PRESSURE SENSOR.
10. MINIMUM OUTDOOR AIR CONTROL - SYSTEM CONTROLLER SHALL MODULATE MIXED AIR DAMPERS TO MAINTAIN MINIMUM CFM SETPOINT MEASURED BY AN OUTDOOR AIR FLOW MEASURING STATION. LIMIT THE CLOSING OF THE OUTDOOR AIR DAMPER TO PROVIDE ABSOLUTE MINIMUM OUTDOOR AIR FLOW.
   A. OUTDOOR – RELIEF/EXHAUST – RETURN MODULATING WITH ONE SIGNAL FROM CONTROLLER.
   B. REFER TO UNIT SCHEDULE FOR THE ABSOLUTE MINIMUM OUTDOOR AIRFLOW CFM SETPOINT.
   C. MODULATE RELIEF AIR DAMPER TO MAINTAIN A SLIGHT POSITIVE ZONE PRESSURE AS MEASURED BY ZONE PRESSURE SENSOR.
11. CO2 CONTROL - SYSTEM CONTROLLER SHALL OVERRIDE MIXED AIR DAMPER CONTROLS IN NON-ECONOMIZING MODE USING SPACE CO2 SENSOR TO INCREASE OUTDOOR MINIMUM CFM TO A MAXIMUM CFM. INCLUDE CORRESPONDING CLOSING RETURN AIR DAMPER AND OPENING OF RELIEF/EXHAUST AIR DAMPERS.
   A. UPON RETURN SPACE CO2 SENSOR EXCEEDING SETPOINT (CFM ADJ.), START TO MODULATE MIXED AIR DAMPERS (OUTDOOR AIR DAMPER OPENING) IN GRADUAL INCREMENTS UNTIL CO2 SENSOR SETPOINT IS SATISFIED.
      a. MODULATE MIXED AIR DAMPERS DOWN TO ITS ABSOLUTE MINIMUM POSITION UPON SATISFYING SENSOR SETPOINT.
   B. ALARM HIGH CO2, 1,200 PPM (ADJ.)
   C. REFER TO UNIT SCHEDULE FOR THE MAXIMUM OUTDOOR AIRFLOW CFM SETPOINT.
   D. MODULATE RELIEF AIR DAMPER TO MAINTAIN A SLIGHT POSITIVE ZONE PRESSURE AS MEASURED BY ZONE PRESSURE SENSOR.
12. MIXED AIR TEMPERATURE CONTROL - SYSTEM CONTROLLER SHALL MODULATE MIXED AIR DAMPERS WHEN MIXED AIR TEMPERATURE SENSOR FALLS BELOW 45°F, THE OUTDOOR – RELIEF/EXHAUST - RETURN DAMPERS SHALL MODULATE TO MAINTAIN A MIXED AIR TEMPERATURE OF 55°F.
   A. PROVIDE OVERRIDE OF MINIMUM OUTDOOR AIR VOLUME SETPOINT IN THE HEATING MODE TO MAINTAIN A 55°F MIXED AIR TEMPERATURE.
13. FILTER MONITORING - SYSTEM CONTROLLER SHALL MONITOR AND ALARM FILTER PRESSURE DIFFERENTIAL PRESSURE DROP FOR THE FOLLOWING:
   A. FILTERS
      a. MONITORING OF DIFFERENTIAL PRESSURE
      b. ALARM SETPOINT 1.00" W.C. (ADJ.)

SEQUENCE OF OPERATIONS (CONT'D)

AHU-M1 CONTROLS (CONTINUED):

14. UNOCCUPIED CONTROL – SYSTEM CONTROLLER SHALL INITIATE THE FOLLOWING BASED ON A FALL OR RISE IN SPACE TEMPERATURE:
   A. HEATING – SYSTEM CONTROLLER SHALL CYCLE SYSTEM ON (UNOCCUPIED HEATING MODE) WHEN A CALL FOR HEAT IS INITIATED BY A SPACE TEMPERATURE SENSOR(S) DURING UNOCCUPIED MODE AND HEATING SYSTEM IS OR CAN BE ENABLED. SYSTEM SHALL RESPOND BASED ON THE FOLLOWING:
      a. ENABLE FAN(S) AND SYSTEM SHALL FUNCTION AS DESCRIBED IN TEMPERATURE CONTROL OPERATION TO PROVIDE HEATING TO ZONE WITH THE EXCEPTION TO THE FOLLOWING:
         • MIXED AIR DAMPERS SHALL REMAIN CLOSED WITH RETURN AIR DAMPER 100% OPENED AND OUTDOOR AND RELIEF/EXHAUST 100% CLOSED.
         • COOLING SHALL BE DISABLED.
      b. SYSTEM DISABLED UPON SATISFYING THE CALL FOR HEAT AND HEATING COIL CONTROL VALVE SHALL REMAIN UNDER CONTROL OF COIL DISCHARGE AIR TEMPERATURE CONTROL.
   B. COOLING – NO UNOCCUPIED COOLING.
15. INITIAL START-UP CONTROL – SYSTEM CONTROLLER SHALL ENABLE UNIT PRIOR TO SCHEDULED OCCUPANCY UTILIZING OPTIMUM START LOGIC TO ADJUST START-UP TIME FOR UNIT BASED ON OUTDOOR AIR TEMPERATURE, BUILDING TEMPERATURE AND HISTORIC ELAPSE TIME TO REACH SETPOINT.
   A. UNIT SHALL ENERGIZE AND PROVIDE HEATING AND COOLING BASED ON THE SPACE TEMPERATURE SENSOR(S) TO BRING SPACE TO OCCUPIED SETPOINT. THE OUTDOOR AND RELIEF/EXHAUST AIR DAMPERS SHALL BE CLOSED UNLESS ECONOMIZER IS ENABLED. ONCE OCCUPIED SETPOINT HAS BEEN REACHED, THE UNIT SHALL SWITCH TO OCCUPIED MODE.
16. DISCHARGE AIR TEMPERATURE CONTROL (DAT RESET) - SYSTEM CONTROLLER SHALL MODULATE HEATING AND COOLING SOURCES AND MIXED AIR DAMPERS TO MAINTAIN AN ADJUSTABLE DISCHARGE AIR TEMPERATURE SETPOINT MEASURED BY A DUCT TEMPERATURE SENSOR LOCATED DOWNSTREAM OF UNIT. RESET DISCHARGE AIR TEMPERATURE SETPOINT AS FOLLOWS:
   A. ALL TERMINAL AIR UNIT ZONE SPACE TEMPERATURES FOR THE SERVING AHU SHALL BE AVERAGED. A REVERSE ACTING PI (PROPORTIONAL, INTEGRAL) LOOP SHALL BE CONFIGURED SUCH THAT ITS INPUT SHALL BE THE AVERAGE ZONE SPACE TEMPERATURE AND ITS SETPOINT SHALL BE HALFWAY BETWEEN THE GLOBAL REHEAT AND COOLING SETPOINTS. FOR EXAMPLE, IF THE ZONE SPACE TEMPERATURE REHEAT SETPOINT IS 70°F AND THE ZONE SPACE TEMPERATURE COOLING SETPOINT IS 75°F, THE RESULTING AVERAGE SPACE TEMP SETPOINT WOULD BE 72.5°F.
      a. THE PI LOOP OUTPUT SHALL BE USED AS THE AHU DISCHARGE TEMPERATURE SETPOINT AND SHALL BE LIMITED BETWEEN 55°F AND 75°F (ADJ.).
      b. DISCHARGE AIR TEMPERATURE CONTROL SEQUENCE IS DESIGNED TO MAINTAIN MOST SPACES IN THE AHU SERVED ZONE AT OR CLOSE TO THE AVERAGE SPACE TEMPERATURE SETPOINT WHICH SHOULD POSITION MOST TERMINAL AIR UNITS AT MINIMUM CFM WITH NO REHEAT REQUIRED.
17. PRE AND POST OCCUPANCY PURGE – WHEN ENABLED BY THE OPERATOR THE UNIT CONTROLLER WILL BEGIN THE OCCUPIED OPERATION 2 HOURS (ADJ.) PRIOR TO THE SCHEDULED OCCUPANCY AND EXTEND OPERATION 2 HOURS (ADJ.) BEYOND SCHEDULED OCCUPANCY.
   A. OUTDOOR AND RELIEF AIR DAMPERS SHALL BE AT THEIR MAXIMUM SCHEDULED OPEN POSITION WHILE MAINTAINING THE MIXED AIR TEMPERATURE LIMIT.
   B. INTEGRATE PRE-PURGE FEATURE WITH THE OPTIMUM START LOGIC TO ALLOW BOTH OPERATIONS TO FUNCTION CONCURRENTLY (OUTDOOR AND RELIEF AIR DAMPERS OPEN) THUS NOT RUNNING SEQUENCES END-TO-END.

18. TIMED OVERRIDE CONTROL - SYSTEM CONTROLLER SHALL ENABLE UNIT WHEN ASSOCIATED TEMPERATURE SENSOR OVERRIDE BUTTON IS PUSHED. A 2 HOUR (ADJ) RUNTIME IS ENABLED, SYSTEM SHALL BE ENABLE AND FUNCTION AS IN OCCUPIED MODE.
19. SAFETY SHUTDOWNS:
   A. PROVIDE A LOW-TEMPERATURE PROTECTION THERMOSTAT(S) ON THE LEAVING SIDE OF HEATING HOT WATER COIL WHICH WILL DE-ENERGIZE UNIT, CLOSE MIXED AIR DAMPERS (CLOSING OUTDOOR/RELIEF/EXHAUST AIR DAMPER(S)), THE HEATING HOT WATER COIL CONTROL VALVE SHALL BE FULLY OPENED AND COIL PUMP ENERGIZED. PROVIDE MANUAL RESET.
   B. PROVIDE A HIGH STATIC PRESSURE SENSOR IN THE SUPPLY DISCHARGE PLENUM TO DE-ENERGIZE THE UNIT UPON SENSING A HIGH STATIC PRESSURE OF 4.0" W.C. (ADJ). PROVIDE MANUAL RESET.
   C. PROVIDE A LOW PRESSURE STATIC LIMIT IN THE RETURN PLENUM TO DE-ENERGIZE THE UNIT UPON SENSING A HIGH NEGATIVE STATIC PRESSURE OF -4.0" W.C. (ADJ). PROVIDE MANUAL RESET.
   D. DUCT MOUNTED IONIZATION SMOKE DETECTOR(S) PROVIDED BY DIVISION 28 SHALL DE-ENERGIZE THE UNIT WHENEVER PRODUCTS OF COMBUSTION ARE SENSED.
1. THE FOLLOWING SHALL BE SUPPLIED AND INSTALLED BY TEMPERATURE CONTROL INSTALLER:
   A. CONTROL VALVE AND DAMPER ACTUATORS
   B. SENSORS
2. THE FOLLOWING SHALL BE SUPPLIED BY TEMPERATURE CONTROL INSTALLER AND INSTALLED BY OTHERS:
   A. CONTROL VALVES
   B. DAMPERS

OMIT ALL WORK ON THIS SHEET.

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
TEMPERATURE CONTROLS

DATE
NOVEMBER 22, 2022

SHEET NUMBER
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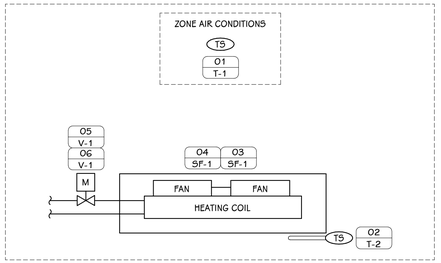
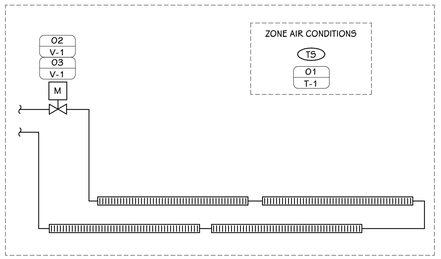


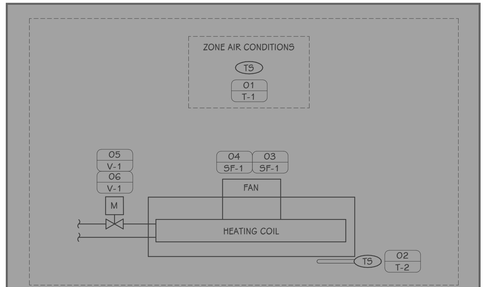
CABINET UNIT HEATER CONTROLS DIAGRAM

SCALE: NONE



FIN TUBE CONTROLS DIAGRAM

SCALE: NONE

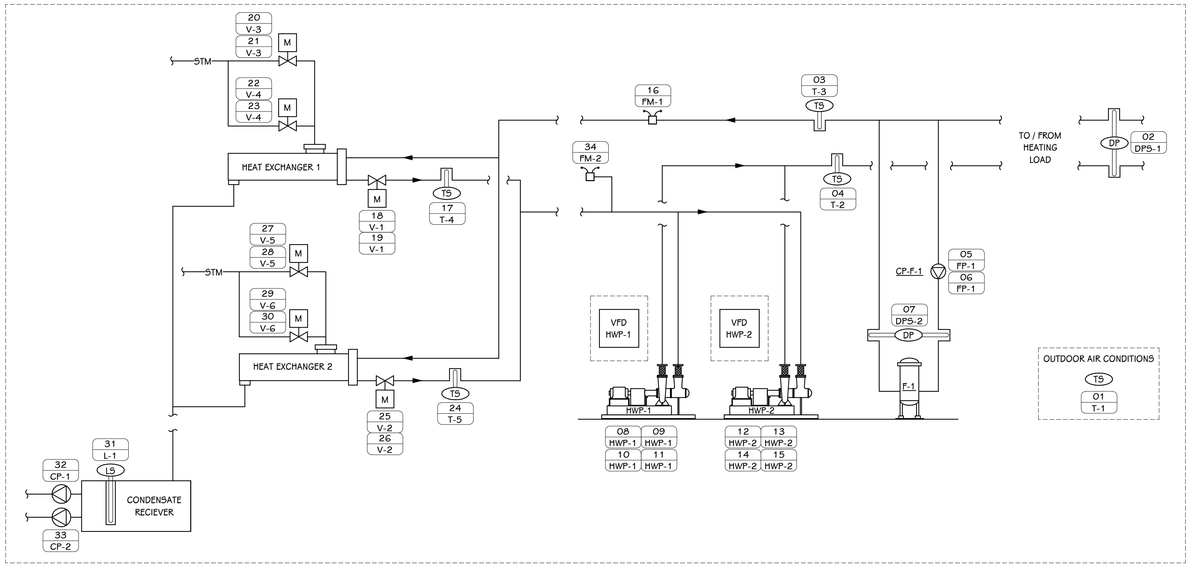


UNIT HEATER CONTROLS DIAGRAM

SCALE: NONE

CONTROL POINTS

NUMBER	TAG	DESCRIPTION	ALARM	TREND	MISC.	REMARKS
HEATING HOT WATER SYSTEM						
01	T-1	OUTDOOR AIR TEMPERATURE		■		GLOBAL
02	DPS-1	HEATING LOOP DIFFERENTIAL PRESSURE	■	■		
03	T-3	HEATING WATER RETURN TEMPERATURE		■		
04	T-2	HEATING SUPPLY WATER TEMPERATURE	■	■		
05	FP-1	ENABLE/DISABLE		■		FILTER PUMP
06	FP-1	RUN STATUS	■	■		FILTER PUMP
07	DPS-2	FILTER DIFFERENTIAL PRESSURE	■	■		
08	HWP-1	ENABLE/DISABLE		■		
09	HWP-1	RUN STATUS	■	■		
10	HWP-1	SPEED CONTROL		■		
11	HWP-1	VFD FAULT STATUS	■	■		
12	HWP-2	ENABLE/DISABLE		■		
13	HWP-2	RUN STATUS	■	■		
14	HWP-2	SPEED CONTROL		■		
15	HWP-2	VFD FAULT STATUS	■	■		
16	FM-1	LOOP FLOW (GPM)		■		
17	T-4	LEAVING WATER TEMPERATURE	■	■		
18	V-1	ISOLATION VALVE OPEN/CLOSE		■		
19	V-1	ISOLATION VALVE POSITION		■		
20	V-3	1/3 STEAM CONTROL VALVE POSITION		■		
21	V-3	1/3 STEAM CONTROL VALVE OUTPUT		■		
22	V-4	2/3 STEAM CONTROL VALVE POSITION		■		
23	V-4	2/3 STEAM CONTROL VALVE OUTPUT		■		
24	T-5	LEAVING WATER TEMPERATURE	■	■		
25	V-2	ISOLATION VALVE OPEN/CLOSE		■		
26	V-2	ISOLATION VALVE POSITION		■		
27	V-5	1/3 STEAM CONTROL VALVE POSITION		■		
28	V-5	1/3 STEAM CONTROL VALVE OUTPUT		■		
29	V-6	2/3 STEAM CONTROL VALVE POSITION		■		
30	V-6	2/3 STEAM CONTROL VALVE OUTPUT		■		
31	L-1	CONDENSATE LEVEL ALARM	■	■		
32	CP-1	RUN STATUS		■		
33	CP-2	RUN STATUS		■		
34	FM-2	MAKE UP WATER FLOW METER		■		
HOT WATER CABINET UNIT HEATERS						
01	T-1	ZONE AIR TEMPERATURE				
02	T-2	DISCHARGE AIR TEMPERATURE				
03	5F-1	FAN STATUS	■			
04	5F-1	ENABLE/DISABLE				
05	V-1	CONTROL VALVE POSITION				
06	V-1	CONTROL VALVE OUTPUT				
HOT WATER UNIT HEATER						
01	T-1	ZONE AIR TEMPERATURE		■		
02	T-2	DISCHARGE AIR TEMPERATURE		■		
03	5F-1	FAN STATUS	■	■		
04	5F-1	ENABLE/DISABLE		■		
05	V-1	CONTROL VALVE POSITION		■		
06	V-1	CONTROL VALVE OUTPUT		■		
HOT WATER FINNED TUBE RADIATION						
01	T-1	ZONE AIR TEMPERATURE		■		
02	V-1	CONTROL VALVE POSITION		■		
03	V-1	CONTROL VALVE OUTPUT		■		



STEAM HEAT EXCHANGER CONTROLS DIAGRAM

SCALE: NONE

SEQUENCE OF OPERATIONS

NOTE: ALL LABOR, MATERIAL, EQUIPMENT AND SOFTWARE NOT SPECIFICALLY INDICATED WITHIN CONTROLS DRAWINGS THAT IS REQUIRED TO MEET THE FUNCTIONAL INTENT OF THE SEQUENCE OF OPERATIONS SHALL BE PROVIDED WITHOUT ADDITIONAL COST. POINT LISTS SHALL BE A GUIDE TO THE POINTS REQUIRED FOR CONTROL SYSTEM. FINAL POINTS SHALL BE DETERMINED BY SEQUENCE OF OPERATIONS. ALL SET POINTS SHALL BE OPERATOR ADJUSTABLE THROUGH THE BMS. ALL POINTS SHALL BE TRENDABLE.

STEAM HEAT EXCHANGER (HX-1 & 2) CONTROLS:

1. PROVIDE DIRECT DIGITAL CONTROLS (DDC) FOR HEATING HOT WATER SYSTEM OPERATION. SYSTEM IS A COMBINATION OF VARIABLE VOLUME BASE MOUNTED CENTRIFUGAL PUMP(S), VARIABLE FREQUENCY CONTROLLER(S), STEAM TO WATER HEAT EXCHANGER(S), 1/3 AND 2/3 STEAM CONTROL VALVE(S) (CV) AND ACTUATOR(S), CONDENSATE RECEIVER, SIDE STREAM FILTER WITH DIFFERENTIAL PRESSURE SENSOR, MAKEUP WATER METER, AND WATER TEMPERATURE/AIR TEMPERATURE/FLOW SENSOR(S).
2. SYSTEM ENABLED/DISABLED BASED ON THE FOLLOWING:
   A. UPON A CALL FOR HEAT BY ANY PIECE OF HEATING EQUIPMENT.
      a. INCLUDE CAPABILITY TO OMIT ANY INDIVIDUAL PIECE OF HEATING EQUIPMENT.
   B. AT AN ADJUSTABLE 55°F OUTDOOR AIR TEMPERATURE.
   C. BY OPERATOR COMMAND.
3. SYSTEM START/STOP, CONTROLLED DEVICES SHALL RESPOND AS FOLLOWS:
   A. WHEN INDEXED TO STOP:
      a. DISABLE TEMPERATURE CONTROL.
      b. AFTER DELAY OF TEN (10) MINUTES, DISABLE LEAD PUMP.
      c. LEAD HEAT EXCHANGER ISOLATION CV 100% CLOSED.
   B. WHEN INDEXED TO START:
      a. LEAD HEAT EXCHANGER ISOLATION CV 100% OPEN.
      b. ENABLE LEAD PUMP.
      c. AFTER DELAY OF TEN (10) MINUTE HOLD TO ESTABLISH FLOW IN SYSTEM, ENABLE TEMPERATURE CONTROL.
4. INITIAL START-UP CONTROL – WHEN INDEXED TO START, SYSTEM CONTROLLER SHALL ENABLE LEAD PUMP BASED ON THE FOLLOWING:
   A. WHEN ENABLED, AND AFTER A DELAY OF TWO (2) MINUTES (ADJ.) WITH NO STATUS SENSED, THE DDC SHALL INDICATE A CRITICAL ALARM.
      a. START LAG PUMP SHOULD LEAD PUMP FAIL.
   B. WHEN ENABLED AND STATUS IS SENSED BY THE CURRENT SENSOR, A TOTALIZES OF RUN HOURS FOR UNIT WILL BE ACTIVE.
   C. ALTERNATE OF LEAD AND LAG PUMPS (15 DAYS ADJUSTABLE) TO EVEN OUT OPERATING TIME OF EACH PUMP.
      a. UTILIZE CALENDAR DAY(S) AND TOTALIZED HOURS TO DETERMINE LEAD PUMP FOR DURATION.
5. PUMP PRESSURE CONTROL (VALVES RESET) – SYSTEM CONTROLLER SHALL MODULATE PUMP MOTORS VARIABLE FREQUENCY CONTROLLERS TO MAINTAIN AN ADJUSTABLE PRESSURE DIFFERENTIAL (PSID) SETPOINT MEASURED BY PRESSURE DIFFERENTIAL CONTROLLER LOCATED 75% OF MAXIMUM MAIN PIPE DISTANCE DOWNSTREAM OF SYSTEM (FINAL POSITION TO BE PROPOSED BY CONTRACTOR AND APPROVED BY ENGINEER). RESET PRESSURE DIFFERENTIAL SETPOINT BASED ON THE FOLLOWING:
   A. INITIAL STARTUP SET PRESSURE DIFFERENTIAL SETPOINT AT 6 PSID (ADJ.).
   B. PRESSURE DIFFERENTIAL SETPOINT SHALL BE RESET USING "TRIM AND RESPOND" LOGIC WITH THE RANGE OF 6 PSID (ADJ.) TO 12 PSID (ADJ.). WHEN THE SYSTEM IS OFF, THE SETPOINT SHALL BE AT MINIMUM. WHEN SYSTEM IS ON, EVERY TWO (2) MINUTES, TRIM THE SETPOINT BY 0.25 PSID IF THERE ARE TWO(2) OR FEWER REQUESTS. IF THERE ARE MORE THAN TWO (2) REQUESTS, RESPOND BY INCREASING THE SETPOINT BY 0.5 PSID.
      a. A REQUEST IS GENERATED WHENEVER ANY HEATING EQUIPMENT CONTROL VALVE POSITION IS GREATER THAN 95% (ADJ.) OPEN UNTIL IT DROPS TO 85% (ADJ.) OPEN.
      b. EXCLUDE ANY 2-POSITION CONTROL VALVES.
      c. PROVIDE THE ABILITY TO OMIT HEATING UNITS FROM "TRIM AND RESPOND" LOGIC.
      d. FINAL SETPOINTS TO BE DETERMINED BY TEST AND BALANCE CONTACTOR.
6. TEMPERATURE CONTROL (OAT RESET) – SYSTEM CONTROLLER SHALL SEND TO HEAT EXCHANGER AN ADJUSTABLE HEATING HOT WATER TEMPERATURE SETPOINT MEASURED BY MAIN SUPPLY WATER TEMPERATURE SENSOR LOCATED DOWNSTREAM OF HEATING SYSTEM. RESET HOT WATER SUPPLY TEMPERATURE SETPOINT BASED ON THE FOLLOWING:
   A. INITIAL STARTUP SET SUPPLY WATER TEMPERATURE SETPOINT AT 110°F (ADJ.)
   B. MAIN SUPPLY WATER TEMPERATURE SETPOINT SHALL BE RESET BASED ON THE FOLLOWING:
      a. AT 30°F (ADJ.) OUTDOOR AIR TEMPERATURE, SET SUPPLY WATER TEMPERATURE AT 130°F (ADJ.).
      b. AT 55°F (ADJ.) OUTDOOR AIR TEMPERATURE, SET SUPPLY WATER TEMPERATURE AT 110°F (ADJ.).
7. SYSTEM PUMP VARIABLE FREQUENCY CONTROLLER(S) SHALL BE MONITORED BASED ON THE FOLLOWING:
   A. VIA BACNET/MODBUS CONNECTION.
      a. POWER USAGE / SPEED % AND HZ / HOURS / FAULT / ALARM
8. HEAT EXCHANGER CONTROL – SYSTEM CONTROLLER SHALL MODULATE STEAM HEAT EXCHANGER(S) 1/3 AND 2/3 CV'S BASED ON AN ADJUSTABLE HEATING HOT WATER TEMPERATURE SETPOINT BASED ON THE FOLLOWING:
   A. LEAD HEAT EXCHANGER CONTROL BASED ON THE FOLLOWING:
      a. ON A FALL IN SUPPLY WATER TEMPERATURE 1/3 CONTROL VALVE MODULATES FIRST UP TO 100%, FOLLOWED BY 2/3 CONTROL VALVE MODULATION FROM 0% TO 100%.
      b. ON A RISE IN SUPPLY WATER TEMPERATURE, 2/3 CONTROL VALVE MODULATES CLOSED FOLLOWED BY 1/3 MODULATION 100% TO 0%.
      c. LAG HEAT EXCHANGER ISOLATION VALVE(S) SHALL BE CLOSED.
   B. LAG HEAT EXCHANGER CONTROL BASED ON THE FOLLOWING:
      a. ON A CONTINUE FALL IN SUPPLY WATER TEMPERATURE AND BOTH LEAD 1/3 AND 2/3 VALES ARE 100% OPEN FOR A PERIOD OF TIME, THE LAG HEAT EXCHANGER SHALL BE ENABLED.
      b. LAG ISOLATION VALVE(S) SHALL BE OPENED, WITH A DELAY OF FIVE (5) MINUTES PRIOR TO ALLOWING LAG 1/3 AND 2/3 CONTROL VALES FROM OPENING.
      c. WITH LEAD HEAT EXCHANGER VALVES AT 100% OPEN, THE LAG HEAT EXCHANGER SHALL CONTROL TO SIMILAR SEQUENCE AS NOTED ABOVE FOR ONE HEAT EXCHANGER.
      d. ON A RISE IN SUPPLY TEMPERATURE, REVERSE THE SEQUENCE.
9. SIDE STREAM FILTER CONTROL – SYSTEM CONTROLLER SHALL MONITOR FILTER PRESSURE DIFFERENTIAL BASED ON THE FOLLOWING:
   a. FILTER PRESSURE DIFFERENTIAL READING IS GREATER THAN FILTER ALARM SETPOINT, THE DDC SHALL INDICATE A GENERAL ALARM.
      • ALARM SETPOINT SHALL BE 10 PSID (ADJ.).
10. MAKEUP WATER METER – SYSTEM CONTROLLER SHALL MONITOR AND TREND MAKEUP WATER FLOW. ALARM CONTINOUS MAKEUP WATER.
11. SYSTEM SAFETY SHUTDOWNS - SYSTEM SHALL BE DISABLED WHEN A HARD WIRED HIGH TEMPERATURE SENSOR, WHEN SENSOR SENSES 200°F OR GREATER THE STEAM 1/3 AND 2/3 VALES SHALL BE CLOSED AND A CRITICAL ALARM GENERATED.
    A. PUMPS REMAIN ON.
12. CONDENSATE RECEIVER - PUMP STATUS AND LEVEL SENSOR SHALL BE MONITORED.
13. CRITICAL ALARM – SEND A CRITICAL ALARM WHEN THE HEATING WATER TEMPERATURE IS 100°F OR LESS WHILE THE OUTSIDE AIR TEMPERATURE IS 45°F OR LESS.

SEQUENCE OF OPERATIONS (CONT'D)

CABINET UNIT HEATER CONTROLS

1. PROVIDE DIRECT DIGITAL CONTROLS (DDC) FOR CABINET HEATER OPERATION. CABINET HEATER IS A COMBINATION OF A CONSTANT VOLUME FAN, FILTER, HEATING COIL, CONTROL VALVE (CV) WITH ACTUATOR, AND AIR TEMPERATURE SENSOR.
2. CABINET HEATER ADJUSTABLE SCHEDULE BASED ON THE FOLLOWING:
   A. SCHEDULED WITH MAIN BUILDING SCHEDULE.
   B. SCHEDULED WITH ASSOCIATED ZONE HVAC SYSTEM.
3. CABINET HEATER ADJUSTABLE SETPOINT:
   A. SPACE TEMPERATURE SETPOINT SHALL BE 60°F (MAXIMUM).
4. OPERATION SHALL BE BASED ON THE FOLLOWING:
   A. OPERATION BASED ON WALL MOUNTED THERMOSTAT THAT WILL ENABLE UNIT WHENEVER SPACE TEMPERATURE FALLS BELOW HEATING SETPOINT.
5. START/STOP, CONTROLLED DEVICES SHALL RESPOND AS FOLLOWS:
   A. WHEN INDEXED TO STOP:
      a. DISABLE FAN.
      b. HEATING CV 100% CLOSED.
   B. WHEN INDEXED TO START:
      a. HEATING CV 100% OPENED.
      b. ENABLE FAN.
   C. WHEN OUTDOOR AIR TEMPERATURE IS GREATER THAN 45°F, UNIT SHALL BE DISABLED.
6. MONITORING AND ALARMING OF THE FOLLOWING:
   A. FAN MOTOR STATUS.
      a. WHEN ENABLED, AND AFTER A DELAY OF TWO (2) MINUTES (ADJ.) WITH NO STATUS SENSED, THE DDC SHALL INDICATE A GENERAL ALARM.
      b. WHEN ENABLED AND STATUS IS SENSED BY THE CURRENT SENSOR, A RUN TIMER WILL BE ACTIVE.

UNIT HEATER CONTROLS

1. PROVIDE DIRECT DIGITAL CONTROLS (DDC) FOR UNIT HEATER OPERATION. UNIT HEATER IS A COMBINATION OF A CONSTANT VOLUME FAN, FILTER, HEATING COIL, CONTROL VALVE (CV) WITH ACTUATOR, AND AIR TEMPERATURE SENSOR.
2. UNIT HEATER ADJUSTABLE SCHEDULE BASED ON THE FOLLOWING:
   A. SCHEDULED WITH MAIN BUILDING SCHEDULE.
   B. SCHEDULED WITH ASSOCIATED ZONE HVAC SYSTEM.
3. UNIT HEATER ADJUSTABLE SETPOINT:
   A. SPACE TEMPERATURE SETPOINT SHALL BE 60°F (MAXIMUM).
4. OPERATION SHALL BE BASED ON THE FOLLOWING:
   A. OPERATION BASED ON WALL MOUNTED THERMOSTAT THAT WILL ENABLE UNIT WHENEVER SPACE TEMPERATURE FALLS BELOW HEATING SETPOINT.
5. START/STOP, CONTROLLED DEVICES SHALL RESPOND AS FOLLOWS:
   A. WHEN INDEXED TO STOP:
      a. DISABLE FAN.
      b. HEATING CV 100% CLOSED.
   B. WHEN INDEXED TO START:
      a. HEATING CV 100% OPENED.
      b. ENABLE FAN.
   C. WHEN OUTDOOR AIR TEMPERATURE IS GREATER THAN 45°F, UNIT SHALL BE DISABLED.
6. MONITORING AND ALARMING OF THE FOLLOWING:
   A. FAN MOTOR STATUS.
      a. WHEN ENABLED, AND AFTER A DELAY OF TWO (2) MINUTES (ADJ.) WITH NO STATUS SENSED, THE DDC SHALL INDICATE A GENERAL ALARM.
      b. WHEN ENABLED AND STATUS IS SENSED BY THE CURRENT SENSOR, A RUN TIMER WILL BE ACTIVE.

HOT WATER FIN TUBE RADIATION CONTROLS:

1. FINNED TUBE IS CONTROLLED WITH ASSOCIATED TERMINAL UNIT. FINNED TUBE IS A COMBINATION OF A HEATING ELEMENT, CONTROL VALVE (CV) AND ACTUATOR, AND AIR TEMPERATURE SENSOR.
2. REFER TO ASSOCIATED TERMINAL AIR UNIT CONTROL ARTICLES FOR STAGED HEATING CONTROL.
3. OPERATION SHALL BE BASED ON THE FOLLOWING:
   A. OPERATION BASED ON 1ST STAGE HEATING WITH ASSOCIATED TERMINAL AIR UNIT. REFER TO ASSOCIATED TERMINAL AIR UNIT CONTROL ARTICLE FOR STAGE HEATING CONTROL.
4. START/STOP, CONTROLLED DEVICES SHALL RESPOND AS FOLLOWS:
   A. WHEN INDEXED TO STOP:
      a. HEATING CV 100% CLOSED.
   B. WHEN INDEXED TO START:
      a. HEATING CV OPENED AND MODULATES.
5. FINNED TUBE ADJUSTABLE SCHEDULE BASED ON THE FOLLOWING:
   A. SCHEDULED WITH ASSOCIATED ZONE HVAC SYSTEM.
6. MONITORING AND ALARMING OF THE FOLLOWING:
   A. SPACE AIR TEMPERATURE.

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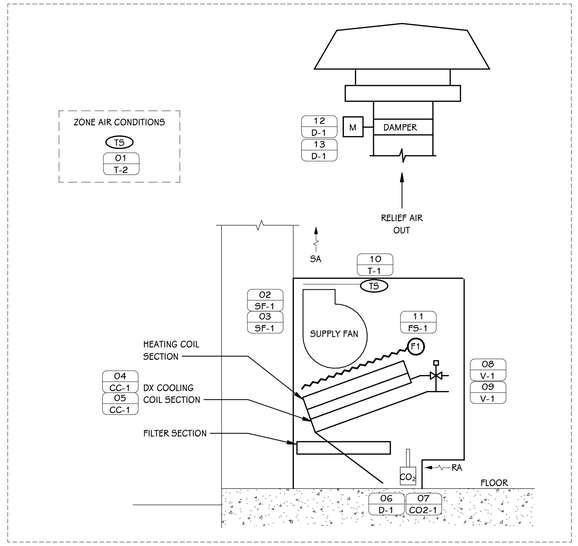
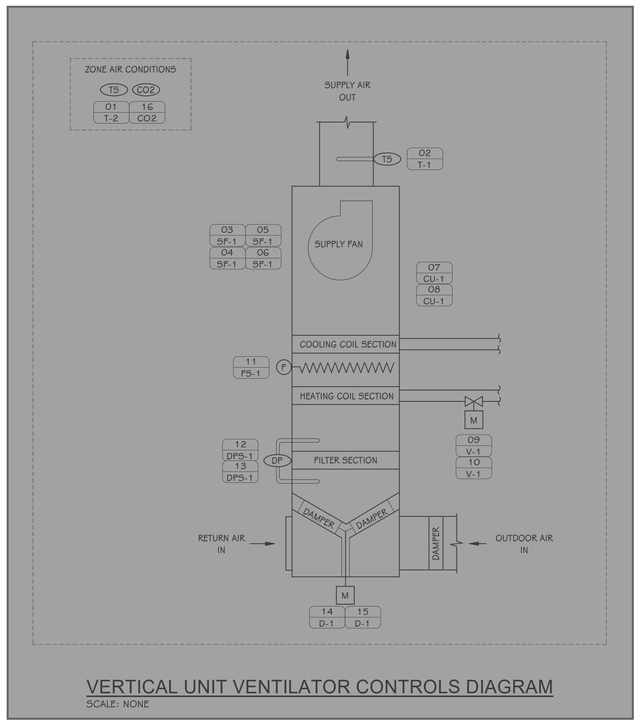


FLOOR MOUNTED UNIT VENTILATOR (DX COOLING) CONTROLS DIAGRAM

SCALE: NONE

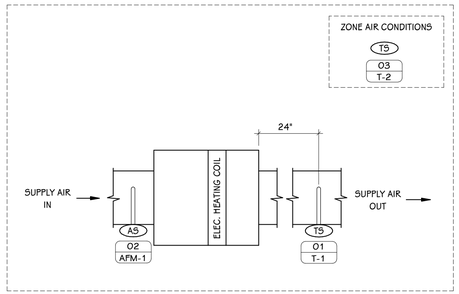


VERTICAL UNIT VENTILATOR CONTROLS DIAGRAM

SCALE: NONE

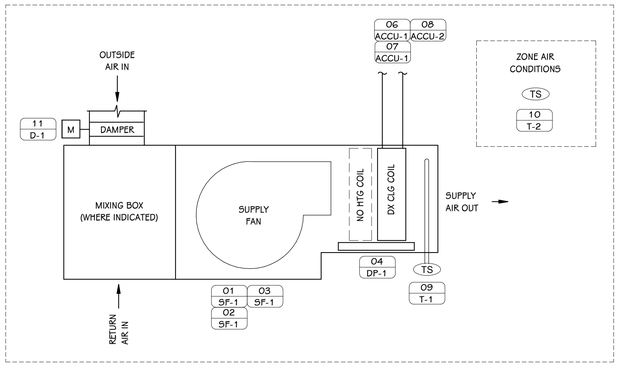
CONTROL POINTS

NUMBER	TAG	DESCRIPTION	ALARM	TREND	MISC.	REMARKS
FLOOR MOUNTED UNIT VENTILATOR DETAIL - DX COOLING						
01	T-2	ZONE AIR TEMPERATURE		■		
02	SF-1	SUPPLY FAN ALARM STATUS	■	■		
03	SF-1	SUPPLY FAN ALARM STATUS	■	■		
04	CC-1	MECHANICAL COOLING STATUS	■	■		
05	CC-1	MECHANICAL COOLING STAGE		■		
06	D-1	MIXED AIR DAMPER POSITION		■		
07	CO2-1	RETURN AIR CARBON DIOXIDE		■		
08	V-1	HEATING COIL VALVE OUTPUT		■		
09	V-1	HEATING CONTROL VALVE POSITION		■		
10	T-1	DISCHARGE AIR TEMPERATURE		■		
11	FS-1	FREEZE STAT ALARM STATUS	■	■		
12	D-1	OUTSIDE AIR DAMPER OUTPUT		■		
13	D-1	OUTDOOR AIR DAMPER POSITION		■		
VERTICAL UNIT VENTILATOR						
01	T-2	ZONE AIR TEMPERATURE		■		
02	T-1	DISCHARGE AIR TEMPERATURE		■		
03	SF-1	FAN ENABLE/DISABLE		■		
04	SF-1	FAN SPEED CONTROL		■		
05	SF-1	FAN RUN STATUS		■		
06	SF-1	SUPPLY FAN ALARM STATUS		■		
07	CU-1	MECHANICAL COOLING CONTROL SIGNAL		■		
08	CU-1	MECHANICAL COOLING STATUS		■		
09	V-1	HEATING CONTROL VALVE POSITION		■		
10	V-1	HEATING CONTROL VALVE OUTPUT		■		
11	FS-1	FREEZE STAT ALARM STATUS		■		HARD WIRED SAFETY - MANUAL RESET
12	DPS-1	PRE-FILTER STATUS		■		
13	DPS-1	PRE-FILTER ALARM STATUS		■		
14	D-1	MIXED AIR DAMPER OUTPUT		■		MODULATING OPEN/CLOSE
15	D-1	MIXED AIR DAMPER POSITION		■		MODULATING OPEN/CLOSE
16	CO2	CO2 CONCENTRATION		■		
ELECTRIC HEATING COIL						
01	T-1	DISCHARGE AIR TEMPERATURE	■	■		105°F
02	AFM-1	SUPPLY AIR FLOW		■		
03	T-2	ZONE AIR TEMPERATURE	■	■		
HORIZONTAL UNIT VENTILATOR CONTROLS DIAGRAM						
01	SF-1	SUPPLY FAN ENABLE/DISABLE		■		
02	SF-1	SUPPLY FAN RUN STATUS	■	■		NO STATUS WHEN ENABLED
03	SF-1	SUPPLY FAN ALARM STATUS	■	■		
04	DP-1	DRAIN PAN ALARM STATUS	■	■		
06	ACCU-1	CONDENSING UNIT ENABLE/DISABLE		■		
07	ACCU-1	CONDENSING UNIT RUN STATUS	■	■		NO STATUS WHEN ENABLED
08	ACCU-2	CONDENSING UNIT STAGE	■	■		
09	T-1	DISCHARGE AIR TEMPERATURE	■	■		
10	T-2	ZONE AIR TEMPERATURE	■	■		
11	D-1	OUTDOOR AIR DAMPER OUTPUT	■	■		



ELECTRIC HEATING COIL CONTROLS DIAGRAM

SCALE: NONE



HORIZONTAL UNIT VENTILATOR CONTROLS DIAGRAM - NO HEATING COIL

SCALE: NONE

SEQUENCE OF OPERATIONS

NOTE: ALL LABOR, MATERIAL, EQUIPMENT AND SOFTWARE NOT SPECIFICALLY INDICATED WITHIN CONTROLS DRAWINGS THAT IS REQUIRED TO MEET THE FUNCTIONAL INTENT OF THE SEQUENCE OF OPERATIONS SHALL BE PROVIDED WITHOUT ADDITIONAL COST. POINT LISTS SHALL BE A GUIDE TO THE POINTS REQUIRED FOR CONTROL SYSTEM. FINAL POINTS SHALL BE DETERMINED BY SEQUENCE OF OPERATIONS. ALL SET POINTS SHALL BE OPERATOR ADJUSTABLE THROUGH THE BMS. ALL POINTS SHALL BE TRENDABLE.

ELECTRIC HEATING COIL (EHC) CONTROLS:

1. PROVIDE DIRECT DIGITAL CONTROLS FOR EACH UNIT, WHICH INCLUDES AN ELECTRIC HEATING COIL CONTROLLER AND ROOM TEMPERATURE SENSOR (SHARED WITH ASSOCIATED HUV). BUILDING MANAGEMENT SYSTEM (BMS) WILL MONITOR AND CONTROL UNITS.
2. EHC SCHEDULE
   A. EHC'S SCHEDULED WITH ASSOCIATED HORIZONTAL UNIT VENTILATOR (HUV).
      a. WHEN EHC'S ARE INDEXED TO UNOCCUPIED / OCCUPIED MODES THE FOLLOWING WILL BE THE SETPOINTS:
         - UNOCCUPIED SETPOINTS: UNIT DISABLED.
         - OCCUPIED SETPOINTS: 105°F HEATING (ADJ.).
3. OCCUPIED OPERATION:
   A. COOLING - ELECTRIC HEATING COIL DISABLED.
   B. HEATING - UPON A FALL IN SPACE TEMPERATURE BELOW THE ROOM SETPOINT, THE ASSOCIATED HORIZONTAL UNIT VENTILATOR SHALL BE ENERGIZED. WITH THE EHC AIRFLOW SWITCH SATISFIED, THE EHC WILL MODULATE TO MAINTAIN A CONSTANT DISCHARGE AIR TEMPERATURE.
      a. ELECTRIC HEATING COIL SHALL BE DISABLED WHENEVER OUTDOOR AIR TEMPERATURE EXCEEDS 55°F.
4. UNOCCUPIED OPERATION:
   A. HEATING - UPON A FALL IN SPACE TEMPERATURE EXCEEDING THE UNOCCUPIED HEATING ENABLE SETPOINT OF 55°F (ADJ.), THE CONTROLLER SHALL REQUEST THE ASSOCIATED HUV TO ENERGIZE. OUTDOOR AIR DAMPER SHALL REMAIN CLOSED AND THE EHC SHALL REMAIN DISABLED.
5. THE FOLLOWING SHALL BE SUPPLIED AND INSTALLED BY TEMPERATURE CONTROL INSTALLER:
   A. SUPPLY AIRFLOW SENSOR.
   B. ZONE AIR TEMPERATURE SENSOR.
6. THE FOLLOWING SHALL BE SUPPLIED BY TEMPERATURE CONTROL INSTALLER AND INSTALLED BY OTHERS:
   A. ELECTRIC HEATING COIL CONTROL.
      1. DISCHARGE AIR TEMPERATURE.

SEQUENCE OF OPERATIONS (CONT'D)

VERTICAL AND CONSOLE UNIT VENTILATOR (DX COOLING) CONTROLS:

1. UNIT PROVIDED WITH FACTORY CONTROLS. CONFIGURE CONTROLS TO MEET THE SEQUENCE BELOW. INTEGRATE TO DIRECT DIGITAL CONTROLS (DDC) FOR UNIT READ AND WRITE CAPABILITY. DDC WILL PROVIDE SCHEDULE OF OPERATION, SETPOINT, ROOM TEMP, ROOM CO2, OUTDOOR AIR CONDITIONS. HORIZONTAL OR VERTICAL UNIT VENTILATOR IS A COMBINATION OF A VARIABLE VOLUME FAN, HEATING COIL, DX COOLING COIL, CONTROL VALVE(S) (CV) AND ACTUATOR(S), BI-POLAR IONIZATION, AND AIR TEMPERATURE AND CO2 SENSORS.
2. UNIT VENTILATOR ADJUSTABLE SCHEDULE BASED ON THE FOLLOWING:
   A. TIME OF DAY (TOD) SCHEDULE.
      a. TO BE DETERMINED BY OWNER (CONSULT WITH OWNER).
      b. SUGGESTED OCCUPIED SCHEDULE: 7AM-5PM M-F, OFF SAT-SUM, OFF HOLIDAYS
   B. ENABLED AND DISABLED BASED ON MANUAL OVERRIDE FROM DDC.
3. UNIT VENTILATOR ADJUSTABLE SETPOINTS:
   A. OCCUPIED 75°F COOLING / 70°F HEATING
   B. STANDBY 78°F COOLING / 68°F HEATING (BASED ON LIGHTING OCCUPANCY SENSOR(S))
   C. UNOCCUPIED 95°F COOLING / 55°F HEATING
   D. CO2 800 PPM MINIMUM / 1,200 PPM MAXIMUM
4. START/STOP, CONTROLLED DEVICES SHALL RESPOND AS FOLLOWS:
   A. WHEN INDEXED TO STOP:
      a. DISABLE FAN.
      b. DISABLE DX COOLING.
      c. HEATING CV MODULATES TO MAINTAIN MIXED/DISCHARGE AIR TEMPERATURE SENSOR AT 80°F (ADJ.), WHEN OUTDOOR AIR TEMPERATURE IS BELOW 45°F (ADJ.).
      d. OUTDOOR AND RELIEF/EXHAUST DAMPERS 100% CLOSED.
      e. RETURN AIR DAMPER 100% OPENED.
   B. WHEN INDEXED TO START:
      a. ENABLE FAN, RUNS CONTINUOUSLY IN OCCUPIED MODE.
      b. AFTER DELAY OF FIVE (5) MINUTE HOLD, ENABLE OCCUPIED CONTROL.
5. OCCUPIED TEMPERATURE CONTROL – SYSTEM CONTROLLER SHALL MODULATE HEATING AND COOLING SOURCES AND MIXED AIR DAMPERS TO MAINTAIN AN ADJUSTABLE SPACE TEMPERATURE SETPOINT MEASURED BY A SPACE TEMPERATURE THERMOSTAT.
   A. COOLING (DX COOLING) – UPON A RISE IN SPACE TEMPERATURE ABOVE SPACE TEMPERATURE SETPOINT, CONTROLLER SHALL RESPOND BASED ON THE FOLLOWING:
      a. STAGE ONE UTILIZES 67% COMPRESSOR CAPACITY AND FAN ON LOW SPEED.
      b. STAGE TWO UTILIZES 100% COMPRESSOR CAPACITY AND FAN ON LOW SPEED.
      c. STAGE THREE UTILIZES 100% COMPRESSOR CAPACITY AND FAN ON HIGH SPEED.
      d. MIXED AIR DAMPERS AT MINIMUM AIRFLOW SETPOINT FOR ALL THREE STAGES.
   B. HEATING CONTROL - UPON A FALL IN SPACE TEMPERATURE BELOW SPACE TEMPERATURE SETPOINT, CONTROLLER SHALL RESPOND BASED ON THE FOLLOWING:
      a. MODULATE HEATING COIL CV TO MAINTAIN SPACE TEMPERATURE SETPOINT.
      b. FAN ON LOW SPEED.
      c. MIX AIR DAMPERS AT MINIMUM AIRFLOW SETPOINT.
      d. SECOND STAGE OF HEAT UTILIZES FAN ON HIGH SPEED AND MODULATING HEATING COIL CV.
6. ECONOMIZER CONTROL - SYSTEM CONTROLLER SHALL MODULATE MIXED AIR DAMPERS TO MEET UNIT DISCHARGE AIR TEMPERATURE SETPOINT WHEN OUTDOOR AIR ENTHALPY IS BELOW THE RETURN AIR ENTHALPY BUT ABOVE ECONOMIZING SETPOINT.
   A. WHEN BTU CALCULATION FOR OUTDOOR AIR CONDITIONS EXCEEDS 25 BTUH/LB (ADJ.), ECONOMIZER SHALL BE DISABLED.
   B. MODULATE RELIEF AIR DAMPER TO MAINTAIN A SLIGHT POSITIVE ZONE PRESSURE AS MEASURED BY ZONE PRESSURE SENSOR.
7. MINIMUM OUTDOOR AIR CONTROL - SYSTEM CONTROLLER SHALL MODULATE MIXED AIR DAMPERS TO MAINTAIN MINIMUM CFM SETPOINT MEASURED BY AN OUTDOOR AIR FLOW MEASURING STATION. LIMIT THE CLOSING OF THE OUTDOOR AIR DAMPER TO PROVIDE ABSOLUTE MINIMUM OUTDOOR AIR FLOW.
   A. OUTDOOR – RELIEF/EXHAUST – RETURN MODULATING WITH ONE SIGNAL FROM CONTROLLER.
   B. REFER TO UNIT SCHEDULE FOR THE ABSOLUTE MINIMUM OUTDOOR AIRFLOW CFM SETPOINT.
   C. MODULATE RELIEF AIR DAMPER TO MAINTAIN A SLIGHT POSITIVE ZONE PRESSURE AS MEASURED BY ZONE PRESSURE SENSOR.
8. CO2 CONTROL - SYSTEM CONTROLLER SHALL OVERRIDE MIXED AIR DAMPER CONTROLS IN NON-ECONOMIZING MODE USING SPACE CO2 SENSOR TO INCREASE OUTDOOR MINIMUM CFM TO A MAXIMUM CFM. INCLUDE CORRESPONDING CLOSING RETURN AIR DAMPER AND OPENING OF RELIEF/EXHAUST AIR DAMPERS.
   A. UPON RETURN SPACE CO2 SENSOR EXCEEDING SETPOINT (800 PPM ADJ.), START TO MODULATE MIXED AIR DAMPERS (OUTDOOR AIR DAMPER OPENING) IN GRADUAL INCREMENTS UNTIL CO2 SENSOR SETPOINT IS SATISFIED.
      a. MODULATE MIXED AIR DAMPERS DOWN TO ITS ABSOLUTE MINIMUM POSITION UPON SATISFYING SENSOR SETPOINT.
   B. ALARM HIGH CO2, 1,200 PPM (ADJ.)
   C. REFER TO UNIT SCHEDULE FOR THE MAXIMUM OUTDOOR AIRFLOW CFM SETPOINT.
   D. MODULATE RELIEF AIR DAMPER TO MAINTAIN A SLIGHT POSITIVE ZONE PRESSURE AS MEASURED BY ZONE PRESSURE SENSOR.
9. MIXED AIR TEMPERATURE CONTROL - SYSTEM CONTROLLER SHALL MODULATE MIXED AIR DAMPERS WHEN MIXED AIR TEMPERATURE SENSOR FALLS BELOW 45°F, THE OUTDOOR – RELIEF/EXHAUST - RETURN DAMPERS SHALL MODULATE TO MAINTAIN A MIXED AIR TEMPERATURE OF 55°F.
   A. PROVIDE OVERRIDE OF MINIMUM OUTDOOR AIR VOLUME SETPOINT IN THE HEATING MODE TO MAINTAIN A 55°F MIXED AIR TEMPERATURE.
10. FILTER MONITORING - SYSTEM CONTROLLER SHALL MONITOR AND ALARM FILTER PRESSURE DIFFERENTIAL PRESSURE DROP FOR THE FOLLOWING:
    A. FILTERS
       a. MONITORING OF DIFFERENTIAL PRESSURE
       b. ALARM SETPOINT 1.00" W.C. (ADJ.)
11. UNOCCUPIED CONTROL
    A. HEATING CONTROL – SYSTEM CONTROLLER SHALL CYCLE UNIT ON (UNOCCUPIED HEATING MODE) WHEN A CALL FOR HEAT IS INITIATED BY SPACE TEMPERATURE SENSOR DURING UNOCCUPIED MODE AND HEATING SYSTEM IS OR CAN BE ENABLED.
       a. ENABLE FAN (HIGH SPEED)
       b. OUTDOOR AND RELIEF/EXHAUST AIR DAMPERS 100% CLOSED, RETURN AIR DAMPER 100% OPENED.
       c. DISABLE COOLING.
       d. HEATING CV 100% OPENED.
       e. SYSTEM DISABLED UPON SATISFYING THE CALL FOR HEAT AND HEATING COIL CV SHALL REMAIN UNDER CONTROL OF MIXED/DISCHARGE AIR TEMPERATURE CONTROL.
    B. COOLING CONTROL – NO UNOCCUPIDE COOLING
12. HUMIDITY CONTROL - ?
13. INITIAL START-UP (OPTIMAL START) CONTROL – SYSTEM CONTROLLER SHALL ENABLE UNIT PRIOR TO SCHEDULED OCCUPANCY UTILIZING OPTIMUM START LOGIC TO ADJUST STARTUP TIME FOR SYSTEM.
    A. BASED ON SPACE TEMPERATURE AND HISTORIC ELAPSE TIME TO REACH SETPOINT.
    B. SYSTEM SHALL BE ENABLED AND PROVIDE HEATING AND COOLING BASED ON THE SPACE TEMPERATURE SENSOR TO BRING SPACE TO OCCUPIED SETPOINT.
       a. ENABLE FAN.
       b. OUTDOOR AND RELIEF/EXHAUST AIR DAMPERS 100% CLOSED, RETURN AIR DAMPER 100% OPENED.
          - UNLESS ECONOMIZER IS ENABLED.
       c. UPON REACHING SETPOINT, SYSTEM SHALL SWITCH TO OCCUPIED MODE.
14. PRE AND POST OCCUPANCY PURGE – WHEN ENABLED BY THE OPERATOR THE UNIT CONTROLLER WILL BEGIN THE OCCUPIED OPERATION 2 HOURS (ADJ.) PRIOR TO THE SCHEDULED OCCUPANCY AND EXTEND OPERATION 2 HOURS (ADJ.) BEYOND SCHEDULED OCCUPANCY.
    A. OUTDOOR AND RELIEF AIR DAMPERS SHALL BE AT THEIR MAXIMUM SCHEDULED OPEN POSITION WHILE MAINTAINING THE MIXED AIR TEMPERATURE LIMIT.
    B. INTEGRATE PRE-PURGE FEATURE WITH THE OPTIMUM START LOGIC TO ALLOW BOTH OPERATIONS TO FUNCTION CONCURRENTLY (OUTDOOR AND RELIEF AIR DAMPERS OPEN) THUS NOT RUNNING SEQUENCES END-TO-END.
15. TIMED OVERRIDE CONTROL – SYSTEM CONTROLLER SHALL ENABLE SYSTEM WHEN ASSOCIATED SPACE TIMED OVERRIDE (2 HOURS (ADJ.)) IS ENABLED, SYSTEM SHALL BE ENABLE AND FUNCTION AS IN OCCUPIED MODE.
16. BI-POLAR IONIZATION
    A. ENABLE WHENEVER SUPPLY FAN IS ENERGIZED.
17. SAFETY SHUTDOWN:
    A. PROVIDE A LOW-TEMPERATURE PROTECTION THERMOSTAT(S) ON THE LEAVING SIDE OF HEATING HOT WATER COIL WHICH WILL DE-ENERGIZE UNIT, CLOSE MIXED AIR DAMPERS (CLOSING OUTDOOR/RELIEF/EXHAUST AIR DAMPER(S)), CLOSE CHILLED WATER COIL CONTROL VALVE AND THE HEATING HOT WATER COIL CONTROL VALVE SHALL BE FULLY OPENED AND COIL PUMP ENERGIZED. PROVIDE MANUAL RESET.

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Addendum No. 2 December 16, 2022

ISSUED FOR	DATE

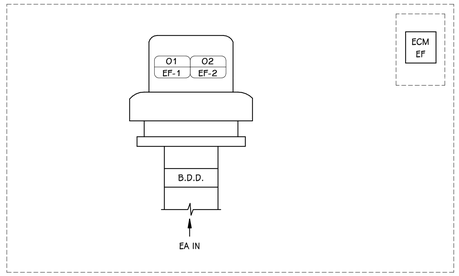
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
TEMPERATURE CONTROLS

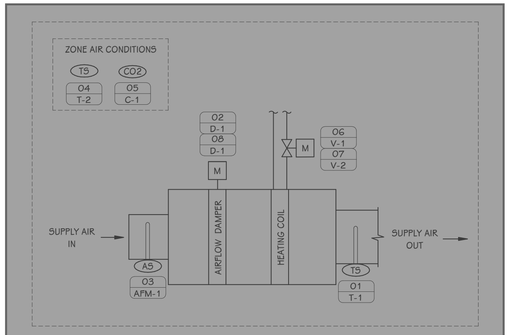
DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 605
21-807.00



EXHAUST FAN (EF-1, 2, 4 & 5) CONTROLS DIAGRAM

SCALE: NONE



VAV TERMINAL UNIT CONTROLS DIAGRAM

SCALE: NONE

CONTROL POINTS

NUMBER	TAG	DESCRIPTION	ALARM	TREND	MISC.	REMARKS
EXHAUST FAN (EF-1, EF-2, EF-4, & EF-5)						
01	EF-1	STATUS	▮	▮		
02	EF-2	ENABLE/DISABLE		▮		
VAV TERMINAL UNIT CONTROL POINTS						
01	T-1	DISCHARGE AIR TEMPERATURE		▮		
02	D-1	AIR DAMPER POSITION		▮		
03	AFM-1	SUPPLY AIR FLOW		▮		
04	T-2	ZONE AIR TEMPERATURE		▮		
05	C-1	ZONE CARBON DIOXIDE LEVEL		▮		
06	V-1	HEATING COIL VALVE SIGNAL		▮		
07	V-2	HEATING COIL VALVE OUTPUT		▮		
08	D-1	AIR DAMPER OUTPUT		▮		

SEQUENCE OF OPERATIONS

NOTE: ALL LABOR, MATERIAL, EQUIPMENT AND SOFTWARE NOT SPECIFICALLY INDICATED WITHIN CONTROLS DRAWINGS THAT IS REQUIRED TO MEET THE FUNCTIONAL INTENT OF THE SEQUENCE OF OPERATIONS SHALL BE PROVIDED WITHOUT ADDITIONAL COST. POINT LISTS SHALL BE A GUIDE TO THE POINTS REQUIRED FOR CONTROL SYSTEM. FINAL POINTS SHALL BE DETERMINED BY SEQUENCE OF OPERATIONS. ALL SET POINTS SHALL BE OPERATOR ADJUSTABLE THROUGH THE BMS. ALL POINTS SHALL BE TRENDABLE.

VAV TERMINAL UNIT CONTROLS:

1. PROVIDE DIRECT DIGITAL CONTROLS (DDC) FOR EACH TERMINAL AIR UNIT OPERATION. UNITS ARE A COMBINATION OF VARIABLE/CONSTANT VOLUME UNITS, PRESSURE INDEPENDENT CONTROLLER, AIRFLOW DAMPER AND ACTUATOR, REHEAT COIL, CONTROL VALVE (CV) AND ACTUATOR, SPACE TEMPERATURE/HUMIDITY/CO2 SENSORS.
   A. SPACE SENSORS SHALL HAVE LIMITED SETPOINT ADJUSTMENT AND AN OVERRIDE BUTTON FUNCTIONALITY.
2. TERMINAL AIR UNIT ADJUSTABLE SCHEDULE BASED ON THE FOLLOWING:
   A. TIME OF DAY (TOD) SCHEDULE.
      a. TO BE DETERMINED BY OWNER (CONSULT WITH OWNER).
      b. SUGGESTED OCCUPIED SCHEDULE: 7AM-5PM M-F, OFF SAT-SUN, OFF HOLIDAYS
   B. ENABLED AND DISABLED BASED ON MANUAL OVERRIDE FROM DDC.
3. TERMINAL UNIT ADJUSTABLE SETPOINTS:
   A. OCCUPIED 75°F COOLING / 70°F HEATING
   B. STANDBY 78°F COOLING / 68°F HEATING (BASED ON LIGHTING OCCUPANCY SENSOR(S))
   C. UNOCCUPIED 95°F COOLING / 55°F HEATING
   D. CO2 800 PPM MINIMUM / 1,200 PPM MAXIMUM
4. OCCUPIED TEMPERATURE CONTROL – CONTROLLER SHALL MODULATE AIRFLOW DAMPER AND REHEAT COIL CV TO MAINTAIN AN ADJUSTABLE SPACE TEMPERATURE SETPOINT MEASURED BY A SPACE TEMPERATURE THERMOSTAT.
   A. COOLING – UPON A RISE IN SPACE TEMPERATURE ABOVE SPACE TEMPERATURE SETPOINT, CONTROLLER SHALL RESPOND BASED ON THE FOLLOWING:
      a. MODULATE AIRFLOW DAMPER BETWEEN THE MINIMUM AND MAXIMUM COOLING AIRFLOW CFM SETPOINTS TO MAINTAIN SPACE TEMPERATURE SETPOINT.
   B. HEATING – UPON A FALL IN SPACE TEMPERATURE BELOW SPACE TEMPERATURE SETPOINT, CONTROLLER SHALL RESPOND BASED ON THE FOLLOWING:
      a. MODULATE AIRFLOW DAMPER (FIRST STAGE HEATING) TO MINIMUM HEATING AIRFLOW CFM SETPOINT AND MODULATE REHEAT CV TO MAINTAIN SPACE TEMPERATURE SETPOINT.
      b. MODULATE AIRFLOW DAMPER (SECOND STAGE HEATING) BETWEEN THE MINIMUM AND MAXIMUM HEATING AIRFLOW CFM SETPOINTS TO MAINTAIN SPACE TEMPERATURE SETPOINT.
      c. PROVIDE STAGED HEATING WITH SPACES THAT HAVE ASSOCIATED RADIANT HEAT.
         • RADIANT 1ST STAGE, REHEAT COIL 2ND STAGE, INCREASED AIRFLOW 3RD STAGE.
      d. LIMIT DISCHARGE AIR TEMPERATURE TO BE NO GREATER THAN 20°F (ADJ.) ABOVE ACTIVE SPACE HEATING SETPOINT.
   C. VENTILATION – UPON SPACE TEMPERATURE SETPOINT BEING SATISFIED, CONTROLLER SHALL RESPOND BASED ON THE FOLLOWING:
      a. AIRFLOW DAMPER TO MINIMUM COOLING AIRFLOW CFM SETPOINT.
      b. REHEAT CV 100% CLOSED.
   D. STANDBY – UPON SPACE OCCUPANCY SENSOR INDICATING UNOCCUPIED AND AFTER TIME DELAY, CONTROLLER SHALL RESPOND BASED ON THE FOLLOWING:
      a. SPACE TEMPERATURE IS SETBACK TO STANDBY SETPOINTS.
         • RESET AIRFLOW SETPOINTS TO 50% OF DESIGN MINIMUM.
5. OCCUPIED CO2 CONTROL – CONTROLLER SHALL MODULATE AIRFLOW DAMPER TO MAINTAIN AN ADJUSTABLE SPACE CO2 SETPOINT MEASURED BY A SPACE CO2 SENSOR.
   A. CO2 – UPON A RISE OR FALL IN SPACE CO2 CONCENTRATES ABOVE OR BELOW SPACE CO2 SETPOINT, CONTROLLER SHALL RESPOND BASED ON THE FOLLOWING:
      a. MODULATE AIRFLOW DAMPER BETWEEN THE MINIMUM AND MAXIMUM AIRFLOW CFM SETPOINTS TO MAINTAIN SPACE CO2 SETPOINT.
      b. WHEN SPACE CO2 READING INCREASES ABOVE MINIMUM SETPOINT, MODULATE AIRFLOW DAMPER OPEN BEYOND NORMAL CONTROLLED POSITION.
      c. WHEN SPACE CO2 READING REACHES MAXIMUM SETPOINT (MIN + BAND), THE AIRFLOW DAMPER SHALL BE AT ITS MAXIMUM AIRFLOW CFM SETPOINT.
      d. WHEN SPACE CO2 READING DECREASES, THE AIRFLOW DAMPER SHALL START TO MODULATE CLOSED TO ITS NORMALLY CONTROLLED OPERATION.
   B. REHEAT CV MODULATES TO MAINTAIN SPACE TEMPERATURE SETPOINT AS NEEDED.
   C. MONITOR QUANTITY OF ROOMS IN CO2 OVERRIDE. REFER TO ZONE HVAC SEQUENCING FOR ACTIONS BY ZONE HVAC SYSTEM DUE TO HIGH CO2 LEVELS REQUESTS.
6. OCCUPIED DE-HUMIDIFICATION CONTROL – CONTROLLER SHALL MODULATE AIRFLOW DAMPER AND REHEAT CV TO MAINTAIN AN ADJUSTABLE SPACE HUMIDITY SETPOINT MEASURED BY A SPACE HUMIDISTAT.
   A. DE-HUMIDIFICATION – UPON A RISE IN SPACE HUMIDITY ABOVE SPACE HUMIDITY SETPOINT, CONTROLLER SHALL RESPOND BASED ON THE FOLLOWING:
      a. MODULATE AIRFLOW DAMPER TO MAXIMUM COOLING AND MODULATE REHEAT CV TO MAINTAIN SPACE TEMPERATURE SETPOINT.
         • WHEN SPACE HUMIDITY READING DECREASES, THE AIRFLOW DAMPER SHALL START TO MODULATE CLOSED TO ITS NORMALLY CONTROLLED OPERATION.
      b. MONITOR QUANTITY OF ROOMS IN HUMIDITY OVERRIDE. REFER TO ZONE HVAC SEQUENCING FOR ACTIONS BY ZONE HVAC SYSTEM DUE TO HIGH HUMIDITY LEVEL REQUESTS.
7. UNOCCUPIED TEMPERATURE CONTROL – CONTROLLER SHALL INITIATE THE FOLLOWING BASED ON A FALL OR RISE IN SPACE TEMPERATURE:
   A. COOLING – UPON A RISE IN SPACE TEMPERATURE ABOVE SPACE TEMPERATURE SETPOINT, CONTROLLER SHALL RESPOND BASED ON THE FOLLOWING:
      a. REQUEST THE ASSOCIATED ZONE HVAC SYSTEM TO BE ENABLED, (UNOCCUPIED COOLING MODE) WHEN A CALL FOR COOL IS INITIATED BY SPACE TEMPERATURE SENSOR DURING UNOCCUPIED MODE AND COOLING SYSTEM IS OR CAN BE ENABLED.
      b. ONCE ZONE HVAC SYSTEM IS ENABLED, MODULATE AIRFLOW DAMPER TO MAXIMUM COOLING AIRFLOW CFM SETPOINT.
      c. ZONE HVAC SYSTEM ENABLE POINT SHALL BE BASED ON QUANTITY OF REQUESTS FOR COOLING.
      d. WHEN SPACE TEMPERATURE READING DECREASES BELOW UNOCCUPIED SPACE TEMPERATURE SETPOINT, RELEASE AIRFLOW DAMPER OVERRIDE AND ZONE HVAC SYSTEM REQUEST.
   B. HEATING - UPON A FALL IN SPACE TEMPERATURE BELOW SPACE TEMPERATURE SETPOINT, CONTROLLER SHALL RESPOND BASED ON THE FOLLOWING:
      a. REQUEST THE ASSOCIATED ZONE HVAC SYSTEM TO BE ENABLED. (UNOCCUPIED HEATING MODE) WHEN A CALL FOR HEAT IS INITIATED BY SPACE TEMPERATURE SENSOR DURING UNOCCUPIED MODE AND HEATING SYSTEM IS OR CAN BE ENABLED.
      b. ONCE ZONE HVAC SYSTEM IS ENABLED, MODULATE AIRFLOW DAMPER TO MAXIMUM HEATING AIRFLOW CFM SETPOINT
         • REHEAT CV 100% OPENED.
      c. ZONE HVAC SYSTEM ENABLE POINT SHALL BE BASED ON QUANTITY OF REQUESTS FOR HEATING.
      d. WHEN SPACE TEMPERATURE READING INCREASES ABOVE UNOCCUPIED SPACE TEMPERATURE SETPOINT, RELEASE AIRFLOW DAMPER AND REHEAT CV OVERRIDE AND ZONE HVAC SYSTEM REQUEST.
   C. THE FOLLOWING SHALL BE DISABLED DURING UNOCCUPIED TEMPERATURE CONTROL:
      a. DEMAND CONTROL VENTILATION (CO2).
      b. SPACE OCCUPANCY SENSOR.
      c. DE-HUMIDIFICATION.
8. INITIAL STARTUP CONTROL – PRIOR TO ZONE HVAC SYSTEM STARTING, ALL ASSOCIATED TERMINAL UNIT CONTROLLERS SHALL DRIVE AIRFLOW DAMPERS OPEN.
9. PRE AND POST OCCUPANCY PURGE – WHEN ENABLED BY THE OPERATOR THE UNIT CONTROLLER WILL BEGIN THE OCCUPIED OPERATION 2 HOURS (ADJ.) PRIOR TO THE SCHEDULED OCCUPANCY AND EXTEND OPERATION 2 HOURS (ADJ.) BEYOND SCHEDULED OCCUPANCY.
   A. OPEN TERMINAL UNIT DAMPER TO MAXIMUM SCHEDULED AIRFLOW
10. TIMED OVERRIDE CONTROL – PROVIDE LIMITED TIME OVERRIDE OF UNOCCUPIED MODE.

SEQUENCE OF OPERATIONS (CONT'D)

EXHAUST FAN CONTROLS:

A. MONITOR AND ALARM THE OPERATION OF ALL FANS.
B. THE FOLLOWING EXHAUST FANS SHALL BE CONTROLLED BY BMS USING OCCUPIED/UNOCCUPIED TIME SEQUENCING TO CYCLE FAN MOTOR AND OPEN CONTROL DAMPER. EACH FAN SHALL HAVE ITS OWN SCHEDULE:
   a. EF-A1 (TOILET ROOMS)
   b. EF-A4 (WORK ROOM 175)
   c. EF-B1 (TOILET ROOMS)
   d. EF-C1 (TOILET ROOMS)
   e. EF-K1 (TOILET ROOMS, BREAK ROOM, VAULT)
   f. EF-K2 (TOILET ROOMS)
   g. EF-K3 (TOILET ROOMS)
   h. EF-K11 (TOILET ROOMS)
   i. EF-M2 (TOILET ROOMS, STORAGE ROOMS, WORK ROOMS)
C. THE FOLLOWING EXHAUST FANS SHALL BE CONTROLLED LOCALLY WITH A (1)ONE HOUR WALL TIMER SWITCH.
   a. EF-A2 (PHYSICS A14)
   b. EF-B2 (BIOLOGY B15)
   c. EF-B3 (PREP ROOM 187)
   d. EF-B4 (BIOLOGY B14)
   e. EF-C2 (CHEMESTRY C19)
   f. EF-C3 (PREP ROOM 206)
   g. EF-C4 (CHEMESTRY C17)
   h. EF-C6 (SCIENCE C10)
   i. EF-K4 (PREP ROOM 317)
   j. EF-K5 (CHEMESTRY K17)
   k. EF-K6 (CHEMESTRY K17)
   l. EF-K7 (PREP ROOM 329)
   m. EF-K9 (BIOLOGY K10)
   n. EF-K10 (BIOLOGY 335)
D. THE FOLLOWING EXHAUST FANS SHALL BE CONTROLED BY FUME HOOD SWITCH.
   a. EF-A3 (PHYSICS A14 FUME HOOD)
   b. EF-C5 (CHEMESTRY C17 FUME HOOD)
   c. EF-K8 (CHEMESTRY K17 FUME HOOD)
E. THE FOLLOWING EXHAUST FAN SERVES AUTOBODY PAINT BOOTH AND SHALL BE INTERLOCTED WITH AHU-M2.
   a. EF-M1 (AUTOBODY PAINT BOOTH)

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

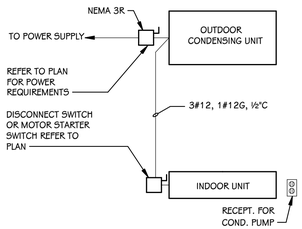
OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

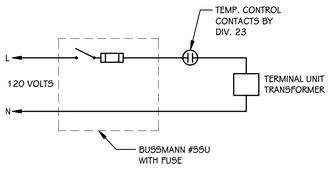
SHEET TITLE
TEMPERATURE CONTROLS

DATE
NOVEMBER 22, 2022

SHEET NUMBER
M 606
21-807.00



TYPICAL AC SPLIT SYSTEM
SCALE: NONE



TERMINAL UNIT (TU) CONTROL
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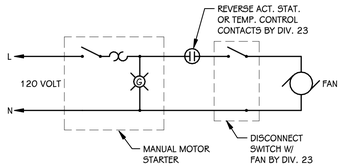
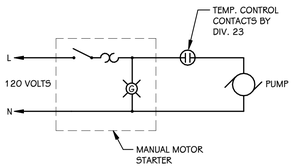
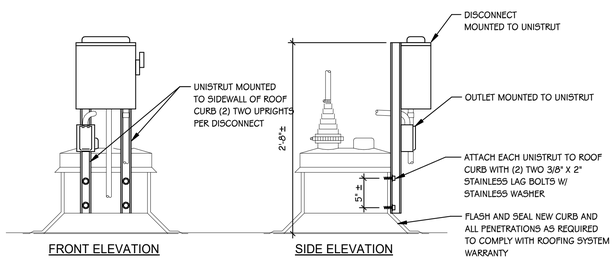


EXHAUST FAN CONTROL
SCALE: NONE



CIRCULATOR PUMP CONTROL
SCALE: NONE



DISCONNECT MOUNTING DETAIL - ROOF
SCALE: NONE

GENERAL ELECTRICAL DEMOLITION NOTES

1 FIXTURES, DEVICES, AND EQUIPMENT SHOWN DASHED, WITH AN "X", OR WITH KEYED NOTES ARE TO BE REMOVED. FIXTURES, DEVICES, AND EQUIPMENT SHOWN LIGHTLY, OR WITH "EX" ARE EXISTING TO REMAIN UNDISTURBED.

2 REMOVE ALL LIGHT FIXTURES, DEVICES, WIRING, AND CONDUIT FROM WALLS AND CEILINGS TO BE DEMOLISHED. COORDINATE WITH ARCHITECTURAL. REMOVE ABANDONED CONDUIT AND WIRING BACK TO SOURCE.

3 DISCONNECT AND REMOVE ALL ELECTRICAL DEVICES, CONDUIT, AND WIRE ASSOCIATED WITH DEMOLISHED EQUIPMENT BY OTHER TRADES. REFER TO MECHANICAL.

4 RELABEL PANEL DIRECTORIES TO REFLECT ALL CHANGES MADE BY DEMOLITION WORK. PROVIDE NEW, TYPED, DIRECTORY FOR ALL PANELS AFFECTED.

5 CONTRACTOR SHALL BE RESPONSIBLE FOR PROJECT PHASING. TEMPORARY POWER, EGRESS LIGHTING, EXIT SIGNAGE, PULL STATIONS AND BATTERY BACKUP LIGHTING SHALL BE PROVIDED AS REQUIRED WHILE BUILDING IS OCCUPIED BETWEEN PHASES OF CONSTRUCTION.

6 PATCH AND REPAIR ANY MATERIALS TO MATCH ADJACENT FOR ANY EQUIPMENT OR LIGHT FIXTURES REMOVED OR MATERIALS DAMAGED IN REMOVAL.

7 WHERE INDICATED AS DEMOLITION ON DRAWINGS REMOVE LIGHTING, LIGHTING CIRCUITS, OCCUPANCY SENSORS, CONDUIT, AND WIRE BACK TO SOURCE. REWORK ROOM RECPTACLE CIRCUITS TO SEPARATE RECEPTACLES AND LIGHTING. REMOVE EXISTING SWITCHES AND ASSOCIATED LINE VOLTAGE WIRING. PROVIDE BARRIER BETWEEN LINE VOLTAGE AND LOW VOLTAGE WIRING AS REQUIRED FOR NEW CONSTRUCTION. NEW FIXTURES SHALL BE CONNECTED TO ALL NEW ROOM LIGHTING CIRCUITS.

8 PROVIDE ALLOWANCE TO TEMPORARILY SUPPORT EXISTING CEILING FIRE ALARM STROBES AND SMOKE DETECTORS TO REMAIN IN CEILINGS TO BE REPLACED. REINSTALL APPROXIMATELY 250 DEVICES INTO NEW CEILING.

GENERAL ELECTRICAL POWER NOTES

1 ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED FOR NEW WORK OR WHERE DEVICES ARE REMOVED AND NOT REPLACED.

2 ELECTRICAL CONTRACTOR SHALL COORDINATE WITH G SERIES SHEETS DEVICE COORDINATION DETAIL. DEVICES ARE TO ALIGN VERTICALLY AND HORIZONTALLY AND FOLLOW THE RULES OF THIS DETAIL CONSISTENTLY. A PRE-INSTALL DEVICE COORDINATION MEETING FOR DEVICE FINISHES AND LAYOUT MAY BE REQUIRED IN THE SPECIFICATION FOR THIS PROJECT.

3 PATCH ALL PENETRATIONS AS REQUIRED TO MAINTAIN FIRE RATING.

4 REFER TO INTERIOR ELEVATIONS, SECTIONS, ARCHITECTURAL ELEVATIONS AND RELATED DRAWINGS FOR EXACT DEVICE LOCATIONS AND MOUNTING HEIGHTS. WHERE DEVICES ARE MOUNTED UNDER OR ABOVE TACK BOARDS, DOORS, WINDOWS, OR ANY PIECE OF EQUIPMENT, THE ELECTRICAL DEVICE SHALL BE CENTERED AS SHOWN. COORDINATE LOCATION OF FURNITURE CONNECTIONS AND/OR RECEPTACLES AND DATA RACEWAYS WITH APPROVED FURNITURE SHOP DRAWINGS, FINAL CONNECTIONS TO FURNITURE BY ELECTRICAL CONTRACTOR.

5 ALL CONDUITS SHALL RUN AS NEAR TO DECK AS PERMITTED BY CODE. SOME CONDUITS WILL BE EXPOSED AND SHALL BE RUN IN A NEAT MANNER. MAINTAIN THE SAME SPACING WHEN CONDUITS ARE RUN TOGETHER. CONCEAL JUNCTION BOXES OVER LAY-IN CEILING AND USE EMT DROPS DOWN TO CLOUDS. LOCATE CONDUIT DROPS TO CLOUDS AND CEILING ELEMENTS IN LEAST VISIBLE LOCATION.

6 PROVIDE 120V CIRCUIT FROM NEAREST GENERATOR STANDBY PANEL FOR ALL BMS/BAS CONTROL PANELS. COORDINATE LOCATION AND NUMBER OF CIRCUITS WITH CONTROLS CONTRACTOR.

7 PROVIDE 4" HOUSEKEEPING PADS FOR SWITCHGEAR, TRANSFORMERS AND ALL FLOOR MOUNTED EQUIPMENT. PROVIDE FLEXIBLE CONNECTION TO TRANSFORMERS AND SIMILAR EQUIPMENT PER SPECIFICATIONS.

8 PROVIDE FINAL CONNECTION TO ALL OWNER/CONTRACTOR PROVIDED EQUIPMENT. COORDINATE RECEPTACLE SIZES AND TYPE WITH EQUIPMENT, ADJUST CIRCUIT SIZE AS REQUIRED.

9 PROVIDE DUCT TYPE SMOKE DETECTOR AT ALL AIR HANDLERS AND SMOKE DAMPERS AS SHOWN. OBTAIN SERVICES OF EXISTING FIRE ALARM SYSTEM VENDOR FOR MODIFICATIONS TO THE EXISTING SYSTEM. PROVIDE ALL HARDWARE FOR A COMPLETE INSTALLATION.

10 REFER TO MECHANICAL AND TECHNOLOGY SHETS FOR ADDITIONAL CONDUIT AND RACEWAY REQUIREMENTS.

11 REFER TO TECHNOLOGY SHEETS FOR LOW VOLTAGE AND PROJECTOR SCOPE OF WORK.

LIGHTING SYMBOLS

		MOUNTING HEIGHTS
S	SINGLE POLE SWITCH	40"
S_{OS}	OCCUPANCY SENSOR (SET TO VACANCY MODE) - SWITCH MOUNTED	40"
S_{LV-a}	LOW VOLTAGE CONTROL SWITCH, REFER TO DETAIL	40"
OS	OCCUPANCY SENSOR (SET TO VACANCY MODE) CEILING MOUNTED	
OS	OCCUPANCY SENSOR (SET TO VACANCY MODE) - WALL MOUNTED	88"
ELD	EMERGENCY LIGHTING DEVICE - UL924 EMERGENCY SWITCHING DEVICE (FORMERLY GTD)	
	WALL MTD. LIGHT FIXTURE	
	DOWNLIGHT FIXTURE	
	DOWNLIGHT FIXTURE - EMERGENCY, SWITCHABLE	
	RECTANGULAR LIGHT FIXTURE	
	RECTANGULAR EMERGENCY LIGHT FIXTURE ON EMERGENCY POWER, SWITCHABLE	
	INDUSTRIAL LIGHT FIXTURE	
	EXIT SIGN - CEILING MOUNTED	
	EXIT SIGN - WALL MOUNTED	

RECEPTACLE SYMBOLS

	DUPLEX RECEPTACLE	16"
	DUPLEX RECEPTACLE - 4" ABOVE COUNTER BACKSPLASH	
WP	DUPLEX RECEPTACLE - WET LOCATION ENCLOSURE WITH GFI	

RECEPTACLES VARIATIONS - HEIGHT PER ABOVE UNLESS INDICATED ON DRAWINGS:

	DOUBLE DUPLEX RECEPTACLE
	DUPLEX RECEPTACLE - SURFACE MOUNTED #WM500
	DUPLEX RECEPTACLE - EMERGENCY
GFI	DUPLEX RECEPTACLE - WITH GFI
EWC	DUPLEX RECEPTACLE - FOR ELECTRIC WATER COOLER, WITH GFI
USB	DUPLEX RECEPTACLE - WITH (2) USB OUTLETS BETWEEN POWER
H	DUPLEX RECEPTACLE - HORIZONTAL MOUNTING
ST	DUPLEX RECEPTACLE - STACK ALIGNED BELOW DEVICE ABOVE (DEVICE ALIGNMENT IS NOT LIMITED TO THOSE LABELED, REFER TO ELECTRICAL DEVICE ALIGNMENT GUIDELINES)

ELECTRICAL ABBREVIATIONS

EAFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
AWG	AMERICAN WIRE GAUGE
BAS	BUILDING AUTOMATION SYSTEM
BMS	BUILDING MANAGEMENT SYSTEM
C	CONDUIT
CT	CURRENT TRANSFORMER
CU	COPPER
DW	DISHWASHER
(E)	EXISTING
EM	EMERGENCY
GAP	GENERATOR ANNUNCIATOR PANEL
GD	GARBAGE DISPOSAL
GFI	GROUND FAULT CIRCUIT INTERRUPTER, 5mA
GFP	GROUND FAULT PROTECTION OF EQUIPMENT, 30mA
GND	GROUND
IAW	IN ACCORDANCE WITH
IC	INSULATION CONTACT
IDF	INTERMEDIATE DISTRIBUTION FRAME
KCMIL	THOUSANDS OF CIRCULAR MILS
MDF	MAIN DISTRIBUTION FRAME
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NTS	NOT TO SCALE
OC	ON CENTER
REF	REFRIGERATOR
SPD	SURGE PROTECTIVE DEVICE
TR	TAMPER RESISTANT
TTB	TELECOMMUNICATIONS TERMINAL BOARD
UON	UNLESS OTHERWISE NOTED
EWC	ELECTRIC WATER COOLER
WP	WEATHERPROOF
RT	RAINTIGHT

GENERAL ELECTRICAL LIGHTING NOTES

1 ALL OCCUPANCY SENSORS AND PHOTOCELLS MOUNTED IN THE SAME ROOM SHALL BE CONNECTED TOGETHER AND OPERATE AS ONE SYSTEM. DAYLIGHT HARVESTING SHALL BE SELF CONTAINED WITHIN EACH ROOM AND SHALL BE FIELD ADJUSTED WITH ENGINEER. MANUFACTURER SHALL PROVIDE FLOOR PLANS DURING SHOP DRAWING PHASE SHOWING EXACT LOCATIONS AND QUANTITIES AS REQUIRED FOR A COMPLETE SYSTEM.

2 ALL OCCUPANCY SENSOR WIRING SHALL BE CONCEALED WITHIN CONDUIT WHERE EXPOSED. NO LOW VOLTAGE WIRING SHALL BE EXPOSED.

3 ALL CONDUITS SHALL RUN AS TIGHT TO DECK AS POSSIBLE. CONDUITS SHALL BE RUN IN A NEAT MANNER. MAINTAIN THE SAME SPACING WHEN CONDUITS ARE RUN TOGETHER. CONCEAL JUNCTION BOXES OVER LAY-IN CEILING AND USE EMT DROPS DOWN TO CLOUDS. LOCATE CONDUIT DROPS TO CLOUDS AND CEILING ELEMENTS IN LEAST VISIBLE LOCATION. NO MC-CABLE TO LIGHT FIXTURES SHALL BE VISIBLE FROM ANY ANGLE.

4 RECESS NEW DEVICES AND ASSOCIATED CONDUIT AND BACKBOX IN EXISTING WALL. CUT AND PATCH AS REQUIRED.

POWER SYMBOLS

		MOUNTING HEIGHTS
M	ELECTRIC METER	
SPD	SURGE PROTECTION DEVICE	
	MOTOR CONTROL CENTER	90" TO TOP
	PANELBOARD	72" TO TOP
	DISTRIBUTION PANELBOARD	72" TO TOP
EQ	ELECTRICAL EQUIPMENT CONNECTION - REFER TO CONNECTION SCHEDULES FOR FEEDER SIZE, BREAKERS, DISCONNECT MEANS ETC.	
TCP	TEMPERATURE CONTROL PANEL	72" TO TOP
	DISCONNECT SWITCH - UNFUSED	
	DISCONNECT SWITCH - FUSED	
	COMBINATION DISCONNECT/MAGNETIC MOTOR STARTER	
M	MANUAL MOTOR STARTER WITH PILOT LIGHT	40"
	BUSSMANN "S5U" W/FUSES	
VFD	VARIABLE FREQUENCY DRIVE	
5	MOTOR - HP AS INDICATED	
	FUSE	
	CIRCUIT BREAKER	
ET	CIRCUIT BREAKER - ELECTRONIC TRIP	
	SWITCH	
	POWER FACTOR CORRECTION CAPACITOR	
C	COIL	
	INDICATOR LIGHT (R=RED, G=GREEN, B=BLUE, Y=YELLOW, A=AMBER)	
	CURRENT TRANSFORMER	
	THERMAL OVERLOADS	
	CONTACTS - NORMALLY OPEN	
	CONTACTS - NORMALLY CLOSED	
	TRANSFORMER	
R	RELAY	
T	TRANSFORMER	
	SYSTEM GROUND - REFER TO SPECIFICATIONS	
	PUSH-BUTTON STATION - 1 HOLE	40"
	PUSH-BUTTON STATION - 2 HOLE	40"
	PUSH-BUTTON STATION - 3 HOLE	40"
	EMERGENCY MUSHROOM HEAD PUSH-BUTTON STATION - 1 HOLE	40"
EC	LIGHTING CONTACTOR	
TC	TIME CLOCK	72" TO TOP
J	JUNCTION BOX - SIZE AND TYPE AS REQUIRED	
P	PULL BOX - SIZE AND TYPE AS REQUIRED	
FH	FLUSH IN-GRADE HAND HOLE	
	DOOR OPERATOR	
	FLOOR DUPLEX RECEPTACLE	

FIRE ALARM SYMBOLS

SD	FIRE ALARM SMOKE DETECTOR - CEILING TYPE	
SD_E	FIRE ALARM SMOKE DETECTOR - ELEVATOR TYPE, CONNECT TO FIRE ALARM SYSTEM AND TO ELEVATOR CONTROL PANEL. COORDINATE WITH ELEVATOR MANUFACTURER.	
HD	FIRE ALARM HEAT DETECTOR - CEILING TYPE	
SD	FIRE ALARM SMOKE DETECTOR - DUCT TYPE	
RT	FIRE ALARM DUCT DETECTOR REMOTE TEST STATION	60"
SD	SMOKE/FIRE DAMPER, PROVIDE WITH DUCT DETECTOR AND 120V POWER	
FS	FIRE SHUTTER	
DH	MAGNETIC DOOR HOLDER	
F	FIRE ALARM MANUAL PULL STATION	40"
F K	FIRE ALARM MANUAL PULL STATION - INSTITUTIONAL W/KEY	40"
BD	BEAM DETECTOR	
V 75 F	FIRE ALARM AUDIO/VISUAL ALARM, WALL MTD., CANDELA INDICATED	80"
V 75	FIRE ALARM - VISUAL ALARM, CANDELA INDICATED	80"
F 15	FIRE ALARM AUDIO/VISUAL ALARM, CEILING MTD., CANDELA INDICATED	
V 15	FIRE ALARM - VISUAL ALARM, CEILING MTD., CANDELA INDICATED	
S	FIRE ALARM SPEAKER	
WF	SPRINKLER SYSTEM FLOW SWITCH	
T	FIRE ALARM - BELL	
SSV	SPRINKLER VALVE MONITOR SWITCH	
FACP	FIRE ALARM CONTROL PANEL - FLUSH MTD.	72" TO TOP
FAA	FIRE ALARM ANNUNCIATOR PANEL REMOTE - FLUSH MTD.	60" TO TOP
NAC	STROBE PANEL	72" TO TOP

NOTES:

MOUNT DEVICES AT HEIGHTS INDICATED UNLESS INDICATED OTHERWISE ON PLANS. HEIGHTS ARE TO BOTTOM OF DEVICE.

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

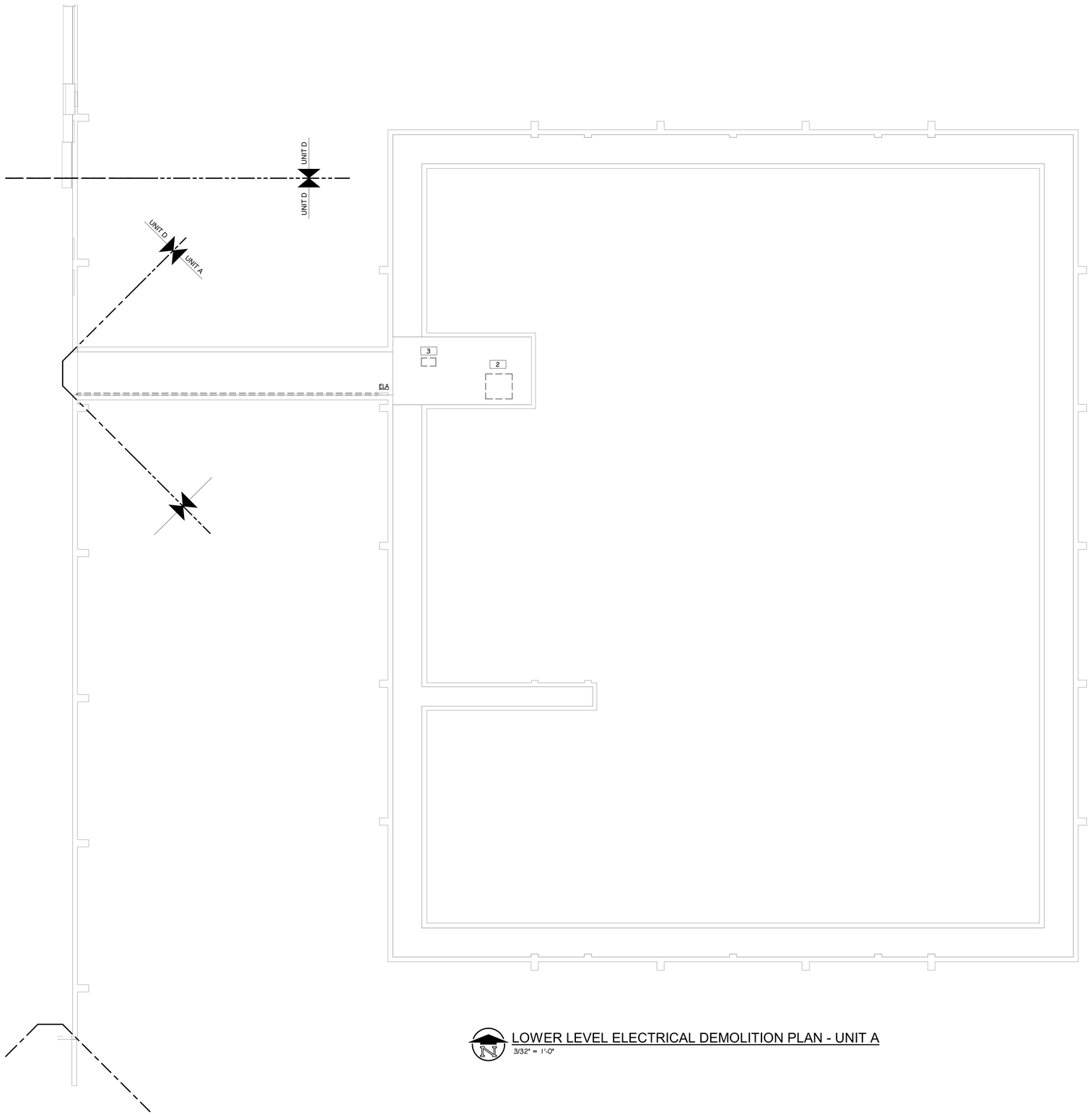
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ELECTRICAL SYMBOLS AND DETAILS

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E 001
21-807.00



LOWER LEVEL ELECTRICAL DEMOLITION PLAN - UNIT A
3/32" = 1'-0"

ELECTRICAL DEMOLITION KEYED NOTES

1 PROVIDE TEMPORARY SUPPORT FOR EXISTING LIGHT FIXTURES WITH THE SPACE. REUSE EXISTING LIGHT FIXTURES IN SAME LOCATION WITHIN SPACE. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION.

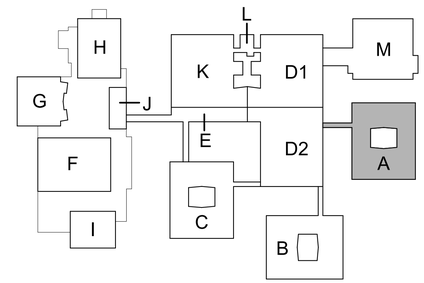
2 REMOVE THE ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT AND ALL ASSOCIATED WIRE AND CONDUIT BACK TO NEAREST JUNCTION BOX. RETAIN CIRCUIT FOR REUSE.

3 REMOVE THE ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT AND ALL ASSOCIATED WIRE AND CONDUIT BACK TO SOURCE.

4 REMOVE THE ELECTRICAL CONNECTION TO ACCU AND ALL WIRE BACK TO SOURCE. RETAIN CONDUIT FOR NEW CIRCUIT. REPLACE BREAKERS IN PANELS LPB2 AND LPC3 AS SHOWN IN NEW PANEL SCHEDULE.

5 REMOVE CONNECTION TO BI-POLAR IONIZATION. RECONNECT IN NEW EQUIPMENT.

LEVEL 1 - KEY PLAN



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LOY NORRIX HIGH
SCHOOL MECHANICAL
IMPROVEMENTS
PROJECT

OWNER
KALAMAZOO PUBLIC
SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL ELECTRICAL
DEMOLITION PLAN - UNIT A

DATE
NOVEMBER 22, 2022

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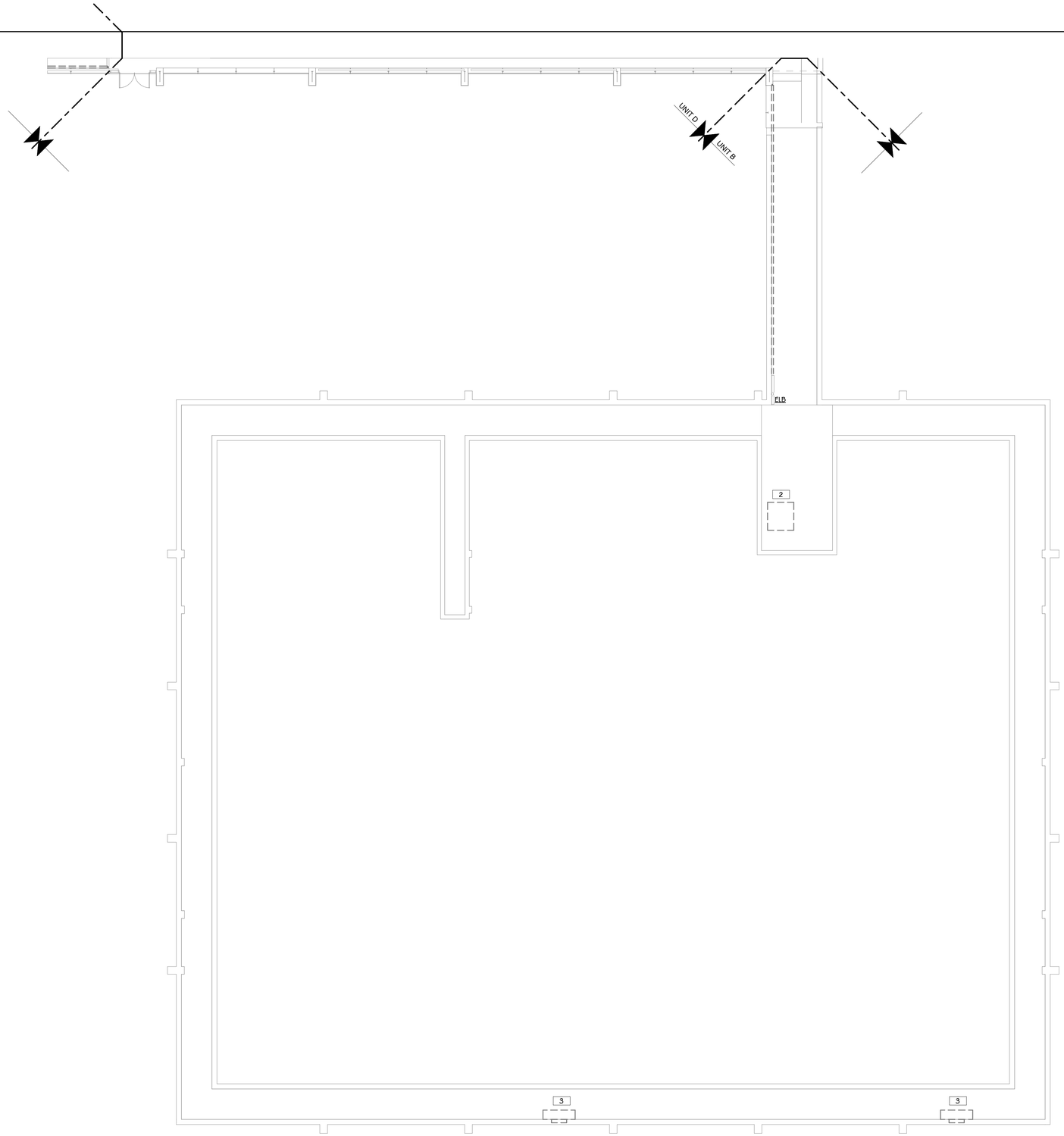

LOWER LEVEL ELECTRICAL DEMOLITION PLAN - UNIT B
3/32" = 1'-0"

ELECTRICAL DEMOLITION KEYED NOTES

1 PROVIDE TEMPORARY SUPPORT FOR EXISTING LIGHT FIXTURES WITH THE SPACE. REUSE EXISTING LIGHT FIXTURES IN SAME LOCATION WITHIN SPACE. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION.

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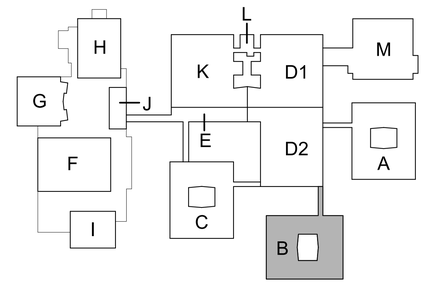
3 REMOVE THE ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT AND ALL ASSOCIATED WIRE AND CONDUIT BACK TO SOURCE.

4 REMOVE THE ELECTRICAL CONNECTION TO ACCU AND ALL WIRE BACK TO SOURCE. RETAIN CONDUIT FOR NEW CIRCUIT. REPLACE BREAKERS IN PANELS LPB2 AND LPC3 AS SHOWN IN NEW PANEL SCHEDULE.

5 REMOVE CONNECTION TO BI-POLAR IONIZATION. RECONNECT IN NEW EQUIPMENT.

LEVEL 1 - KEY PLAN



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OWNER
KALAMAZOO PUBLIC
SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL ELECTRICAL
DEMOLITION PLAN - UNIT B

DATE
NOVEMBER 22, 2022

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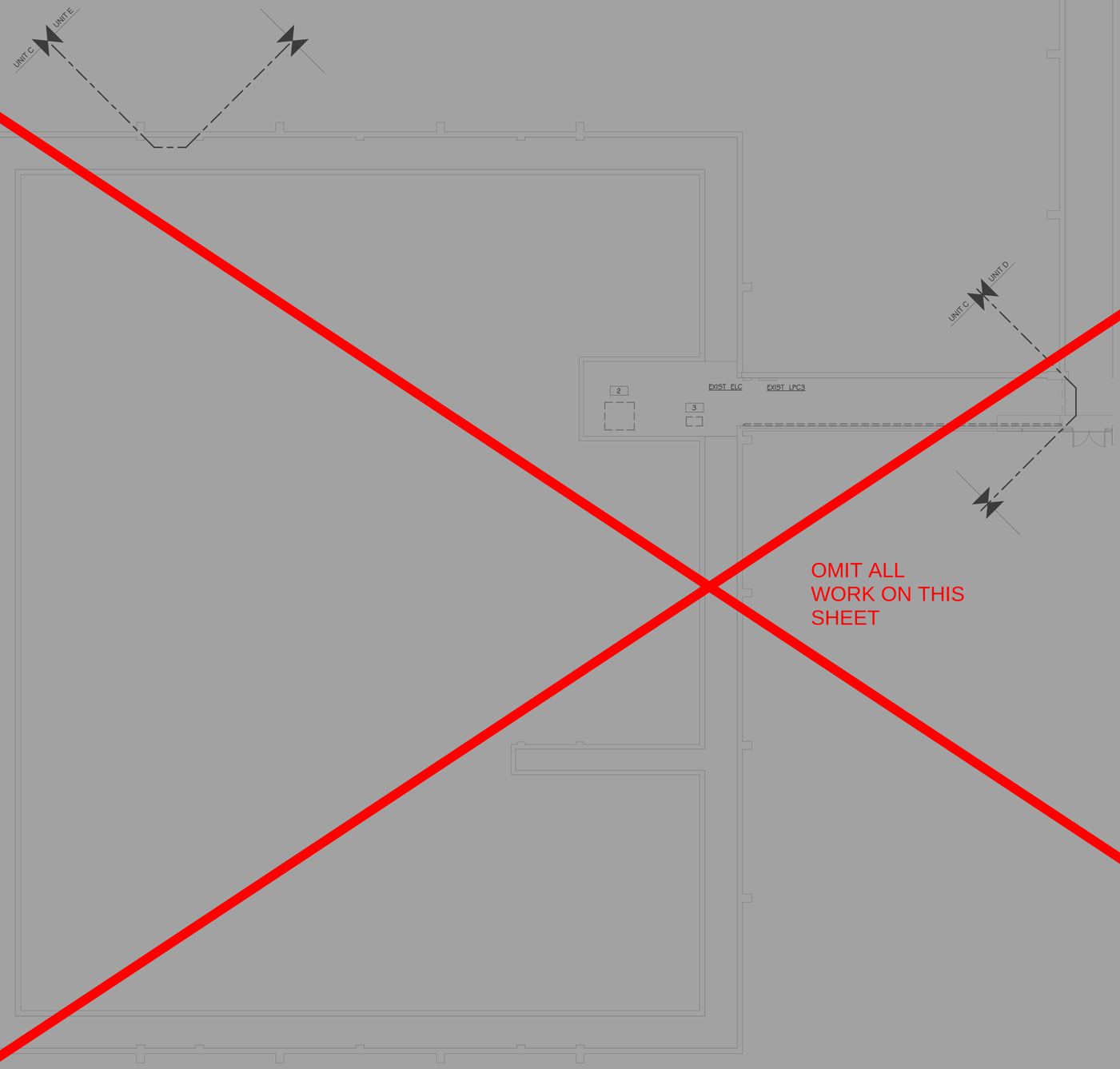

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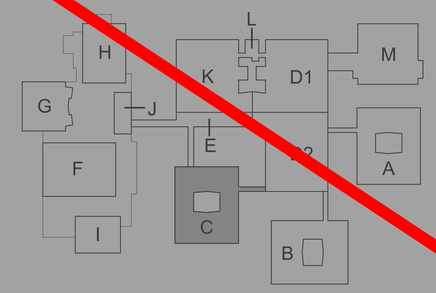
SHEET

LOWER LEVEL ELECTRICAL DEMOLITION PLAN - UNIT C
3/32" = 1'-0"

ELECTRICAL DEMOLITION KEYED NOTES

1. PROVIDE TEMPORARY SUPPORT FOR EXISTING LIGHT FIXTURES WITH THE SPACE. REUSE EXISTING LIGHT FIXTURES IN SAME LOCATION WITHIN SPACE. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION.
2. REMOVE THE ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT AND ALL ASSOCIATED WIRE AND CONDUIT BACK TO NEAREST JUNCTION BOX. RETAIN CIRCUIT FOR REUSE.
3. REMOVE THE ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT AND ALL ASSOCIATED WIRE AND CONDUIT BACK TO SOURCE.
4. REMOVE THE ELECTRICAL CONNECTION TO ACCU AND ALL WIRE BACK TO SOURCE. RETAIN CONDUIT FOR NEW CIRCUIT. REPLACE BREAKERS IN PANELS LPC2 AND LPC3 AS SHOWN IN NEW PANEL SCHEDULE.
5. REMOVE CONNECTION TO BI-POLAR IONIZATION. RECONNECT IN NEW EQUIPMENT.

LEVEL 1 - KEY PLAN



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OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL ELECTRICAL DEMOLITION PLAN - UNIT C

DATE
NOVEMBER 22, 2022

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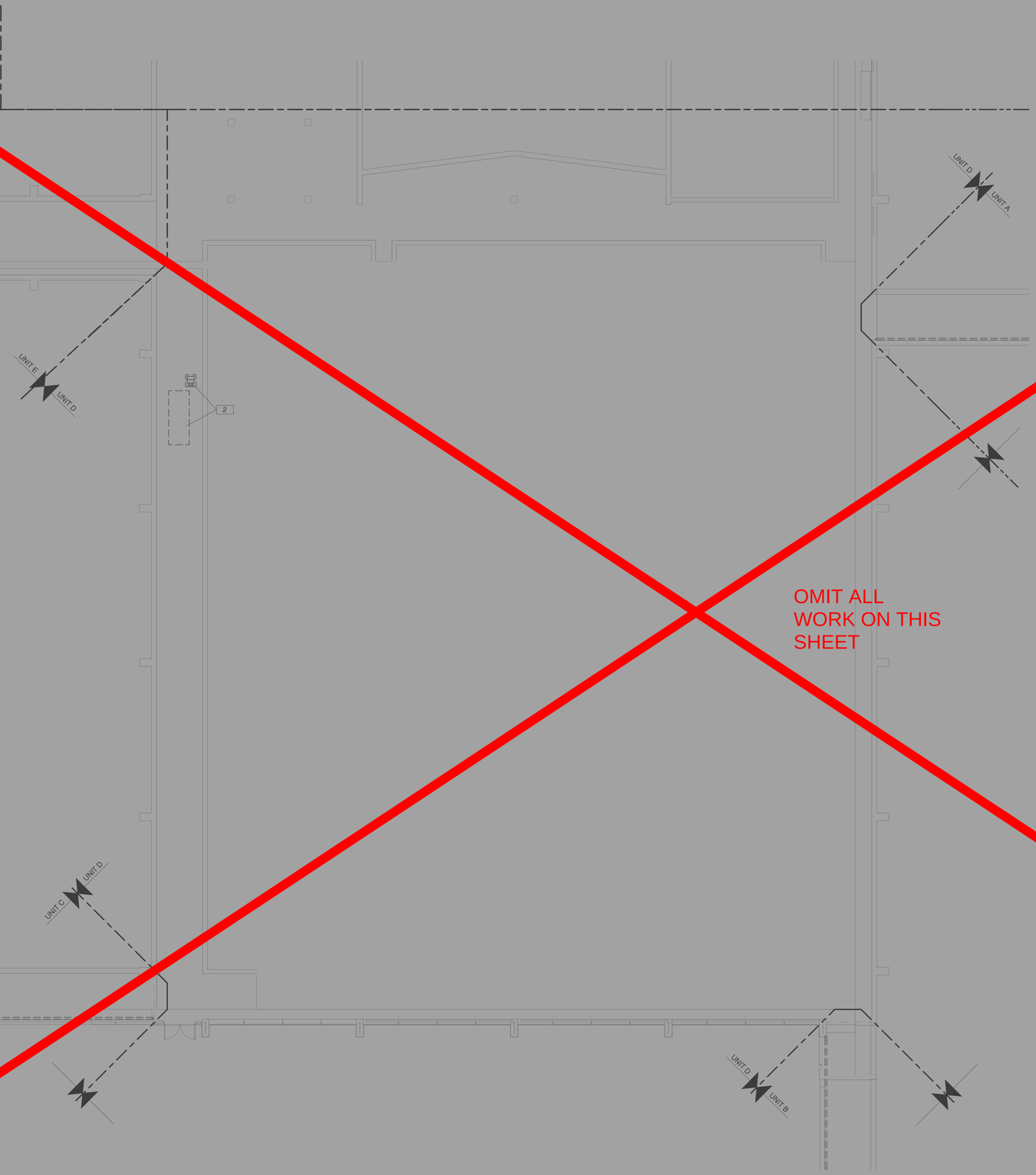

LOWER LEVEL ELECTRICAL DEMOLITION PLAN - UNIT D2
3/32" = 1'-0"

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ELECTRICAL DEMOLITION KEYED NOTES

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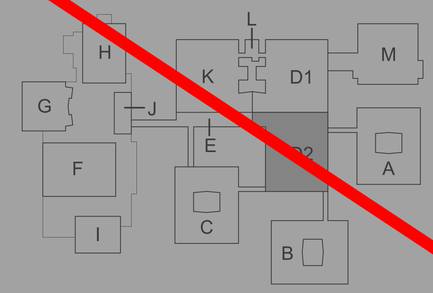
3 REMOVE THE ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT AND ALL ASSOCIATED WIRE AND CONDUIT BACK TO SOURCE.

4 REMOVE THE ELECTRICAL CONNECTION TO ACCU AND ALL WIRE BACK TO SOURCE. RETAIN CONDUIT FOR NEW CIRCUIT. REPLACE BREAKERS IN PANELS LPC2 AND LPC3 AS SHOWN IN NEW PANEL SCHEDULE.

5 REMOVE CONNECTION TO BI-POLAR IONIZATION. RECONNECT IN NEW EQUIPMENT.

LEVEL 1 - KEY PLAN



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LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL ELECTRICAL DEMOLITION PLAN - UNIT D2

DATE
NOVEMBER 22, 2022

SHEET NUMBER
ED 100D2

21-807.00

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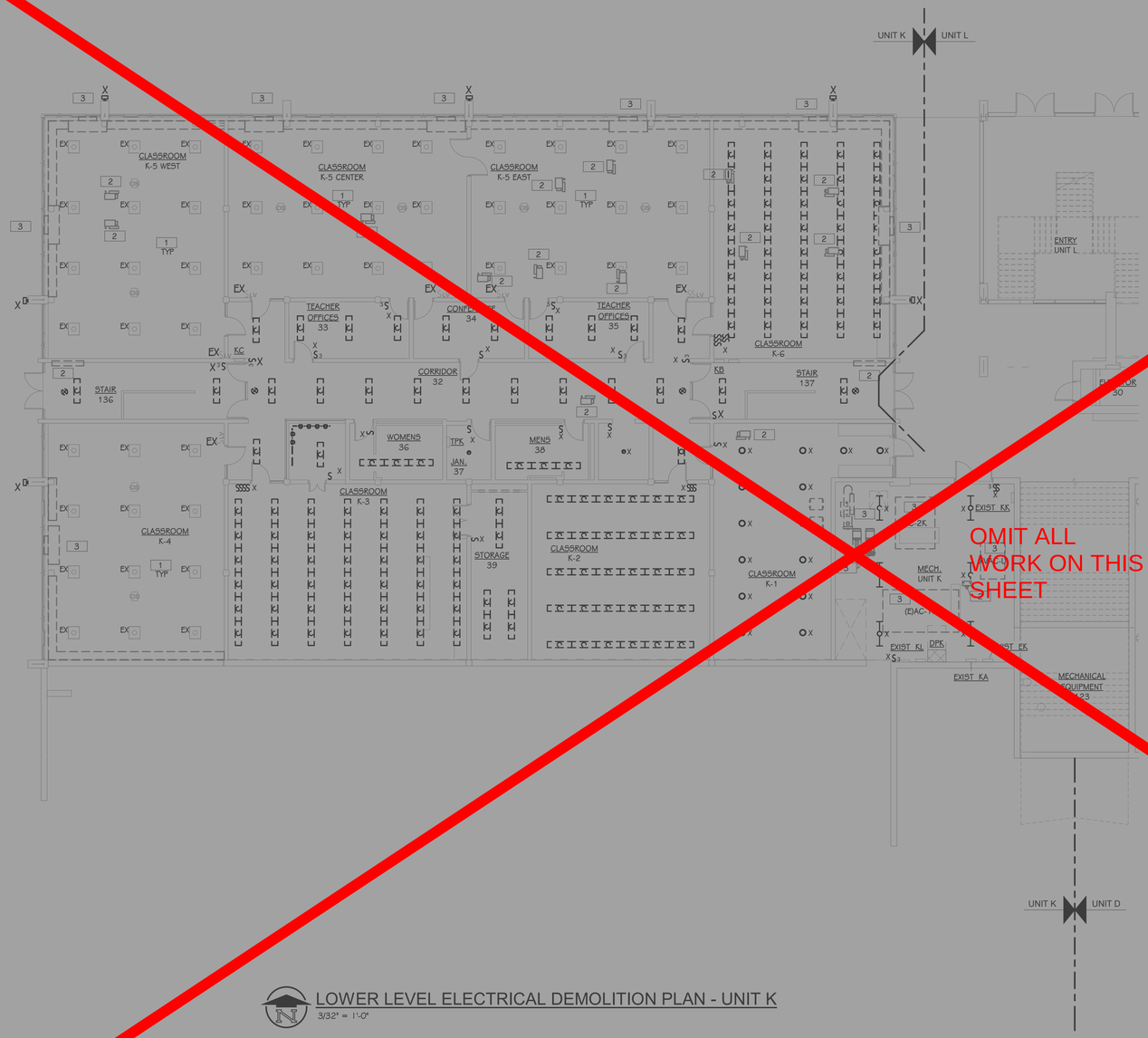

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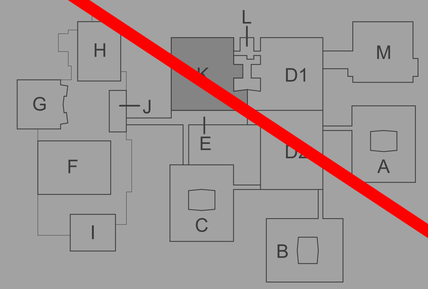
LOWER LEVEL ELECTRICAL DEMOLITION PLAN - UNIT K
3/32" = 1'-0"

LEVEL 1 - KEY PLAN



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OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL ELECTRICAL DEMOLITION PLAN - UNIT K

DATE
NOVEMBER 22, 2022

SHEET NUMBER
ED 100K

21-807.00

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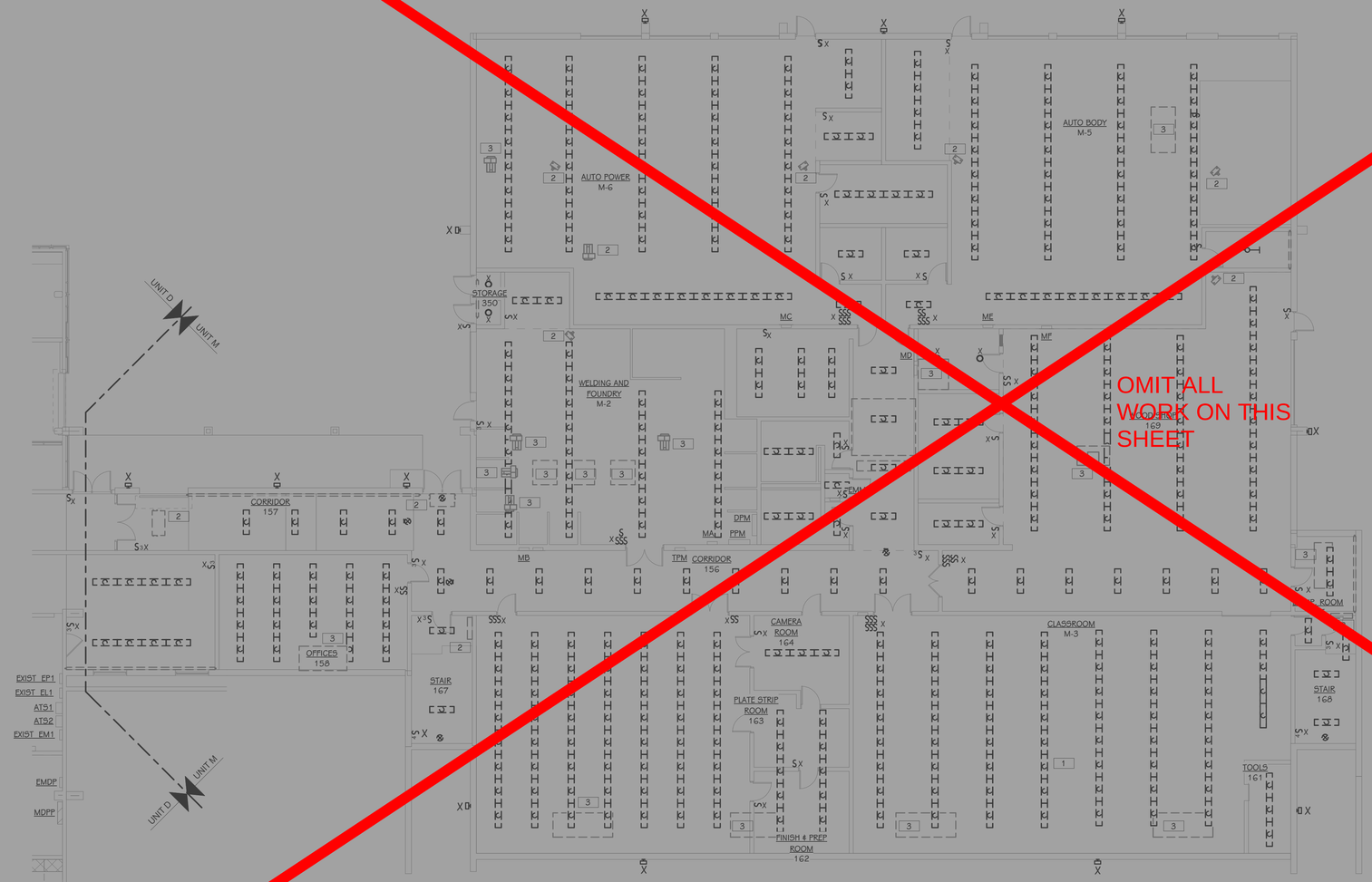
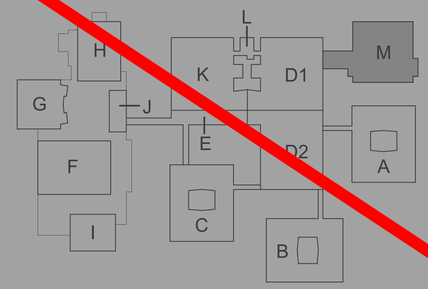


LOWER LEVEL ELECTRICAL DEMOLITION PLAN - UNIT M
3/32" = 1'-0"

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL ELECTRICAL DEMOLITION PLAN - UNIT M

DATE
NOVEMBER 22, 2022

SHEET NUMBER
ED 100M

21-807.00

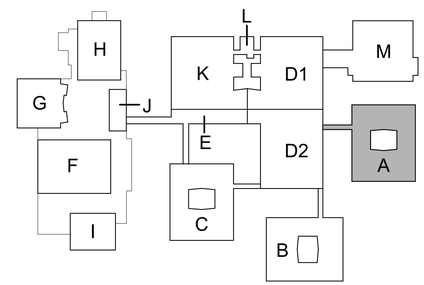
LEVEL 1 ELECTRICAL DEMOLITION PLAN - UNIT A

3/32" = 1'-0"

ELECTRICAL DEMOLITION KEYED NOTES

1. PROVIDE TEMPORARY SUPPORT FOR EXISTING LIGHT FIXTURES WITH THE SPACE. REUSE EXISTING LIGHT FIXTURES IN SAME LOCATION WITHIN SPACE. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION.
2. REMOVE THE ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT AND ALL ASSOCIATED WIRE AND CONDUIT BACK TO NEAREST JUNCTION BOX. RETAIN CIRCUIT FOR REUSE.
3. REMOVE THE ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT AND ALL ASSOCIATED WIRE AND CONDUIT BACK TO SOURCE.
4. REMOVE THE ELECTRICAL CONNECTION TO ACCU AND ALL WIRE BACK TO SOURCE. RETAIN CONDUIT FOR NEW CIRCUIT. REPLACE BREAKERS IN PANELS LPB2 AND LPC3 AS SHOWN IN NEW PANEL SCHEDULE.
5. REMOVE CONNECTION TO BI-POLAR IONIZATION. RECONNECT IN NEW EQUIPMENT.

LEVEL 1 - KEY PLAN



KEY PLAN

SCALE: NO SCALE

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IMPROVEMENTS
PROJECT

OWNER
KALAMAZOO PUBLIC
SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 ELECTRICAL DEMOLITION PLAN
- UNIT A

DATE
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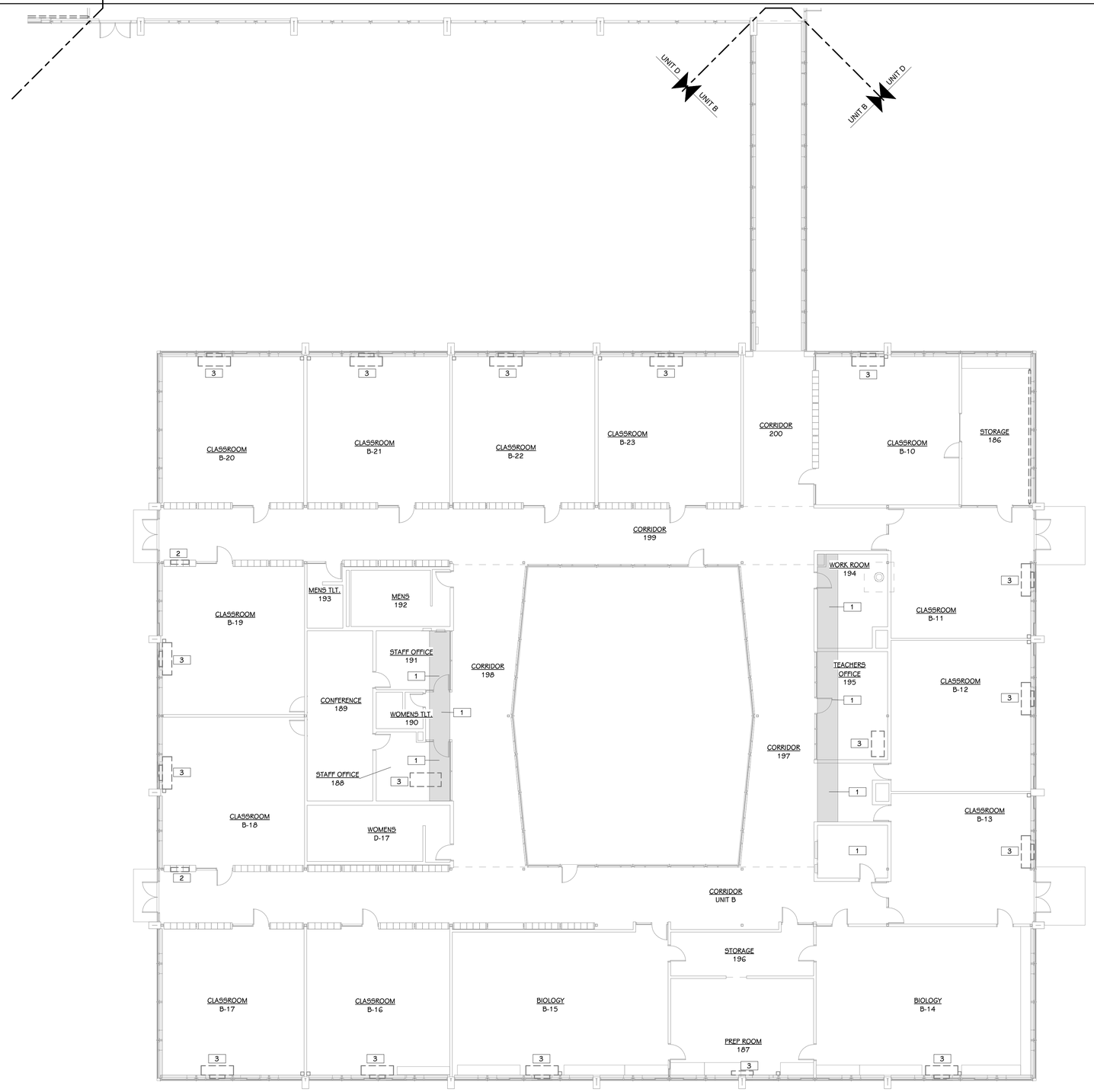
SHEET NUMBER
ED 101A

21-807.00



LEVEL 1 ELECTRICAL DEMOLITION PLAN - UNIT B

3/32" = 1'-0"

ELECTRICAL DEMOLITION KEYED NOTES

1 PROVIDE TEMPORARY SUPPORT FOR EXISTING LIGHT FIXTURES WITH THE SPACE. REUSE EXISTING LIGHT FIXTURES IN SAME LOCATION WITHIN SPACE. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION.

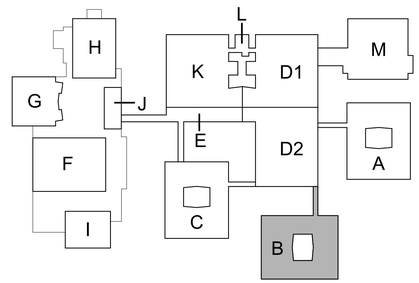
2 REMOVE THE ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT AND ALL ASSOCIATED WIRE AND CONDUIT BACK TO NEAREST JUNCTION BOX. RETAIN CIRCUIT FOR REUSE.

3 REMOVE THE ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT AND ALL ASSOCIATED WIRE AND CONDUIT BACK TO SOURCE.

4 REMOVE THE ELECTRICAL CONNECTION TO ACCU AND ALL WIRE BACK TO SOURCE. RETAIN CONDUIT FOR NEW CIRCUIT. REPLACE BREAKERS IN PANELS LPB2 AND LPC3 AS SHOWN IN NEW PANEL SCHEDULE.

5 REMOVE CONNECTION TO BI-POLAR IONIZATION. RECONNECT IN NEW EQUIPMENT.

LEVEL 1 - KEY PLAN



KEY PLAN

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OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 ELECTRICAL DEMOLITION PLAN - UNIT B

DATE
NOVEMBER 22, 2022

SHEET NUMBER
ED 101B

21-807.00

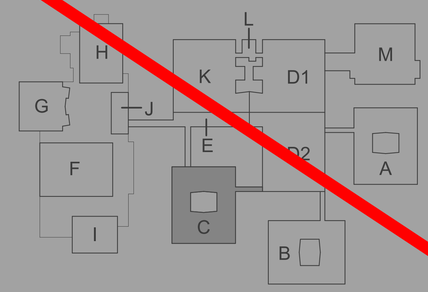
OMIT ALL WORK ON THIS SHEET

LEVEL 1 ELECTRICAL DEMOLITION PLAN - UNIT C
3/32" = 1'-0"

ELECTRICAL DEMOLITION KEYED NOTES

1. PROVIDE TEMPORARY SUPPORT FOR EXISTING LIGHT FIXTURES WITH THE SPACE. REUSE EXISTING LIGHT FIXTURES IN SAME LOCATION WITHIN SPACE. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION.
2. REMOVE THE ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT AND ALL ASSOCIATED WIRE AND CONDUIT BACK TO NEAREST JUNCTION BOX. RETAIN CIRCUIT FOR REUSE.
3. REMOVE THE ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT AND ALL ASSOCIATED WIRE AND CONDUIT BACK TO SOURCE.
4. REMOVE THE ELECTRICAL CONNECTION TO ACCU AND ALL WIRE BACK TO SOURCE. RETAIN CONDUIT FOR NEW CIRCUIT. REPLACE BREAKERS IN PANELS LPB2 AND LPC3 AS SHOWN IN NEW PANEL SCHEDULE.
5. REMOVE CONNECTION TO BI-POLAR IONIZATION. RECONNECT IN NEW EQUIPMENT.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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OWNER
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Kalamazoo, Michigan

SHEET TITLE
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DATE
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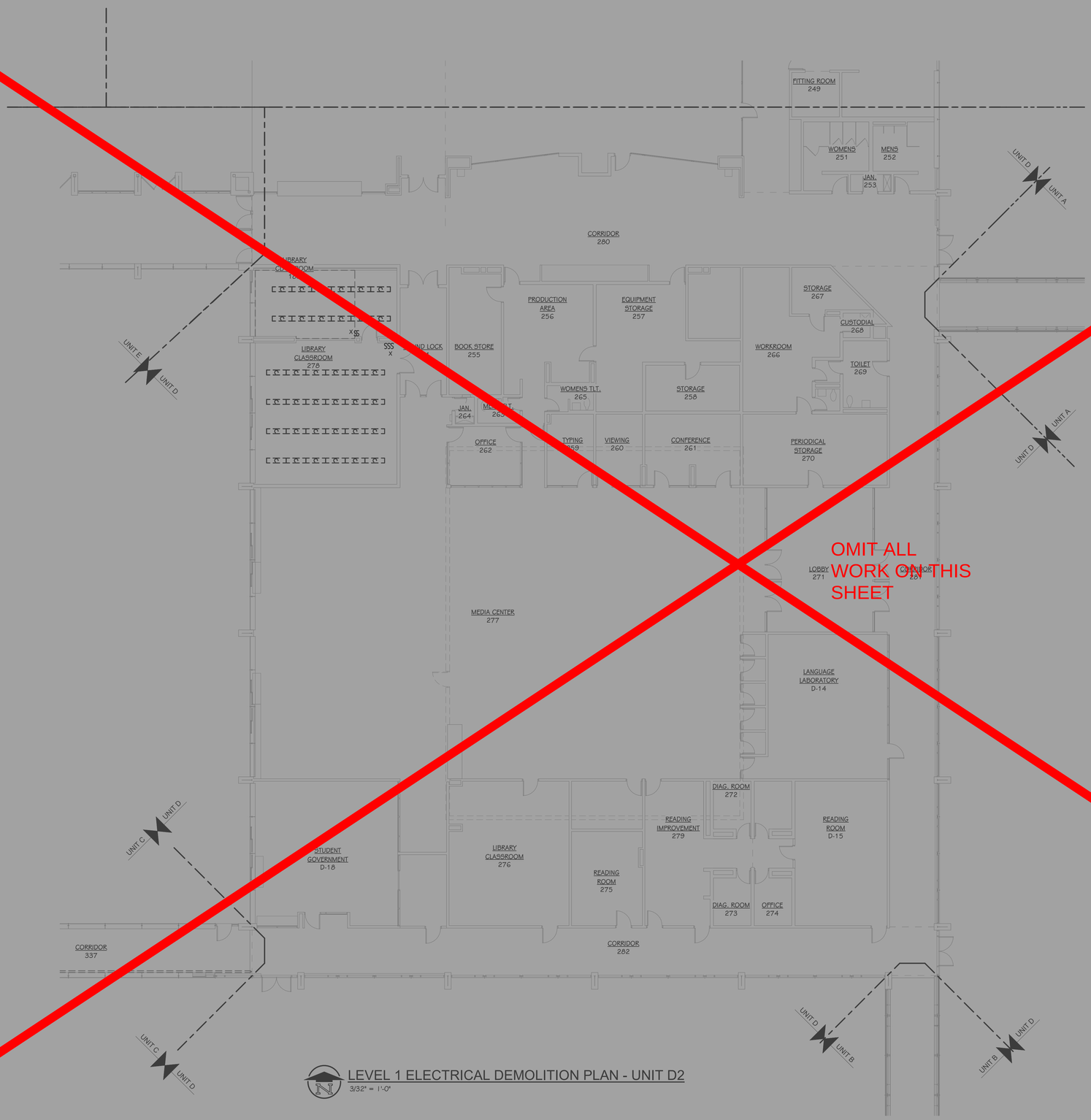
SHEET NUMBER
ED 101C

21-807.00



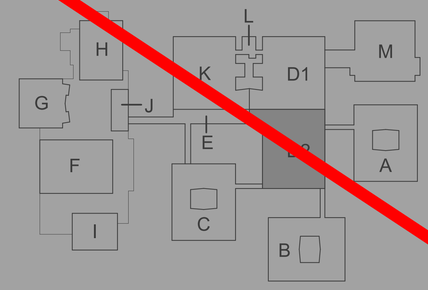
OMIT ALL WORK ON THIS SHEET

LEVEL 1 ELECTRICAL DEMOLITION PLAN - UNIT D2
3/32" = 1'-0"

ELECTRICAL DEMOLITION KEYED NOTES

1. PROVIDE TEMPORARY SUPPORT FOR EXISTING LIGHT FIXTURES WITH THE SPACE. REUSE EXISTING LIGHT FIXTURES IN SAME LOCATION WITHIN SPACE. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION.
2. REMOVE THE ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT AND ALL ASSOCIATED WIRE AND CONDUIT BACK TO NEAREST JUNCTION BOX. RETAIN CIRCUIT FOR REUSE.
3. REMOVE THE ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT AND ALL ASSOCIATED WIRE AND CONDUIT BACK TO SOURCE.
4. REMOVE THE ELECTRICAL CONNECTION TO ACCU AND ALL WIRE BACK TO SOURCE. RETAIN CONDUIT FOR NEW CIRCUIT. REPLACE BREAKERS IN PANELS LPE AND LPC3 AS SHOWN IN NEW PANEL SCHEDULE.
5. REMOVE CONNECTION TO BI-POLAR IONIZATION. RECONNECT IN NEW EQUIPMENT.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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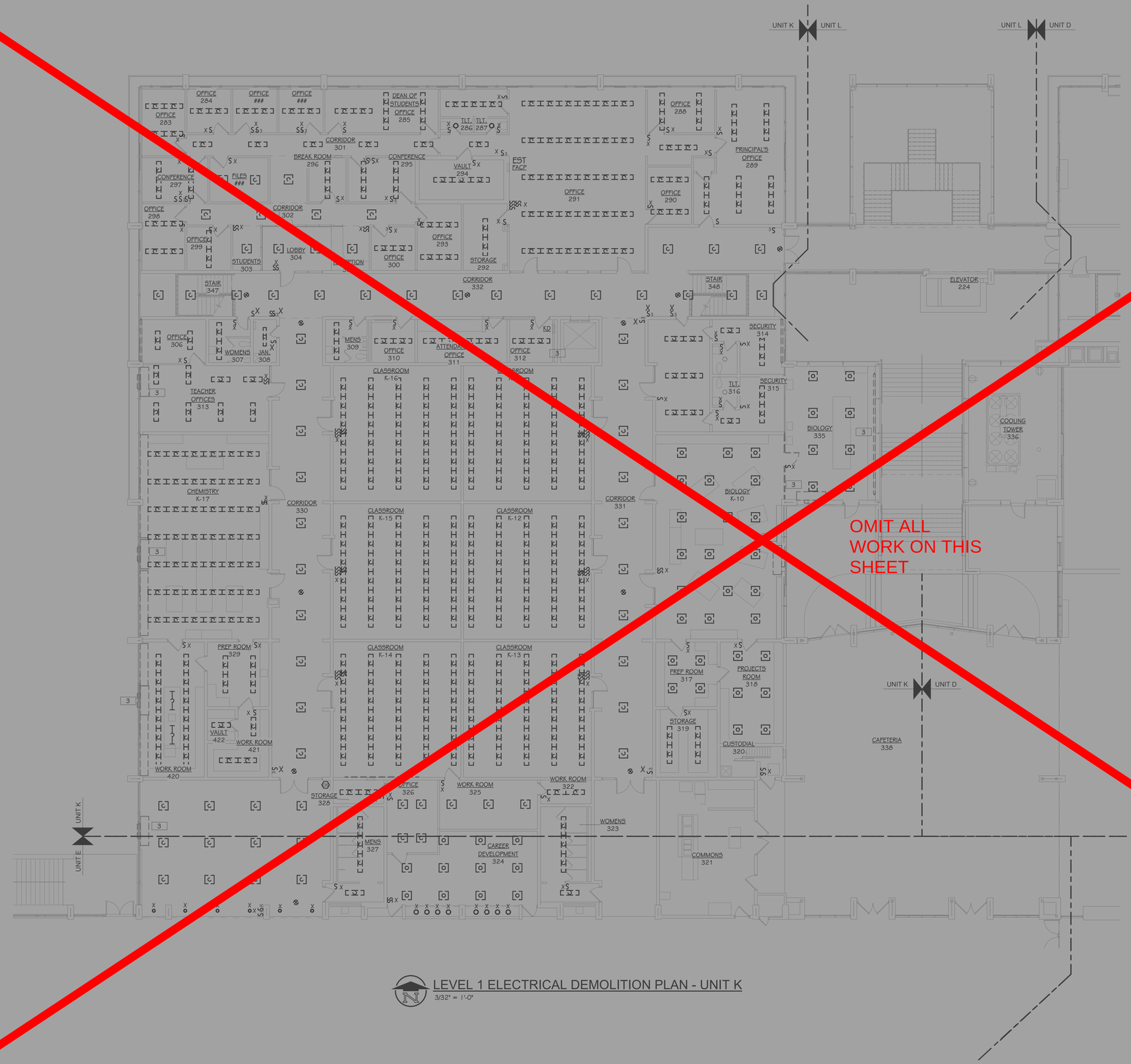
OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 ELECTRICAL DEMOLITION PLAN - UNIT D2

DATE
NOVEMBER 22, 2022

SHEET NUMBER
ED 101D2

21-807.00



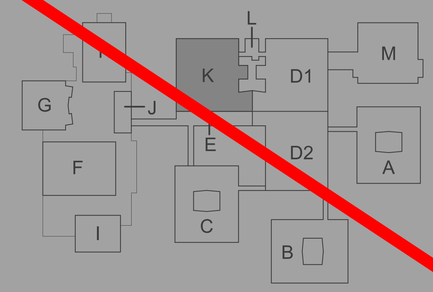
OMIT ALL WORK ON THIS SHEET

LEVEL 1 ELECTRICAL DEMOLITION PLAN - UNIT K
3/32" = 1'-0"

ELECTRICAL DEMOLITION KEYED NOTES

1. PROVIDE TEMPORARY SUPPORT FOR EXISTING LIGHT FIXTURES WITH THE SPACE. REUSE EXISTING LIGHT FIXTURES IN SAME LOCATION WITHIN SPACE. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION.
2. REMOVE THE ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT AND ALL ASSOCIATED WIRE AND CONDUIT BACK TO NEAREST JUNCTION BOX. RETAIN CIRCUIT FOR REUSE.
3. REMOVE THE ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT AND ALL ASSOCIATED WIRE AND CONDUIT BACK TO SOURCE.
4. REMOVE THE ELECTRICAL CONNECTION TO ACCU AND ALL WIRE BACK TO SOURCE. RETAIN CONDUIT FOR NEW CIRCUIT. REPLACE BREAKERS IN PANELS LPB2 AND LPC3 AS SHOWN IN NEW PANEL SCHEDULE.
5. REMOVE CONNECTION TO BI-POLAR IONIZATION. RECONNECT IN NEW EQUIPMENT.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 ELECTRICAL DEMOLITION PLAN - UNIT K

DATE
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SHEET NUMBER
ED 101K

21-807.00

LEVEL 1 ELECTRICAL DEMOLITION PLAN - UNIT M
3/32" = 1'-0"

OMIT ALL WORK ON THIS SHEET

ELECTRICAL DEMOLITION KEYED NOTES

1 PROVIDE TEMPORARY SUPPORT FOR EXISTING LIGHT FIXTURES WITH THE SPACE. REUSE EXISTING LIGHT FIXTURES IN SAME LOCATION WITHIN SPACE. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION.

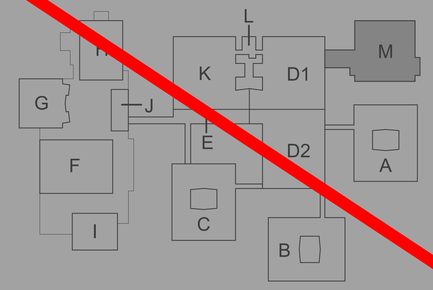
2 REMOVE THE ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT AND ALL ASSOCIATED WIRE AND CONDUIT BACK TO NEAREST JUNCTION BOX. RETAIN CIRCUIT FOR REUSE.

3 REMOVE THE ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT AND ALL ASSOCIATED WIRE AND CONDUIT BACK TO SOURCE.

4 REMOVE THE ELECTRICAL CONNECTION TO ACCU AND ALL WIRE BACK TO SOURCE. RETAIN CONDUIT FOR NEW CIRCUIT. REPLACE BREAKERS IN PANELS LPB2 AND LPC3 AS SHOWN IN NEW PANEL SCHEDULE.

5 REMOVE CONNECTION TO BI-POLAR IONIZATION. RECONNECT IN NEW EQUIPMENT.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 ELECTRICAL DEMOLITION PLAN - UNIT M

DATE
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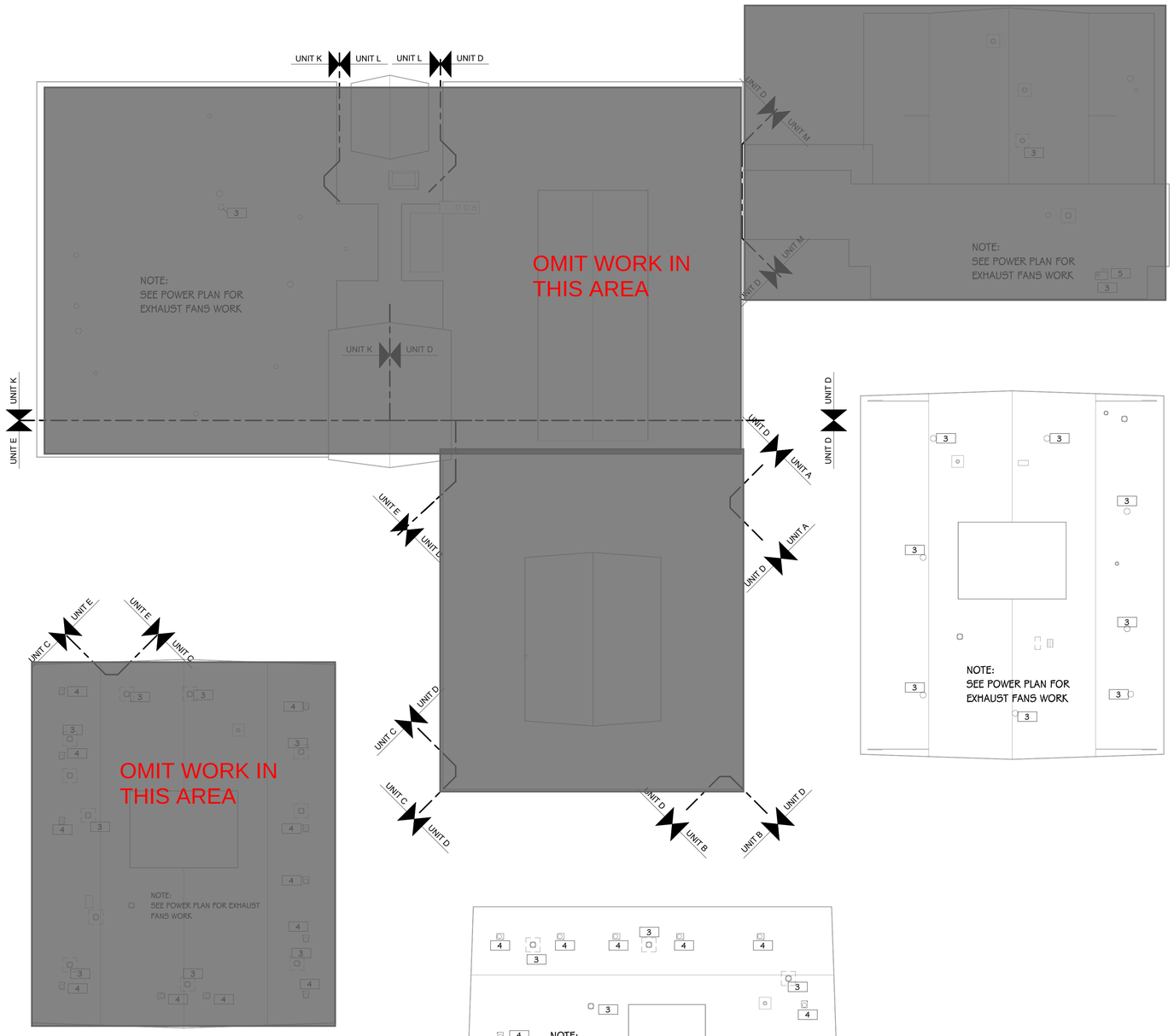
SHEET NUMBER
ED 101M

21-807.00



ELECTRICAL ROOF DEMOLITION PLAN
1" = 30'-0"

ELECTRICAL DEMOLITION KEYED NOTES

1 PROVIDE TEMPORARY SUPPORT FOR EXISTING LIGHT FIXTURES WITH THE SPACE. REUSE EXISTING LIGHT FIXTURES IN SAME LOCATION WITHIN SPACE. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION.

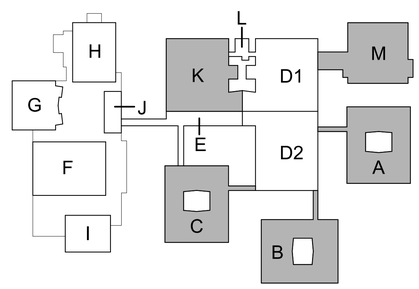
2 REMOVE THE ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT AND ALL ASSOCIATED WIRE AND CONDUIT BACK TO NEAREST JUNCTION BOX. RETAIN CIRCUIT FOR REUSE.

3 REMOVE THE ELECTRICAL CONNECTION TO MECHANICAL EQUIPMENT AND ALL ASSOCIATED WIRE AND CONDUIT BACK TO SOURCE.

4 REMOVE THE ELECTRICAL CONNECTION TO ACCU AND ALL WIRE BACK TO SOURCE. RETAIN CONDUIT FOR NEW CIRCUIT. REPLACE BREAKERS IN PANELS LPB2 AND LPC3 AS SHOWN IN NEW PANEL SCHEDULE.

5 REMOVE CONNECTION TO BI-POLAR IONIZATION. RECONNECT IN NEW EQUIPMENT.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Kalamazoo, Michigan

SHEET TITLE
ELECTRICAL ROOF DEMOLITION PLAN

DATE
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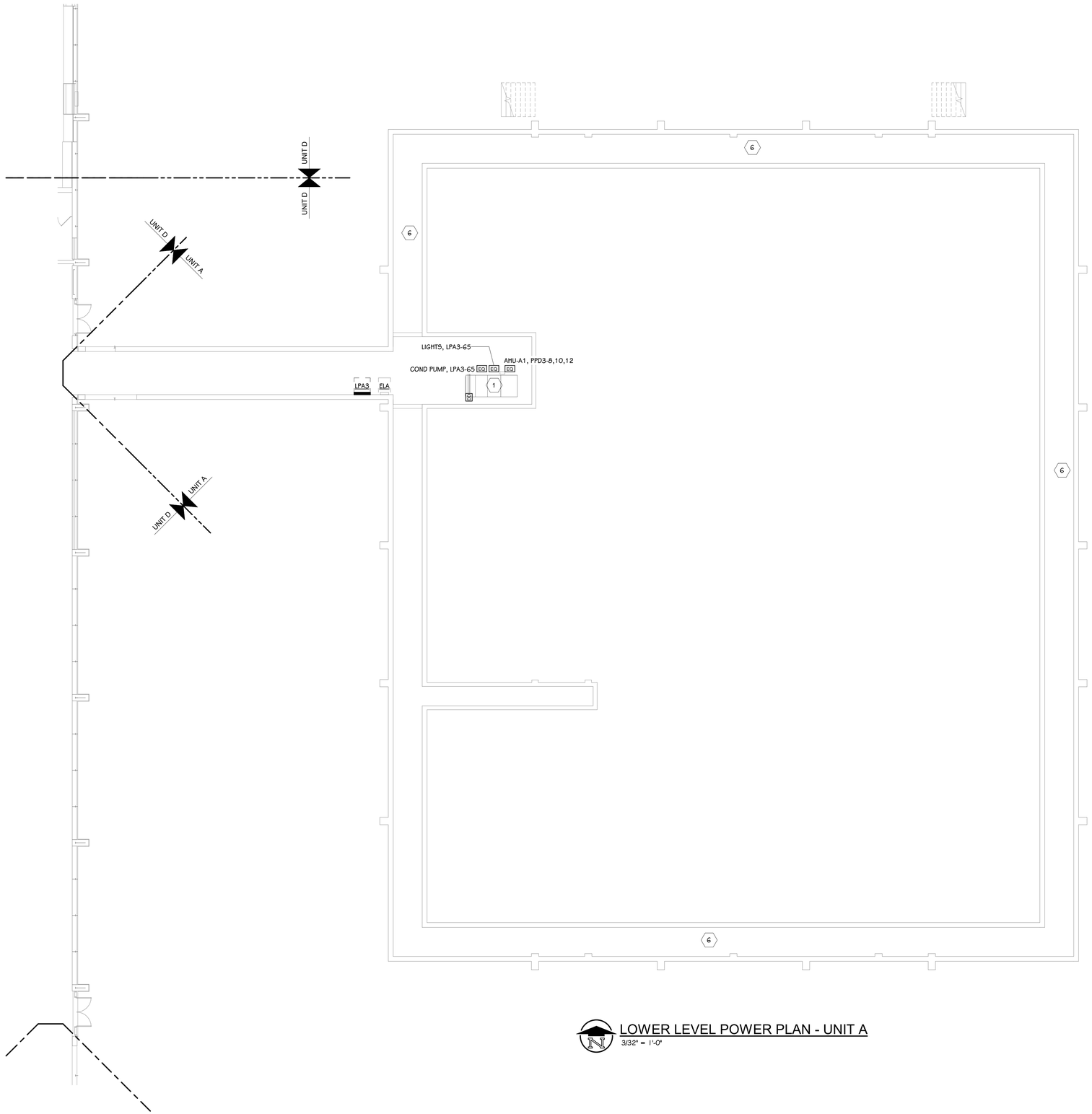
SHEET NUMBER
ED 150
21-807.00



LOWER LEVEL POWER PLAN - UNIT A
3/32" = 1'-0"

ELECTRICAL KEYED NOTES

1 DISCONNECT EXISTING BI-POLAR IONIZATION AND RETAIN CIRCUIT FOR REUSE. RE-CONNECT BI-POLAR IONIZATION IN NEW MECHANICAL EQUIPMENT.

2 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING CABINET OR UNIT HEATER, RETAIN CIRCUIT FOR REUSE. CONNECT NEW CABINET OR UNIT HEATER TO EXISTING CIRCUIT, EXTEND WIRING AND CONDUIT AS REQUIRED.

3 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN, REMOVE WIRE FROM EXISTING FAN TO BREAKER. RETAIN EXISTING BREAKER AND CONDUIT FOR REUSE. PROVIDE $25,000 ALLOWANCE FOR REPLACING WIRING TO NEW 120 VOLT EXHAUST FANS. PROVIDE #10 WIRE FOR CIRCUITS OVER 100'. EXISTING CODE COMPLIANT WIRING MAY BE REUSED.

4 REWORK EXISTING WIREMOLD CIRCUIT TO ACCOMMODATE FOR NEW VERTICAL UNIT VENT.

5 ALL EXISTING ROOF TOP ACCU CONDUIT FOR THE CLASSROOM ARE IN THE TUNNEL. REUSE EXISTING PATH OF CONDUIT FROM PANEL LPA3 AND LPC3 THROUGH TUNNEL, UP THE WALL WITH THE REFRIGERANT PIPING AND TO THE ROOF. CONCEAL CONDUIT THROUGH CLASSROOM IN ACCU REFRIGERANT PIPING COVER.

6 ROUTE ALL NEW CONDUIT FROM PANEL LPA3 TO ROOF TOP ACCU THROUGH TUNNEL, UP THE WALL WITH THE REFRIGERANT PIPING AND TO THE ROOF. CONCEAL CONDUIT THROUGH CLASSROOM IN ACCU REFRIGERANT PIPING COVER.

7 CONNECT NEW TERMINAL UNIT TRANSFORMER TO EXISTING LOCAL TERMINAL UNIT POWER CIRCUIT MADE AVAILABLE THOUGH DEMOLITION CONNECT MAXIMUM OF 8 TERNINAL UNITS ON A CIRCUIT. COORDINATE WITH TEMPERATURE CONTROLS.

8 REMOVE SPARE BREAKER AND PROVIDE NEW 20A/2P BREAKER IN EXISTING SQUARE D NQ PANEL PPD1 FOR CR-D1.

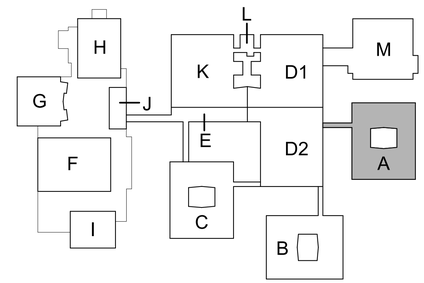
9 PROVIDE EATON RETROFIT KIT: KPRL4KD34009XX AND BLANK 11X COVER IN EXISTING EATON PANEL PPDPA. PROVIDE NEW 400 AMP BREAKER TO FEED NEW PANEL PPD3.

10 CONNECT SMOKE DAMPER TO EXISTING LOCAL RECEPTACLE CIRCUIT.

11 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. PROVIDE NEW 20/2 POLE BREAKER IN NEXT AVAILABLE SPARE SPOT IN PANEL SHOWN.

12 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. CONNECT TO NEW CIRCUIT SHOWN.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Kalamazoo, Michigan

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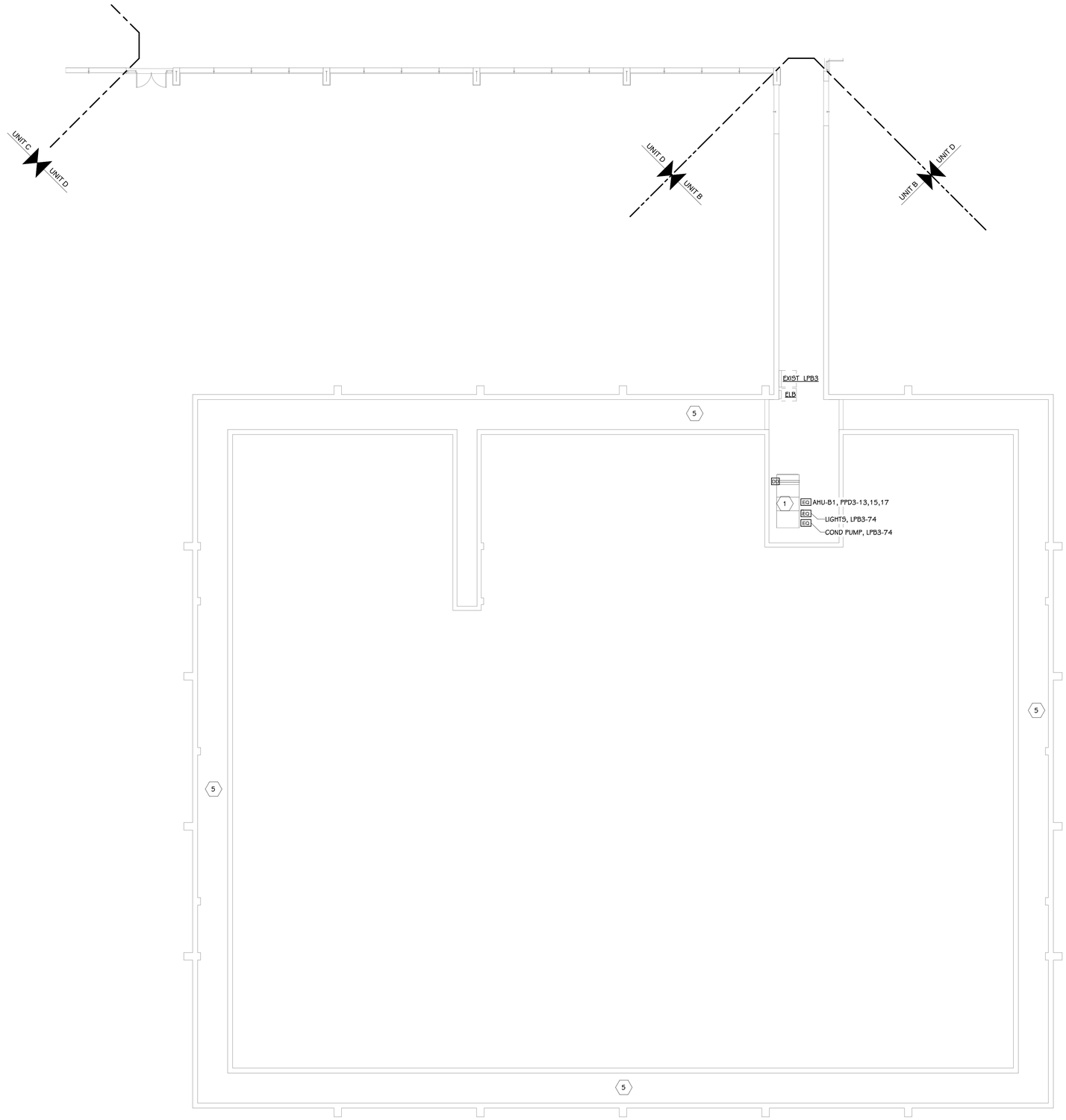


LOWER LEVEL POWER PLAN - UNIT B
3/32" = 1'-0"

ELECTRICAL KEYED NOTES

1 DISCONNECT EXISTING BI-POLAR IONIZATION AND RETAIN CIRCUIT FOR REUSE. RE-CONNECT BI-POLAR IONIZATION IN NEW MECHANICAL EQUIPMENT.

2 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING CABINET OR UNIT HEATER, RETAIN CIRCUIT FOR REUSE. CONNECT NEW CABINET OR UNIT HEATER TO EXISTING CIRCUIT, EXTEND WIRING AND CONDUIT AS REQUIRED.

3 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN, REMOVE WIRE FROM EXISTING FAN TO BREAKER. RETAIN EXISTING BREAKER AND CONDUIT FOR REUSE. PROVIDE $25,000 ALLOWANCE FOR REPLACING WIRING TO NEW 120 VOLT EXHAUST FANS. PROVIDE #10 WIRE FOR CIRCUITS OVER 100'. EXISTING CODE COMPLIANT WIRING MAY BE REUSED.

4 REWORK EXISTING WIREMOLD CIRCUIT TO ACCOMMODATE FOR NEW VERTICAL UNIT VENT.

5 ALL EXISTING ROOF TOP ACCU CONDUIT FOR THE CLASSROOM ARE IN THE TUNNEL. REUSE EXISTING PATH OF CONDUIT FROM PANEL LPA3 AND LPC3 THROUGH TUNNEL, UP THE WALL WITH THE REFRIGERANT PIPING AND TO THE ROOF. CONCEAL CONDUIT THROUGH CLASSROOM IN ACCU REFRIGERANT PIPING COVER.

6 ROUTE ALL NEW CONDUIT FROM PANEL LPA3 TO ROOF TOP ACCU THROUGH TUNNEL, UP THE WALL WITH THE REFRIGERANT PIPING AND TO THE ROOF. CONCEAL CONDUIT THROUGH CLASSROOM IN ACCU REFRIGERANT PIPING COVER.

7 CONNECT NEW TERMINAL UNIT TRANSFORMER TO EXISTING LOCAL TERMINAL UNIT POWER CIRCUIT MADE AVAILABLE THOUGH DEMOLITION CONNECT MAXIMUM OF 8 TERNINAL UNITS ON A CIRCUIT. COORDINATE WITH TEMPERATURE CONTROLS.

8 REMOVE SPARE BREAKER AND PROVIDE NEW 20A/2P BREAKER IN EXISTING SQUARE D NQ PANEL PPD1 FOR CR-D1.

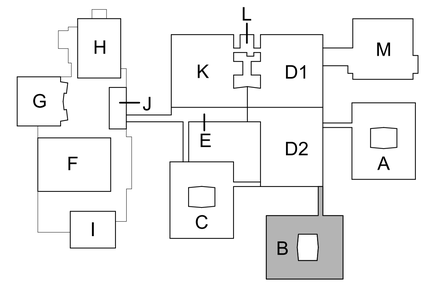
9 PROVIDE EATON RETROFIT KIT: KPRL4KD34005XX AND BLANK 11X COVER IN EXISTING EATON PANEL PPDPA. PROVIDE NEW 400 AMP BREAKER TO FEED NEW PANEL PPD3.

10 CONNECT SMOKE DAMPER TO EXISTING LOCAL RECEPTACLE CIRCUIT.

11 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. PROVIDE NEW 20/2 POLE BREAKER IN NEXT AVAILABLE SPARE SPOT IN PANEL SHOWN.

12 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. CONNECT TO NEW CIRCUIT SHOWN.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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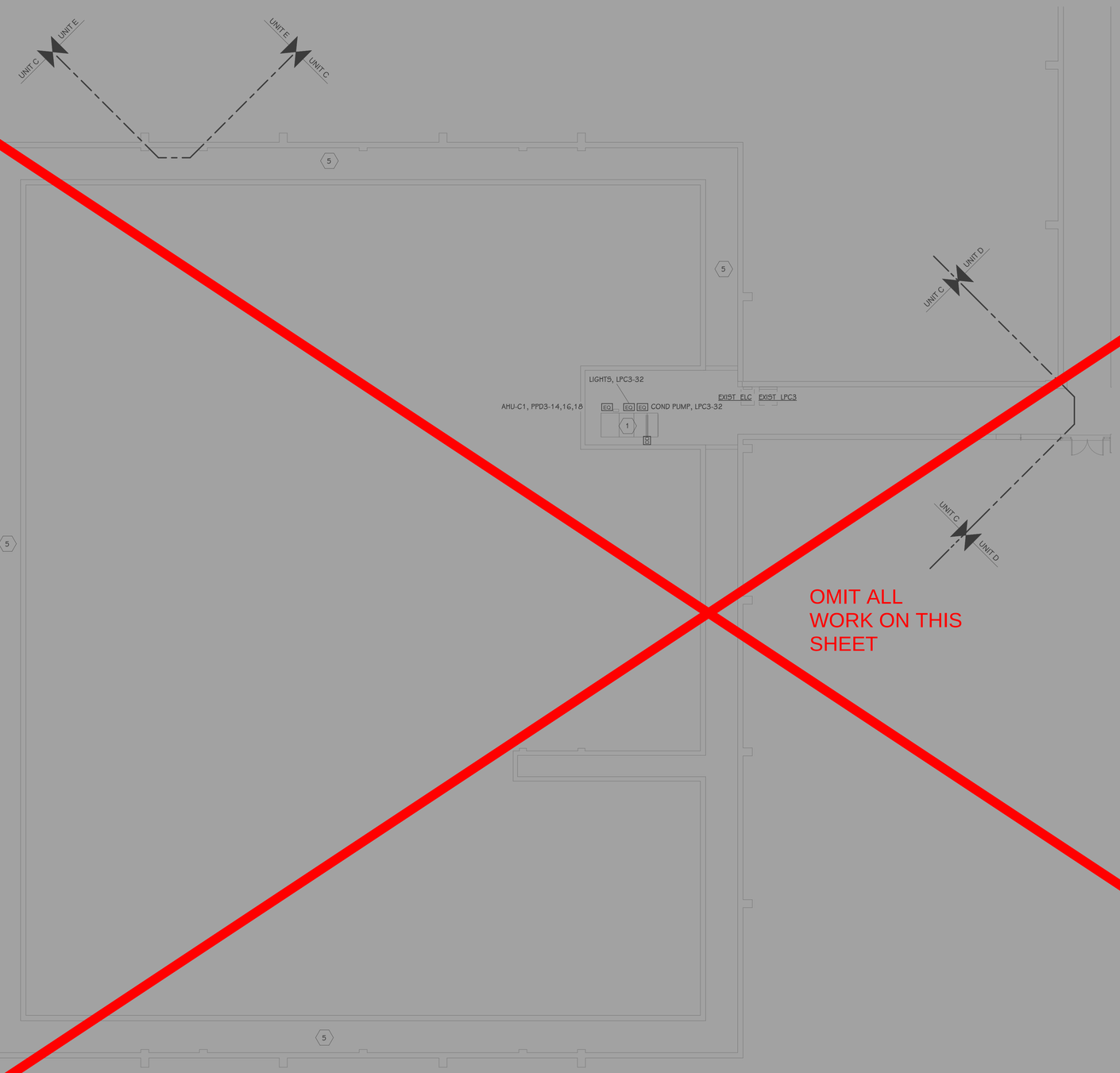


OMIT ALL
WORK ON THIS
SHEET

LOWER LEVEL POWER PLAN - UNIT C
3/32" = 1'-0"

ELECTRICAL KEYED NOTES

1 DISCONNECT EXISTING BI-POLAR IONIZATION AND RETAIN CIRCUIT FOR REUSE. RE-CONNECT BI-POLAR IONIZATION IN NEW MECHANICAL EQUIPMENT.

2 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING CABINET OR UNIT HEATER, RETAIN CIRCUIT FOR REUSE. CONNECT NEW CABINET OR UNIT HEATER TO EXISTING CIRCUIT, EXTEND WIRING AND CONDUIT AS REQUIRED.

3 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN, REMOVE WIRE FROM EXISTING FAN TO BREAKER. RETAIN EXISTING BREAKER AND CONDUIT FOR REUSE. PROVIDE $25,000 ALLOWANCE FOR REPLACING WIRING TO NEW 120 VOLT EXHAUST FANS. PROVIDE #10 WIRE FOR CIRCUITS OVER 100'. EXISTING CODE COMPLIANT WIRING MAY BE REUSED.

4 REWORK EXISTING WIREMOLD CIRCUIT TO ACCOMMODATE NEW VERTICAL UNIT VENT.

5 ALL EXISTING ROOF TOP ACCU CONDUIT FOR THE CLASSROOM ARE IN THE TUNNEL. REUSE EXISTING PATH OF CONDUIT FROM PANEL LPA3 AND LPC3 THROUGH TUNNEL, UP THE WALL WITH THE REFRIGERANT PIPING AND TO THE ROOF. CONCEAL CONDUIT THROUGH CLASSROOM IN ACCU REFRIGERANT PIPING COVER.

6 ROUTE ALL NEW CONDUIT FROM PANEL LPA3 TO ROOF TOP ACCU THROUGH TUNNEL, UP THE WALL WITH THE REFRIGERANT PIPING AND TO THE ROOF. CONCEAL CONDUIT THROUGH CLASSROOM IN ACCU REFRIGERANT PIPING COVER.

7 CONNECT NEW TERMINAL UNIT TRANSFORMER TO EXISTING LOCAL TERMINAL UNIT POWER CIRCUIT WHERE AVAILABLE THOUGH DEMOLITION CONNECT MAXIMUM OF 8 TERNINAL UNITS ON A CIRCUIT. COORDINATE WITH TEMPERATURE CONTROLS.

8 REMOVE SPARE BREAKER AND PROVIDE NEW 20A/2P BREAKER IN EXISTING SQUARE D NQ PANEL PPD1 FOR CR-D1.

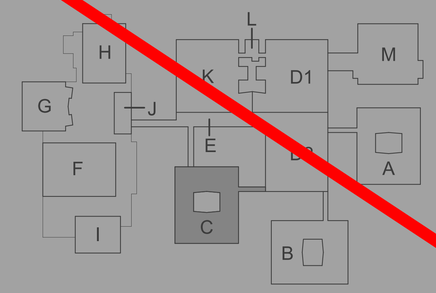
9 PROVIDE EATON RETROFIT KIT: KPRL4KD34009XX AND BLANK 11X COVER IN EXISTING EATON PANEL PPDPA. PROVIDE NEW 400 AMP BREAKER TO FEED NEW PANEL PPD3.

10 CONNECT SMOKE DAMPER TO EXISTING LOCAL RECEPTACLE CIRCUIT.

11 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. PROVIDE NEW 20/2 POLE BREAKER IN NEXT AVAILABLE SPARE SPOT IN PANEL SHOWN.

12 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. CONNECT TO NEW CIRCUIT SHOWN.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

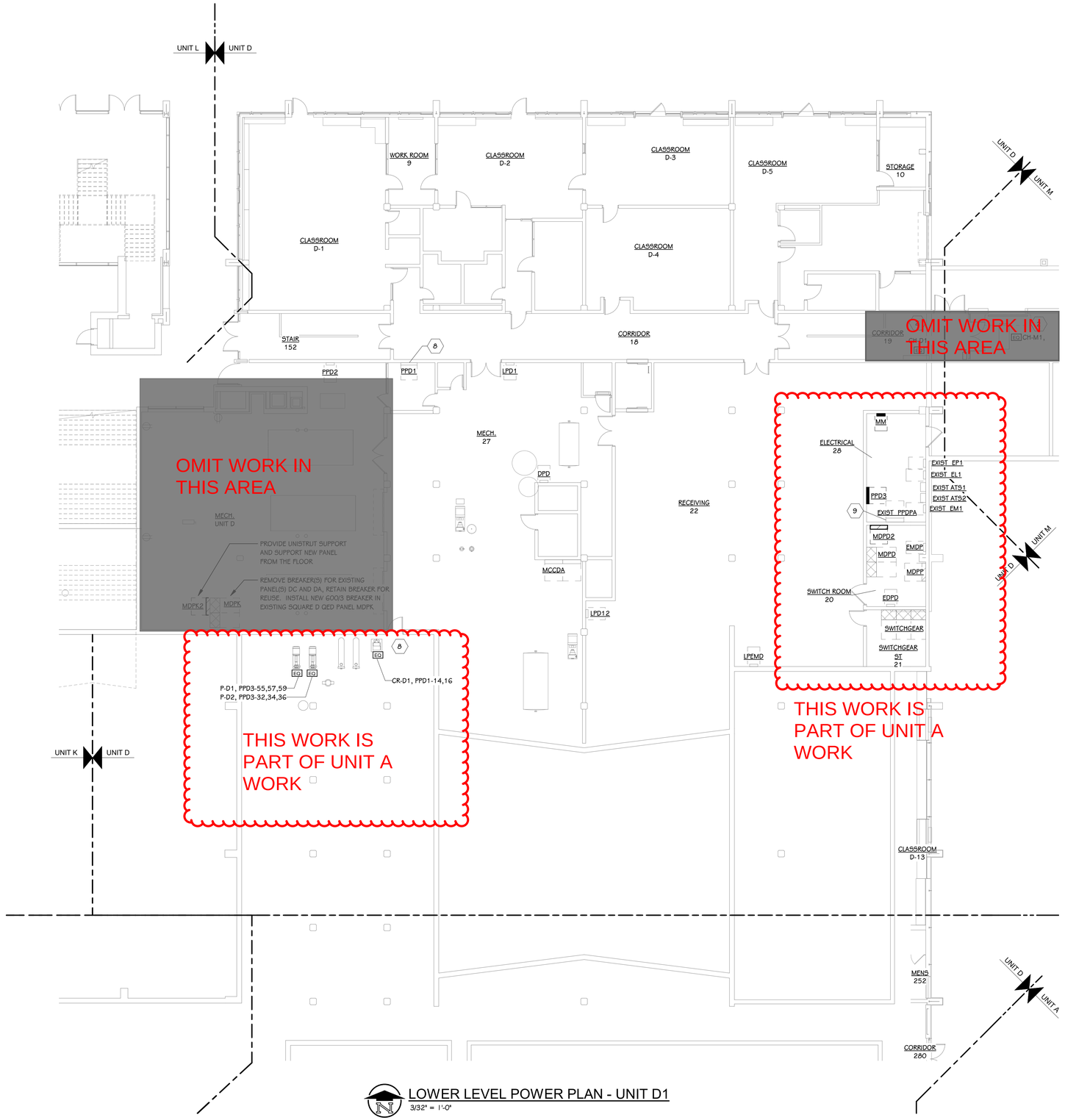
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

DATE
NOVEMBER 22, 2022

SHEET TITLE
LOWER LEVEL POWER PLAN - UNIT C

SHEET NUMBER
E100C
21-807.00



LOWER LEVEL POWER PLAN - UNIT D1

3/32" = 1'-0"

ELECTRICAL KEYED NOTES

1 DISCONNECT EXISTING BI-POLAR IONIZATION AND RETAIN CIRCUIT FOR REUSE. RE-CONNECT BI-POLAR IONIZATION IN NEW MECHANICAL EQUIPMENT.

2 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING CABINET OR UNIT HEATER, RETAIN CIRCUIT FOR REUSE. CONNECT NEW CABINET OR UNIT HEATER TO EXISTING CIRCUIT, EXTEND WIRING AND CONDUIT AS REQUIRED.

3 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN, REMOVE WIRE FROM EXISTING FAN TO BREAKER. RETAIN EXISTING BREAKER AND CONDUIT FOR REUSE. PROVIDE $25,000 ALLOWANCE FOR REPLACING WIRING TO NEW 120 VOLT EXHAUST FANS. PROVIDE #10 WIRE FOR CIRCUITS OVER 100'. EXISTING CODE COMPLIANT WIRING MAY BE REUSED.

4 REWORK EXISTING WIREMOLD CIRCUIT TO ACCOMMODATE FOR NEW VERTICAL UNIT VENT.

5 ALL EXISTING ROOF TOP ACCU CONDUIT FOR THE CLASSROOM ARE IN THE TUNNEL. REUSE EXISTING PATH OF CONDUIT FROM PANEL LPA3 AND LPC3 THROUGH TUNNEL, UP THE WALL WITH THE REFRIGERANT PIPING AND TO THE ROOF. CONCEAL CONDUIT THROUGH CLASSROOM IN ACCU REFRIGERANT PIPING COVER.

6 ROUTE ALL NEW CONDUIT FROM PANEL LPA3 TO ROOF TOP ACCU THROUGH TUNNEL, UP THE WALL WITH THE REFRIGERANT PIPING AND TO THE ROOF. CONCEAL CONDUIT THROUGH CLASSROOM IN ACCU REFRIGERANT PIPING COVER.

7 CONNECT NEW TERMINAL UNIT TRANSFORMER TO EXISTING LOCAL TERMINAL UNIT POWER CIRCUIT MADE AVAILABLE THOUGH DEMOLITION CONNECT MAXIMUM OF 8 TERNINAL UNITS ON A CIRCUIT. COORDINATE WITH TEMPERATURE CONTROLS.

8 REMOVE SPARE BREAKER AND PROVIDE NEW 20A/2P BREAKER IN EXISTING SQUARE D NQ PANEL PPD1 FOR CR-D1.

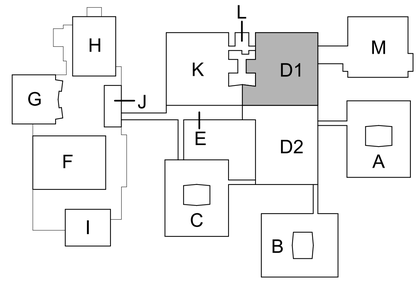
9 PROVIDE EATON RETROFIT KIT: KPRL4KD34009XX AND BLANK 11X COVER IN EXISTING EATON PANEL PPDPA. PROVIDE NEW 400 AMP BREAKER TO FEED NEW PANEL PPD3.

10 CONNECT SMOKE DAMPER TO EXISTING LOCAL RECEPTACLE CIRCUIT.

11 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. PROVIDE NEW 20/2 POLE BREAKER IN NEXT AVAILABLE SPARE SPOT IN PANEL SHOWN.

12 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. CONNECT TO NEW CIRCUIT SHOWN.

LEVEL 1 - KEY PLAN



KEY PLAN

SCALE: NO SCALE

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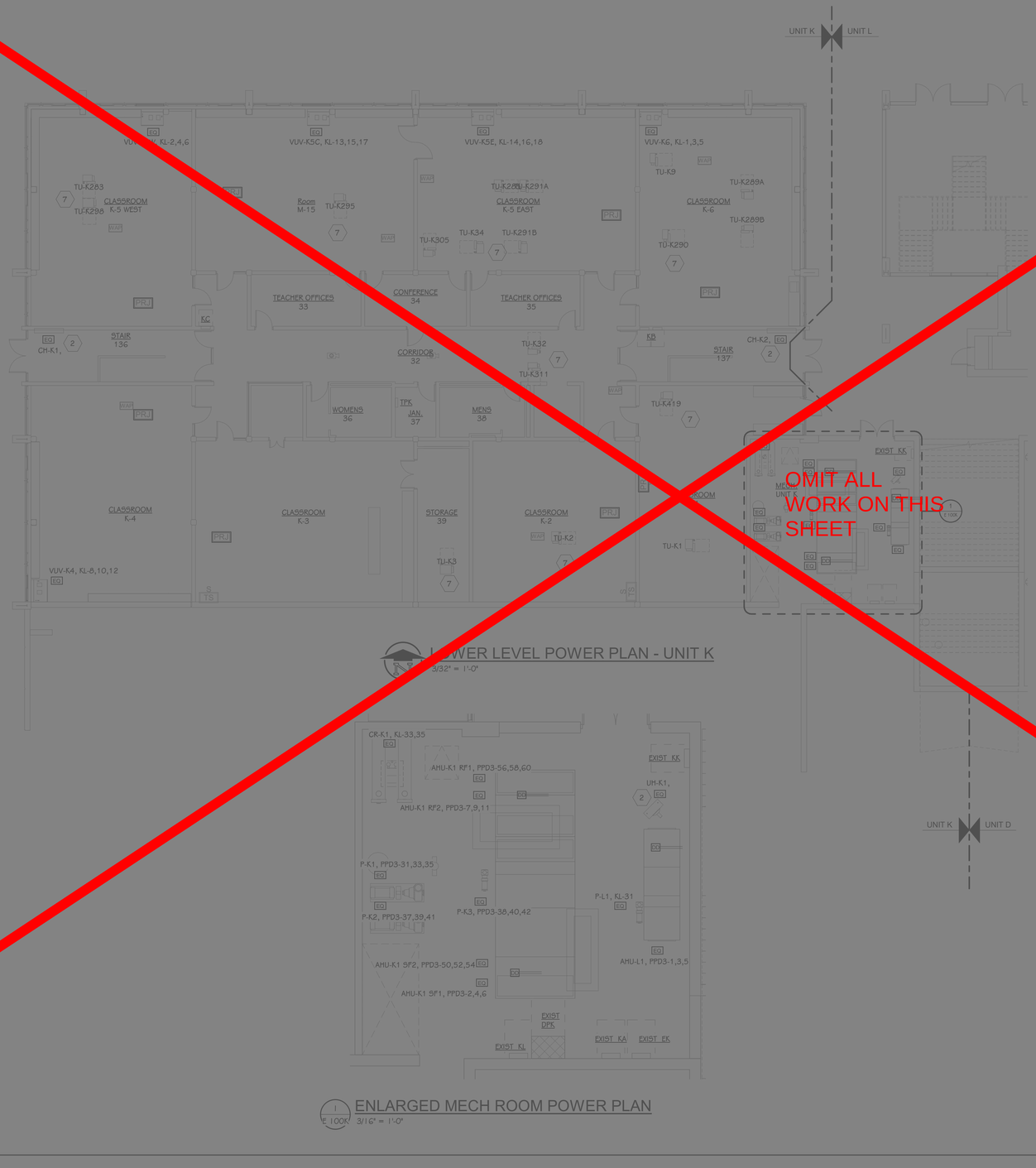
OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL POWER PLAN - UNIT D1

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E100D1
21-807.00



LOWER LEVEL POWER PLAN - UNIT K
3/32" = 1'-0"

ENLARGED MECH ROOM POWER PLAN
3/16" = 1'-0"

UNIT K UNIT D

ELECTRICAL KEYED NOTES

1 DISCONNECT EXISTING BI-POLAR IONIZATION AND RETAIN CIRCUIT FOR REUSE. RE-CONNECT BI-POLAR IONIZATION IN NEW MECHANICAL EQUIPMENT.

2 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING CABINET OR UNIT HEATER, RETAIN CIRCUIT FOR REUSE. CONNECT NEW CABINET OR UNIT HEATER TO EXISTING CIRCUIT, EXTEND WIRING AND CONDUIT AS REQUIRED.

3 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN, REMOVE WIRE FROM EXISTING FAN TO BREAKER. RETAIN EXISTING BREAKER AND CONDUIT FOR REUSE. PROVIDE $25,000 ALLOWANCE FOR REPLACING WIRING TO NEW 120 VOLT EXHAUST FANS. PROVIDE #10 WIRE FOR CIRCUITS OVER 100'. EXISTING CODE COMPLIANT WIRING MAY BE REUSED.

4 REWORK EXISTING WIREMOLD CIRCUIT TO ACCOMMODATE FOR NEW VERTICAL UNIT VENT.

5 ALL EXISTING ROOF TOP ACCU CONDUIT FOR THE CLASSROOM ARE IN THE TUNNEL. REUSE EXISTING PATH OF CONDUIT FROM PANEL LPA3 AND LPB3 THROUGH TUNNEL, UP THE WALL WITH THE REFRIGERANT PIPING AND TO THE ROOF. CONCEAL CONDUIT THROUGH CLASSROOM IN ACCU REFRIGERANT PIPING COVER.

6 ROUTE ALL NEW CONDUIT FROM PANEL LPA3 TO ROOF TOP ACCU THROUGH TUNNEL, UP THE WALL WITH THE REFRIGERANT PIPING AND TO THE ROOF. CONCEAL CONDUIT THROUGH CLASSROOM IN ACCU REFRIGERANT PIPING COVER.

7 CONNECT NEW TERMINAL UNIT TRANSFORMER TO EXISTING LOCAL TERMINAL UNIT POWER CIRCUIT MADE AVAILABLE THOUGH DEMOLITION. CONNECT MAXIMUM OF 8 TERMINAL UNITS ON A CIRCUIT. COORDINATE WITH TEMPERATURE CONTROLS.

8 REMOVE SPARE BREAKER AND PROVIDE NEW 20A/2P BREAKER IN EXISTING SQUARE D NQ PANEL PPD1 FOR CR-D1.

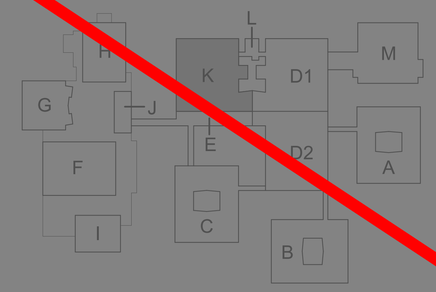
9 PROVIDE EATON RETROFIT KIT: KPRL4KD34009XX AND BLANK 11X COVER IN EXISTING EATON PANEL PPDPA. PROVIDE NEW 400 AMP BREAKER TO FEED NEW PANEL PPD3.

10 CONNECT SMOKE DAMPER TO EXISTING LOCAL RECEPTACLE CIRCUIT.

11 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. PROVIDE NEW 20/2 POLE BREAKER IN NEXT AVAILABLE SPARE SPOT IN PANEL SHOWN.

12 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. CONNECT TO NEW CIRCUIT SHOWN.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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OWNER
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Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL POWER PLAN - UNIT K

DATE
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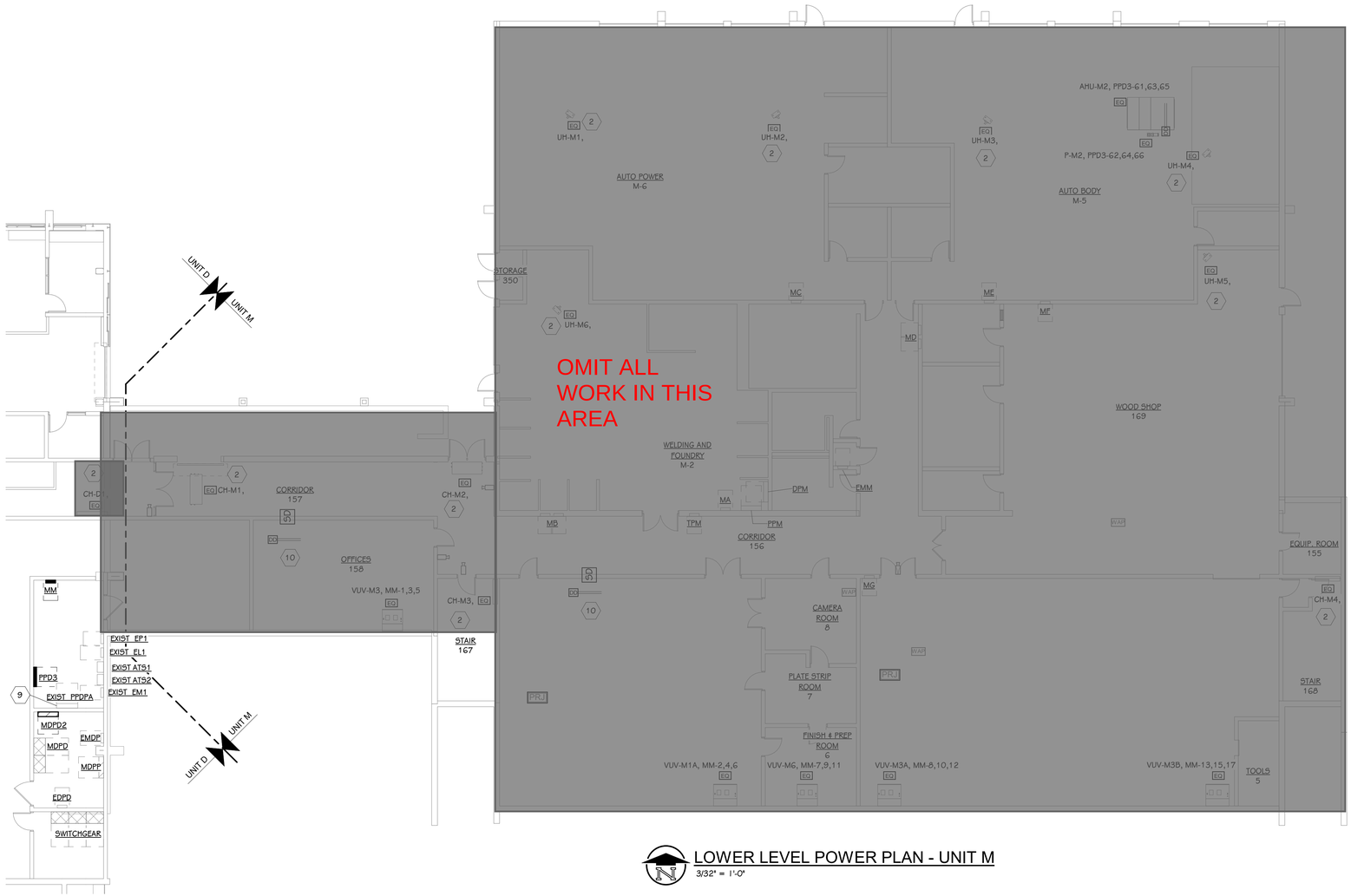

LOWER LEVEL POWER PLAN - UNIT M
3/32" = 1'-0"

ELECTRICAL KEYED NOTES

1 DISCONNECT EXISTING BI-POLAR IONIZATION AND RETAIN CIRCUIT FOR REUSE. RE-CONNECT BI-POLAR IONIZATION IN NEW MECHANICAL EQUIPMENT.

2 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING CABINET OR UNIT HEATER, RETAIN CIRCUIT FOR REUSE. CONNECT NEW CABINET OR UNIT HEATER TO EXISTING CIRCUIT, EXTEND WIRING AND CONDUIT AS REQUIRED.

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6 ROUTE ALL NEW CONDUIT FROM PANEL LPA3 TO ROOF TOP ACCU THROUGH TUNNEL, UP THE WALL WITH THE REFRIGERANT PIPING AND TO THE ROOF. CONCEAL CONDUIT THROUGH CLASSROOM IN ACCU REFRIGERANT PIPING COVER.

7 CONNECT NEW TERMINAL UNIT TRANSFORMER TO EXISTING LOCAL TERMINAL UNIT POWER CIRCUIT MADE AVAILABLE THOUGH DEMOLITION CONNECT MAXIMUM OF 8 TERNINAL UNITS ON A CIRCUIT. COORDINATE WITH TEMPERATURE CONTROLS.

8 REMOVE SPARE BREAKER AND PROVIDE NEW 20A/2P BREAKER IN EXISTING SQUARE D NQ PANEL PPD1 FOR CR-D1.

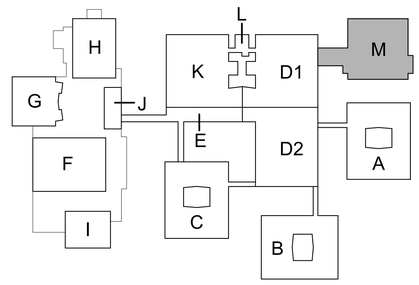
9 PROVIDE EATON RETROFIT KIT: KPRL4KD34009XX AND BLANK 11X COVER IN EXISTING EATON PANEL PPDPA. PROVIDE NEW 400 AMP BREAKER TO FEED NEW PANEL PPD3.

10 CONNECT SMOKE DAMPER TO EXISTING LOCAL RECEPTACLE CIRCUIT.

11 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. PROVIDE NEW 20/2 POLE BREAKER IN NEXT AVAILABLE SPARE SPOT IN PANEL SHOWN.

12 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. CONNECT TO NEW CIRCUIT SHOWN.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL POWER PLAN - UNIT M

DATE
NOVEMBER 22, 2022

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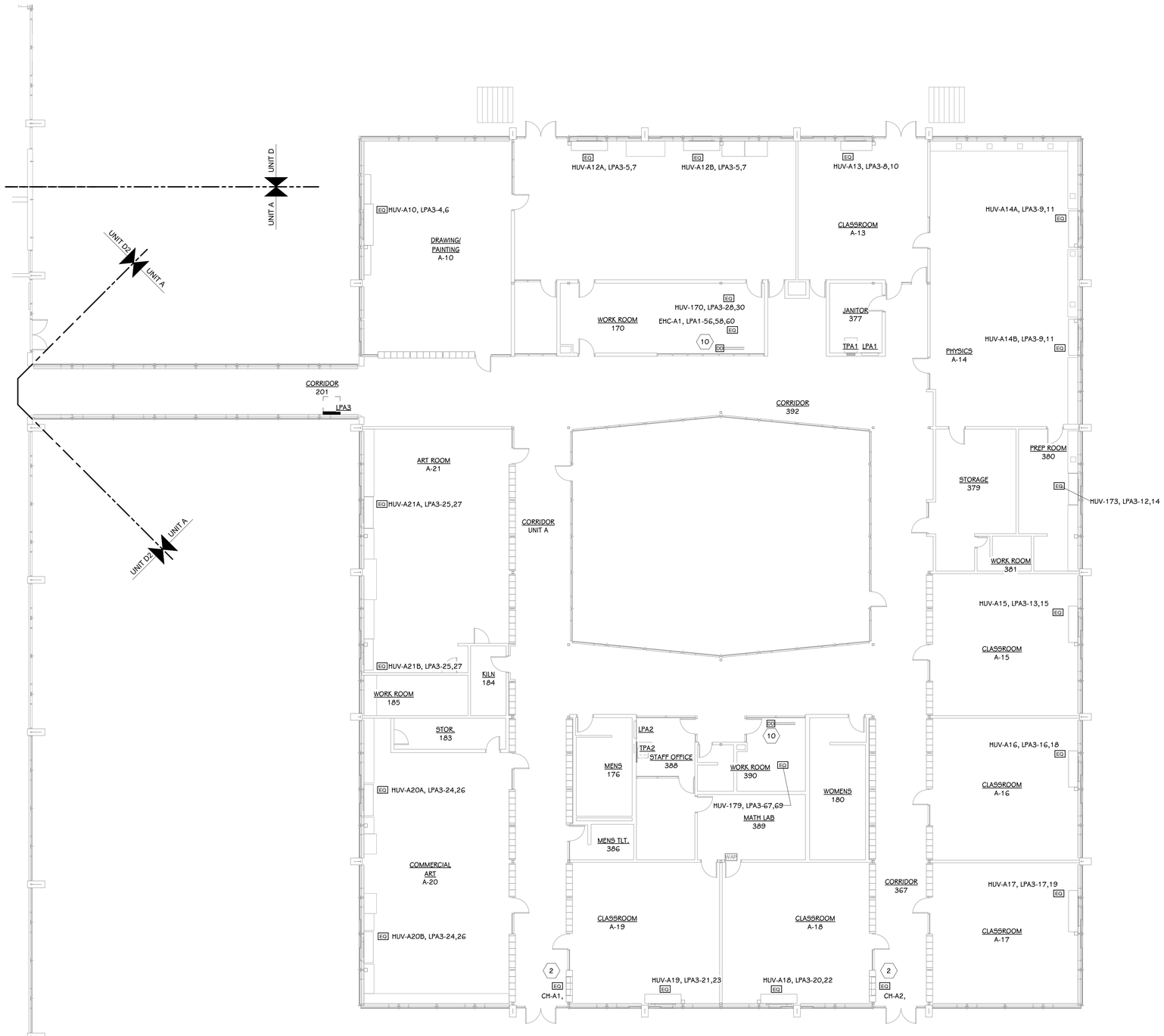

LEVEL 1 POWER PLAN - UNIT A
3/32" = 1'-0"

ELECTRICAL KEYED NOTES

1 DISCONNECT EXISTING BI-POLAR IONIZATION AND RETAIN CIRCUIT FOR REUSE. RE-CONNECT BI-POLAR IONIZATION IN NEW MECHANICAL EQUIPMENT.

2 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING CABINET OR UNIT HEATER, RETAIN CIRCUIT FOR REUSE. CONNECT NEW CABINET OR UNIT HEATER TO EXISTING CIRCUIT, EXTEND WIRING AND CONDUIT AS REQUIRED.

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8 REMOVE SPARE BREAKER AND PROVIDE NEW 20A/2P BREAKER IN EXISTING SQUARE D NQ PANEL PPD1 FOR CR-D1.

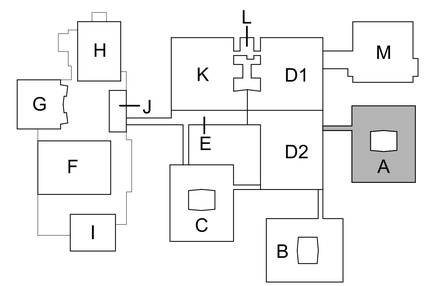
9 PROVIDE EATON RETROFIT KIT: KPRL4KD3400SXX AND BLANK 11X COVER IN EXISTING EATON PANEL PPDPA. PROVIDE NEW 400 AMP BREAKER TO FEED NEW PANEL PPD3.

10 CONNECT SMOKE DAMPER TO EXISTING LOCAL RECEPTACLE CIRCUIT.

11 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. PROVIDE NEW 20/2 POLE BREAKER IN NEXT AVAILABLE SPARE SPOT IN PANEL SHOWN.

12 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. CONNECT TO NEW CIRCUIT SHOWN.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 POWER PLAN - UNIT A

DATE
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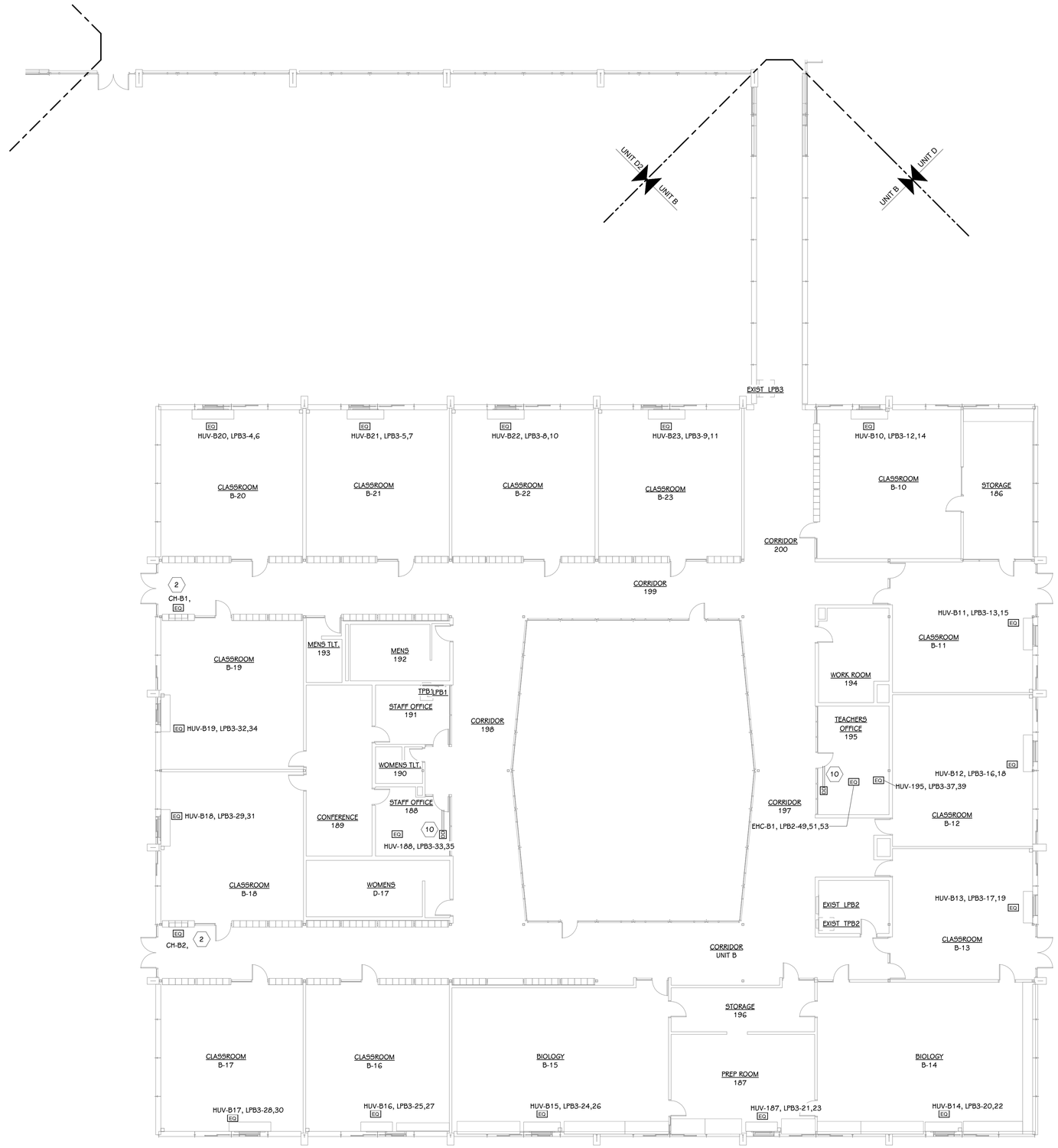
SHEET NUMBER
E101A
21-807.00



LEVEL 1 POWER PLAN - UNIT B
3/32" = 1'-0"

ELECTRICAL KEYED NOTES

1 DISCONNECT EXISTING BI-POLAR IONIZATION AND RETAIN CIRCUIT FOR REUSE. RE-CONNECT BI-POLAR IONIZATION IN NEW MECHANICAL EQUIPMENT.

2 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING CABINET OR UNIT HEATER, RETAIN CIRCUIT FOR REUSE. CONNECT NEW CABINET OR UNIT HEATER TO EXISTING CIRCUIT, EXTEND WIRING AND CONDUIT AS REQUIRED.

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7 CONNECT NEW TERMINAL UNIT TRANSFORMER TO EXISTING LOCAL TERMINAL UNIT POWER CIRCUIT MADE AVAILABLE THOUGH DEMOLITION CONNECT MAXIMUM OF 8 TERNINAL UNITS ON A CIRCUIT. COORDINATE WITH TEMPERATURE CONTROLS.

8 REMOVE SPARE BREAKER AND PROVIDE NEW 20A/2P BREAKER IN EXISTING SQUARE D NQ PANEL PPD1 FOR CR-D1.

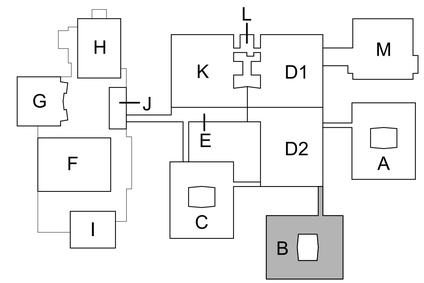
9 PROVIDE EATON RETROFIT KIT: KPRL4KD34009XX AND BLANK 11X COVER IN EXISTING EATON PANEL PPDPA. PROVIDE NEW 400 AMP BREAKER TO FEED NEW PANEL PPD3.

10 CONNECT SMOKE DAMPER TO EXISTING LOCAL RECEPTACLE CIRCUIT.

11 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. PROVIDE NEW 20/2 POLE BREAKER IN NEXT AVAILABLE SPARE SPOT IN PANEL SHOWN.

12 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. CONNECT TO NEW CIRCUIT SHOWN.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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OWNER
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Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 POWER PLAN - UNIT B

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E101B
21-807.00

OMIT ALL WORK ON THIS SHEET

LEVEL 1 POWER PLAN - UNIT C
3/32" = 1'-0"

ELECTRICAL KEYED NOTES

1 DISCONNECT EXISTING BI-POLAR IONIZATION AND RETAIN CIRCUIT FOR REUSE. RE-CONNECT BI-POLAR IONIZATION IN NEW MECHANICAL EQUIPMENT.

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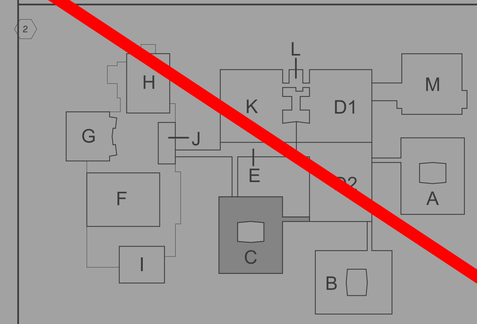
12 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. CONNECT TO NEW CIRCUIT SHOWN.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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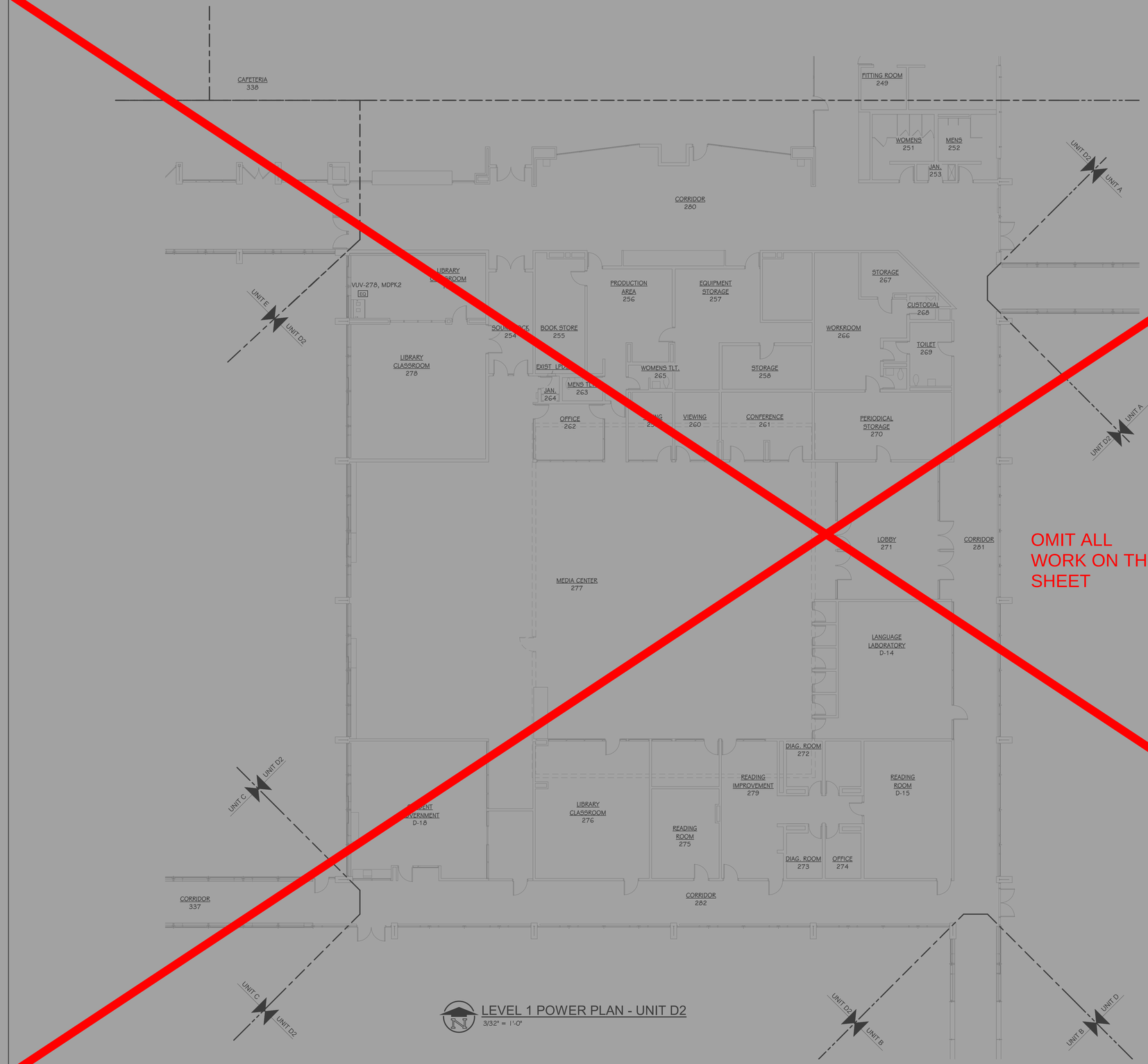


OMIT ALL WORK ON THIS SHEET

LEVEL 1 POWER PLAN - UNIT D2
3/32" = 1'-0"

ELECTRICAL KEYED NOTES

1 DISCONNECT EXISTING BI-POLAR IONIZATION AND RETAIN CIRCUIT FOR REUSE. RE-CONNECT BI-POLAR IONIZATION IN NEW MECHANICAL EQUIPMENT.

2 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING CABINET OR UNIT HEATER, RETAIN CIRCUIT FOR REUSE. CONNECT NEW CABINET OR UNIT HEATER TO EXISTING CIRCUIT, EXTEND WIRING AND CONDUIT AS REQUIRED.

3 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN, REMOVE WIRE FROM EXISTING FAN TO BREAKER. RETAIN EXISTING BREAKER AND CONDUIT FOR REUSE. PROVIDE $25,000 ALLOWANCE FOR REPLACING WIRING TO NEW 120 VOLT EXHAUST FANS. PROVIDE #10 WIRE FOR CIRCUITS OVER 100'. EXISTING CODE COMPLIANT WIRING MAY BE REUSED.

4 REWORK EXISTING WIREMOLD CIRCUIT TO ACCOMMODATE NEW VERTICAL UNIT VENT.

5 ALL EXISTING ROOF TOP ACCU CONDUIT FOR THE CLASSROOM ARE IN THE TUNNEL. REUSE EXISTING PATH OF CONDUIT FROM PANEL LPA3 AND LPC3 THROUGH TUNNEL, UP THE WALL WITH THE REFRIGERANT PIPING AND TO THE ROOF. CONCEAL CONDUIT THROUGH CLASSROOM IN ACCU REFRIGERANT PIPING COVER.

6 ROUTE ALL NEW CONDUIT FROM PANEL LPA3 TO ROOF TOP ACCU THROUGH TUNNEL, UP THE WALL WITH THE REFRIGERANT PIPING AND TO THE ROOF. CONCEAL CONDUIT THROUGH CLASSROOM IN ACCU REFRIGERANT PIPING COVER.

7 CONNECT NEW TERMINAL UNIT TRANSFORMER TO EXISTING LOCAL TERMINAL UNIT POWER CIRCUIT NOW AVAILABLE THOUGH DEMOLITION CONNECT MAXIMUM OF 8 TERMINAL UNITS ON A CIRCUIT. COORDINATE WITH TEMPERATURE CONTROLS.

8 REMOVE SPARE BREAKER AND PROVIDE NEW 20A/2P BREAKER IN EXISTING SQUARE D NQ PANEL PPD1 FOR CR-D1.

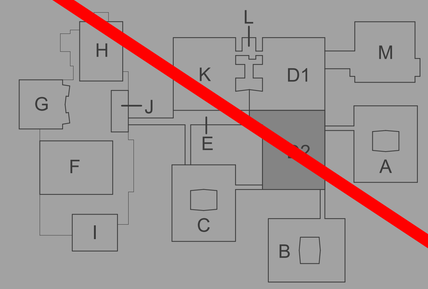
9 PROVIDE EATON RETROFIT KIT: KPRL4KD34009XX AND BLANK 11X COVER IN EXISTING EATON PANEL PPDPA. PROVIDE NEW 400 AMP BREAKER TO FEED NEW PANEL PPD3.

10 CONNECT SMOKE DAMPER TO EXISTING LOCAL RECEPTACLE CIRCUIT.

11 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. PROVIDE NEW 20/2 POLE BREAKER IN NEXT AVAILABLE SPARE SPOT IN PANEL SHOWN.

12 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. CONNECT TO NEW CIRCUIT SHOWN.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

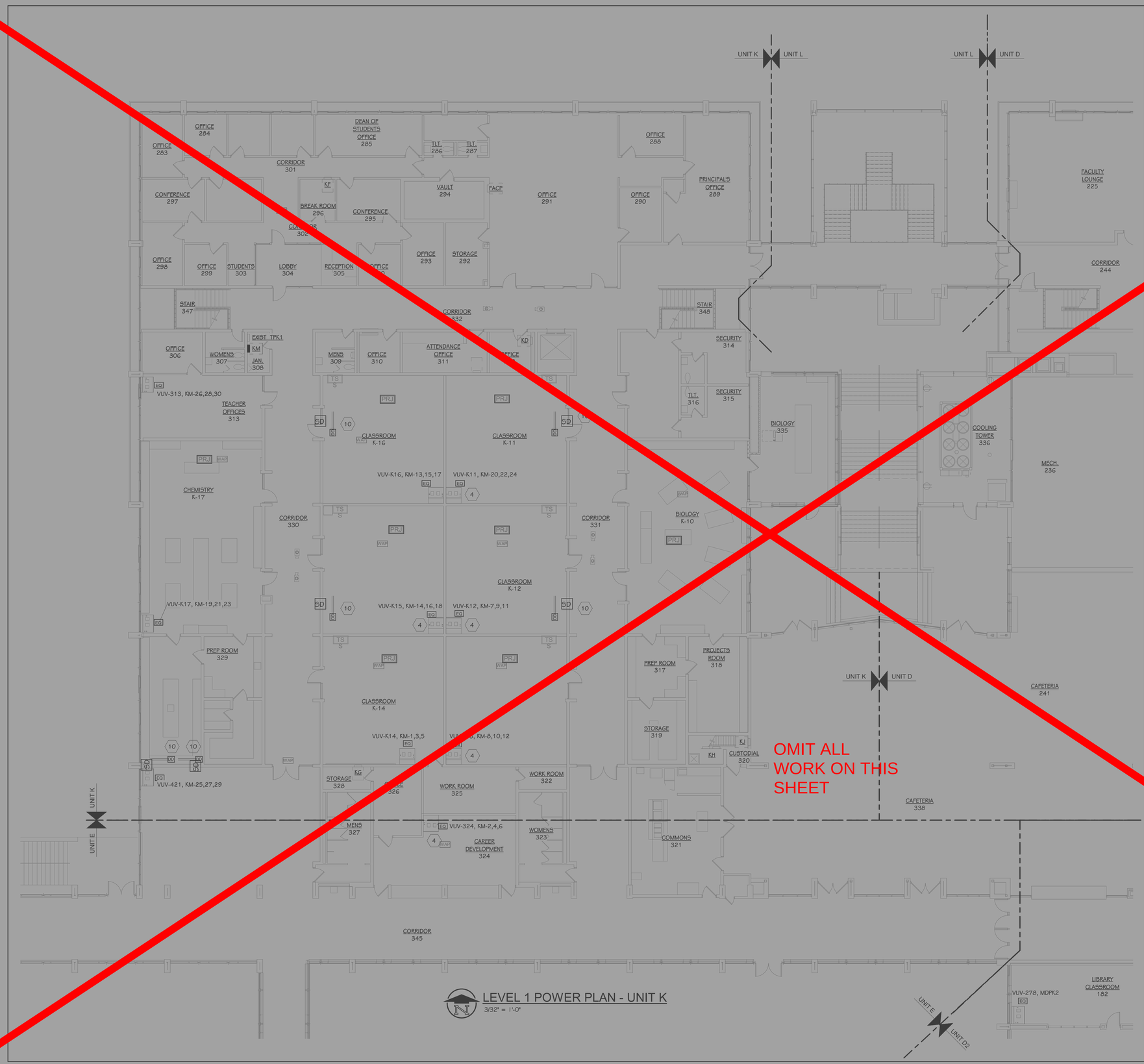
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 POWER PLAN - UNIT D2

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E101D2
21-807.00



LEVEL 1 POWER PLAN - UNIT K
3/32" = 1'-0"

ELECTRICAL KEYED NOTES

1 DISCONNECT EXISTING BI-POLAR IONIZATION AND RETAIN CIRCUIT FOR REUSE. RE-CONNECT BI-POLAR IONIZATION IN NEW MECHANICAL EQUIPMENT.

2 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING CABINET OR UNIT HEATER, RETAIN CIRCUIT FOR REUSE. CONNECT NEW CABINET OR UNIT HEATER TO EXISTING CIRCUIT, EXTEND WIRING AND CONDUIT AS REQUIRED.

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4 REWORK EXISTING WIREMOLD CIRCUIT TO ACCOMMODATE NEW VERTICAL UNIT VENT.

5 ALL EXISTING ROOF TOP ACCU CONDUIT FOR THE CLASSROOM ARE IN THE TUNNEL. REUSE EXISTING PATH OF CONDUIT FROM PANEL LPA3 AND LPC3 THROUGH TUNNEL, UP THE WALL WITH THE REFRIGERANT PIPING AND TO THE ROOF. CONCEAL CONDUIT THROUGH CLASSROOM IN ACCU REFRIGERANT PIPING COVER.

6 ROUTE ALL NEW CONDUIT FROM PANEL LPA3 TO ROOF TOP ACCU THROUGH TUNNEL, UP THE WALL WITH THE REFRIGERANT PIPING AND TO THE ROOF. CONCEAL CONDUIT THROUGH CLASSROOM IN ACCU REFRIGERANT PIPING COVER.

7 CONNECT NEW TERMINAL UNIT TRANSFORMER TO EXISTING LOCAL TERMINAL UNIT POWER CIRCUIT. CODE AVAILABLE THOUGH DEMOLITION CONNECT MAXIMUM OF 8 TERMINAL UNITS ON CIRCUIT. COORDINATE WITH TEMPERATURE CONTROLS.

8 REMOVE SPARE BREAKER AND PROVIDE NEW 20A/2P BREAKER IN EXISTING SQUARE D NQ PANEL PPD1 FOR CR-D1.

9 PROVIDE EATON RETROFIT KIT: KPRL4KD34009XX AND BLANK 11X COVER IN EXISTING EATON PANEL PPDPA. PROVIDE NEW 400 AMP BREAKER TO FEED NEW PANEL PPD3.

10 CONNECT SMOKE DAMPER TO EXISTING LOCAL RECEPTACLE CIRCUIT.

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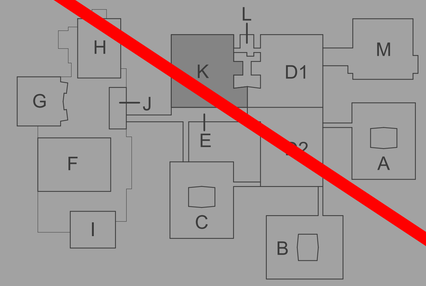
LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 POWER PLAN - UNIT K

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E101K
21-807.00

LEVEL 1 POWER PLAN - UNIT M
3/32" = 1'-0"

OMIT ALL WORK ON THIS SHEET

ELECTRICAL KEYED NOTES

1 DISCONNECT EXISTING BI-POLAR IONIZATION AND RETAIN CIRCUIT FOR REUSE. RE-CONNECT BI-POLAR IONIZATION IN NEW MECHANICAL EQUIPMENT.

2 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING CABINET OR UNIT HEATER, RETAIN CIRCUIT FOR REUSE. CONNECT NEW CABINET OR UNIT HEATER TO EXISTING CIRCUIT, EXTEND WIRING AND CONDUIT AS REQUIRED.

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7 CONNECT NEW TERMINAL UNIT TRANSFORMER TO EXISTING LOCAL TERMINAL UNIT POWER CIRCUIT MADE AVAILABLE THOUGH DEMOLITION CONNECT MAXIMUM OF 8 TERNINAL UNITS ON ONE CIRCUIT. COORDINATE WITH TEMPERATURE CONTROLS.

8 REMOVE SPARE BREAKER AND PROVIDE NEW 20A/2P BREAKER IN EXISTING SQUARE D NQ PANEL PPD1 FOR CR-D1.

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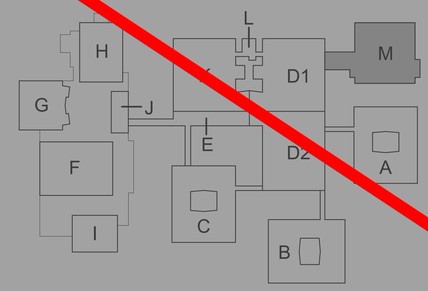
12 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. CONNECT TO NEW CIRCUIT SHOWN.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

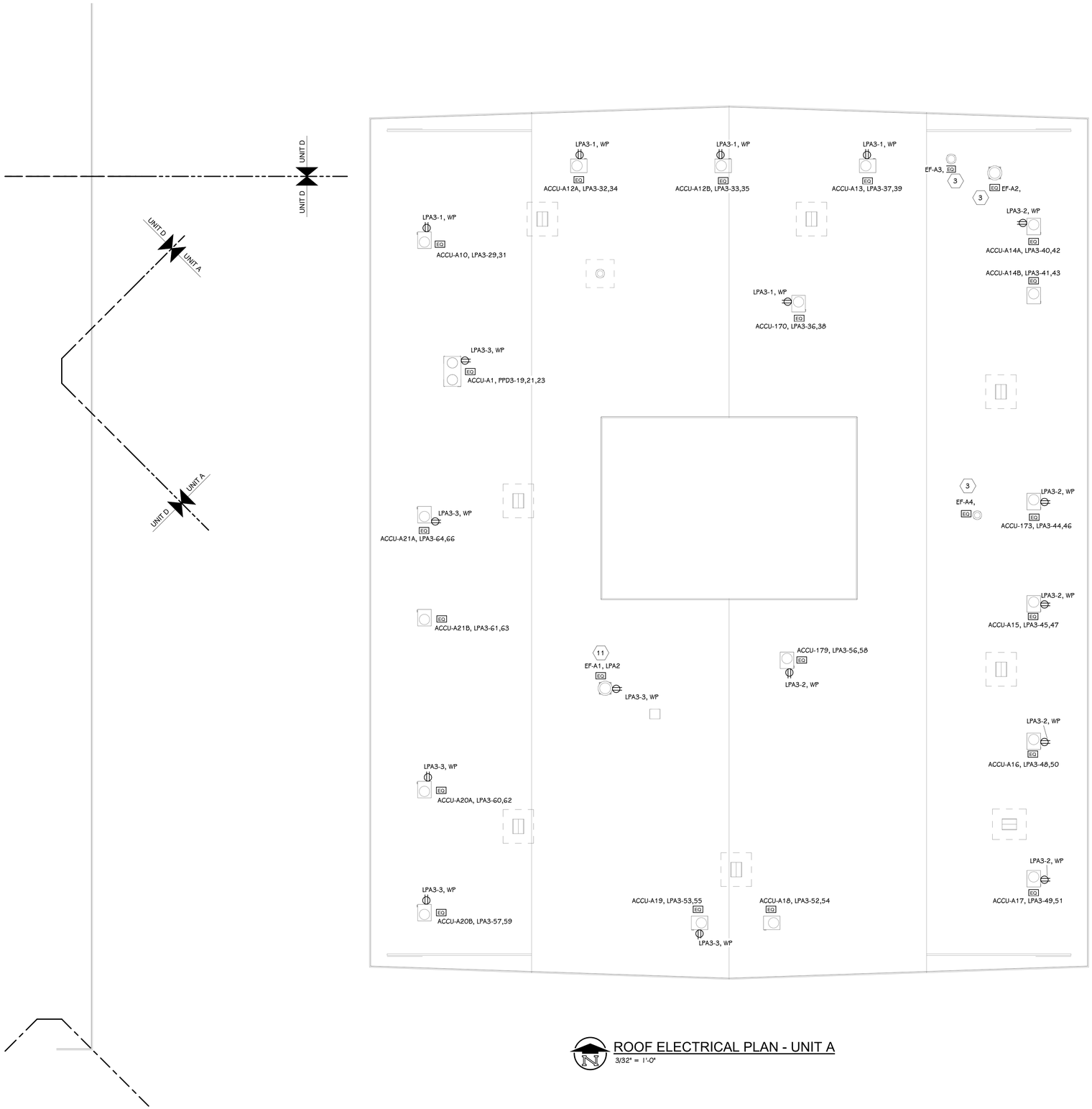
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 POWER PLAN - UNIT M

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E-101M

21-807.00



ROOF ELECTRICAL PLAN - UNIT A
3/32" = 1'-0"

ELECTRICAL KEYED NOTES

1 DISCONNECT EXISTING BI-POLAR IONIZATION AND RETAIN CIRCUIT FOR REUSE. RE-CONNECT BI-POLAR IONIZATION IN NEW MECHANICAL EQUIPMENT.

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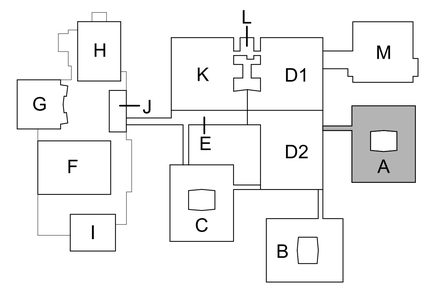
10 CONNECT SMOKE DAMPER TO EXISTING LOCAL RECEPTACLE CIRCUIT.

11 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. PROVIDE NEW 20/2 POLE BREAKER IN NEXT AVAILABLE SPARE SPOT IN PANEL SHOWN.

12 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. CONNECT TO NEW CIRCUIT SHOWN.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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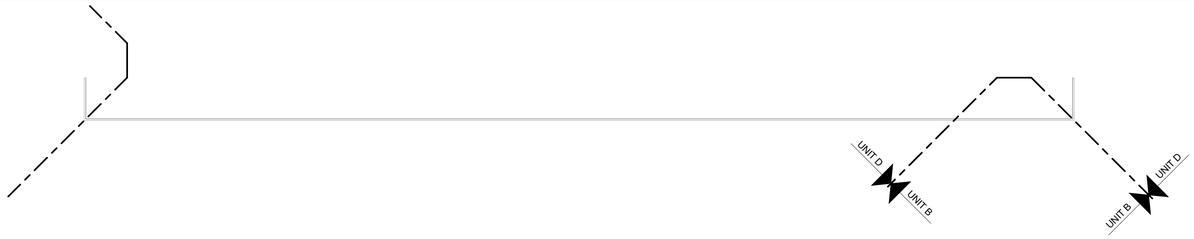
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

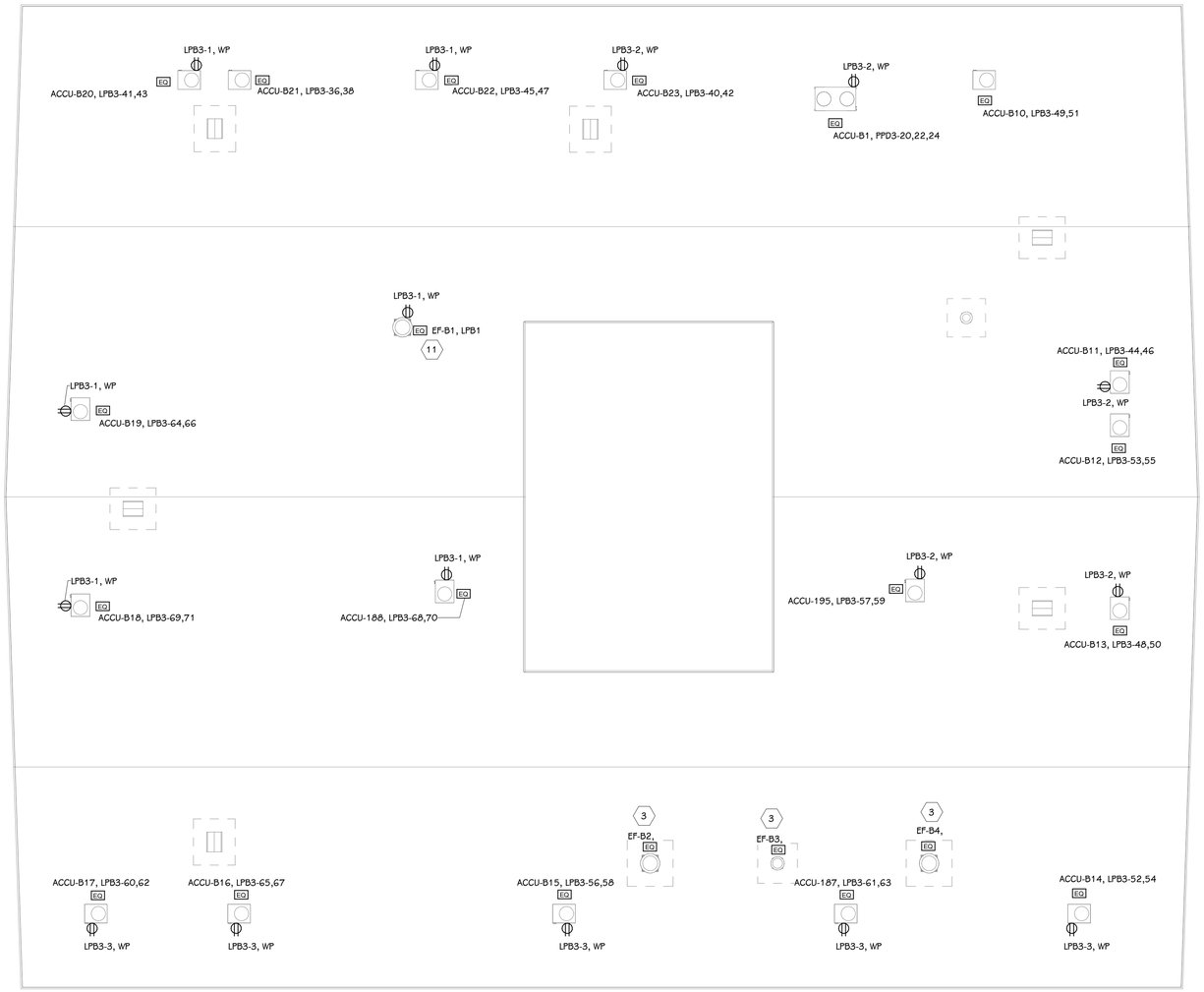
OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ELECTRICAL ROOF PLAN - UNIT A

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E150A
21-807.00





ROOF ELECTRICAL PLAN - UNIT B
3/32" = 1'-0"

ELECTRICAL KEYED NOTES

1 DISCONNECT EXISTING BI-POLAR IONIZATION AND RETAIN CIRCUIT FOR REUSE. RE-CONNECT BI-POLAR IONIZATION IN NEW MECHANICAL EQUIPMENT.

2 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING CABINET OR UNIT HEATER, RETAIN CIRCUIT FOR REUSE. CONNECT NEW CABINET OR UNIT HEATER TO EXISTING CIRCUIT, EXTEND WIRING AND CONDUIT AS REQUIRED.

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4 REWORK EXISTING WIREMOLD CIRCUIT TO ACCOMMODATE FOR NEW VERTICAL UNIT VENT.

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7 CONNECT NEW TERMINAL UNIT TRANSFORMER TO EXISTING LOCAL TERMINAL UNIT POWER CIRCUIT MADE AVAILABLE THOUGH DEMOLITION CONNECT MAXIMUM OF 8 TERNINAL UNITS ON A CIRCUIT. COORDINATE WITH TEMPERATURE CONTROLS.

8 REMOVE SPARE BREAKER AND PROVIDE NEW 20A/2P BREAKER IN EXISTING SQUARE D NQ PANEL PPD1 FOR CR-D1.

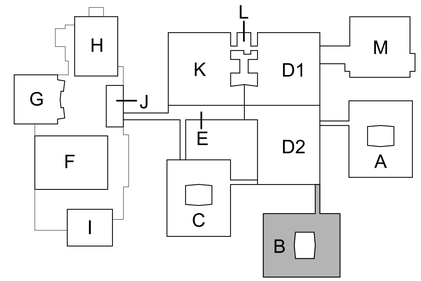
9 PROVIDE EATON RETROFIT KIT: KPRL4KD34009XX AND BLANK 11X COVER IN EXISTING EATON PANEL PPDPA. PROVIDE NEW 400 AMP BREAKER TO FEED NEW PANEL PPD3.

10 CONNECT SMOKE DAMPER TO EXISTING LOCAL RECEPTACLE CIRCUIT.

11 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. PROVIDE NEW 20/2 POLE BREAKER IN NEXT AVAILABLE SPARE SPOT IN PANEL SHOWN.

12 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. CONNECT TO NEW CIRCUIT SHOWN.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

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PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ELECTRICAL ROOF PLAN - UNIT B

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E150B
21-807.00

ROOF ELECTRICAL PLAN - UNIT C

3/32" = 1'-0"

OMIT ALL WORK ON THIS SHEET

ELECTRICAL KEYED NOTES

1 DISCONNECT EXISTING BI-POLAR IONIZATION AND RETAIN CIRCUIT FOR REUSE. RE-CONNECT BI-POLAR IONIZATION IN NEW MECHANICAL EQUIPMENT.

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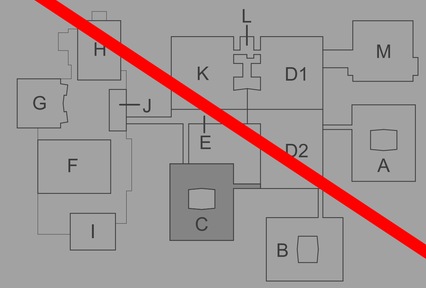
LEVEL 1 - KEY PLAN



KEY PLAN

SCALE: NO SCALE

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PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

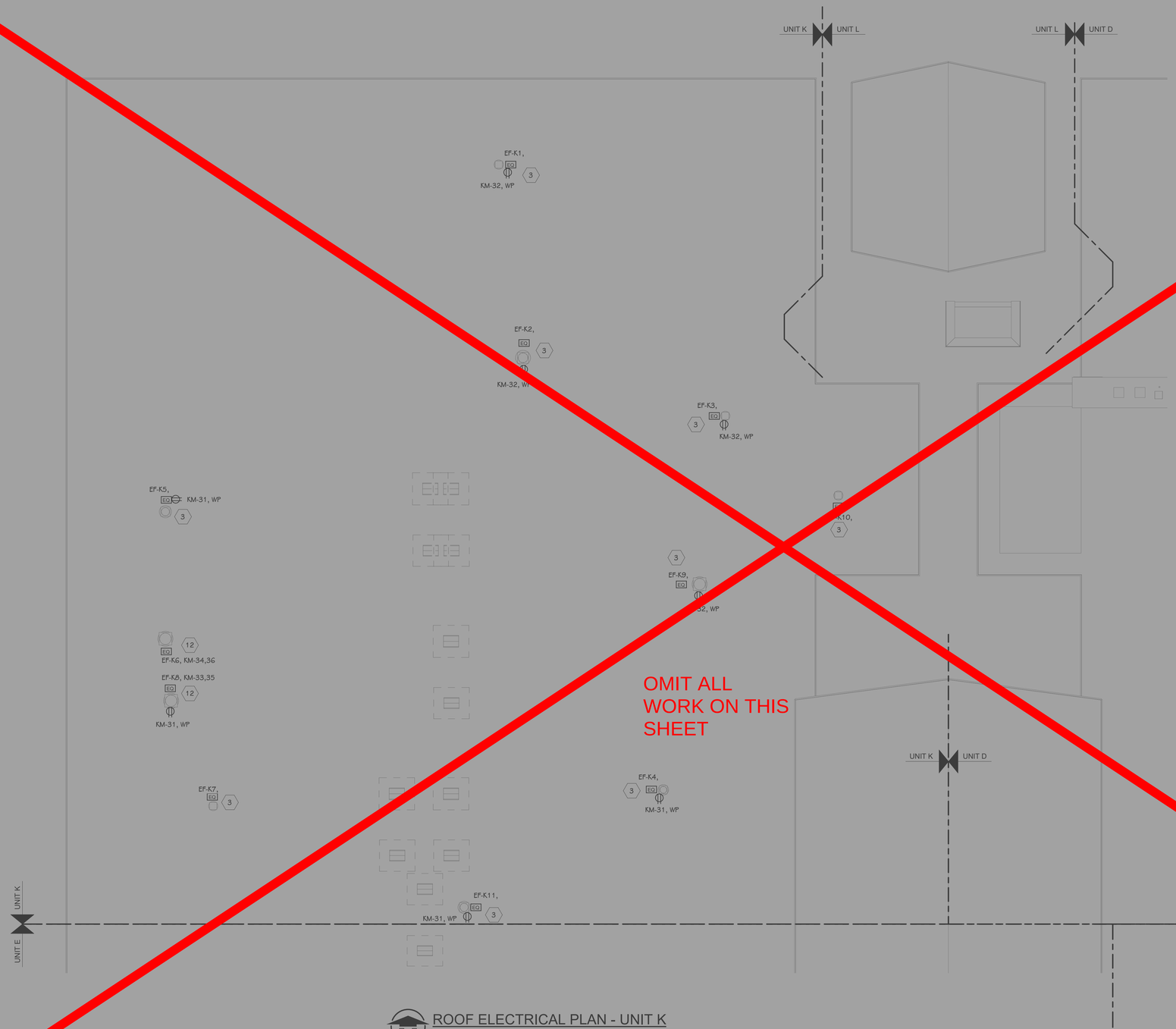
Kalamazoo, Michigan

SHEET TITLE
ELECTRICAL ROOF PLAN - UNIT C

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E150C

21-807.00



ROOF ELECTRICAL PLAN - UNIT K
3/32" = 1'-0"

ELECTRICAL KEYED NOTES

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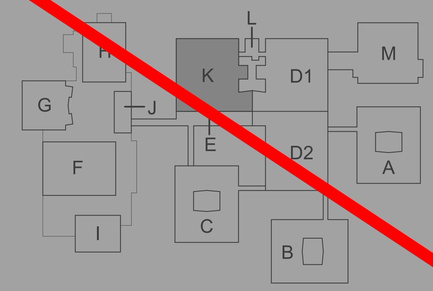
LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

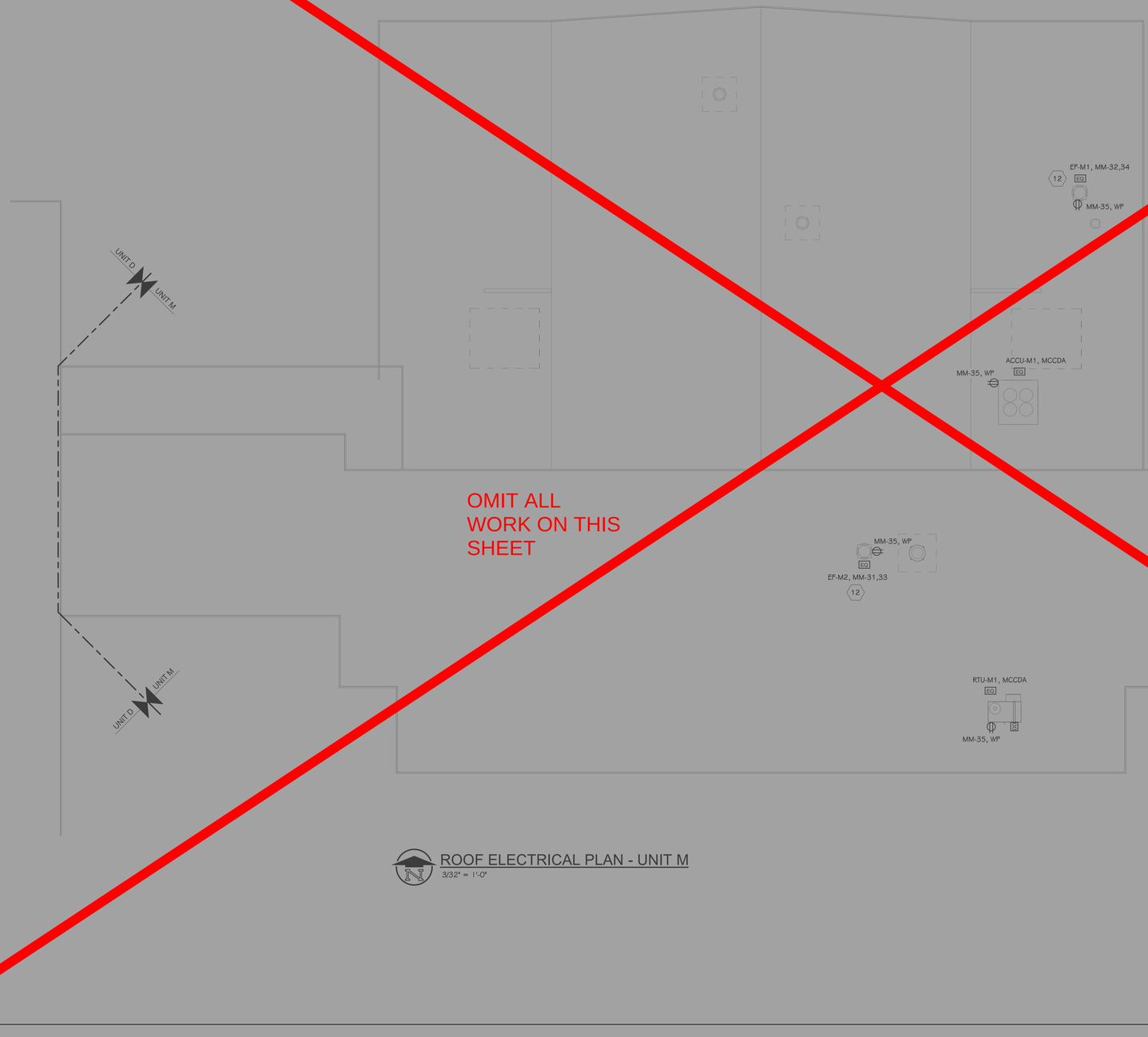
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ELECTRICAL ROOF PLAN - UNIT K

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E150K
21-807.00



OMIT ALL
WORK ON THIS
SHEET

ROOF ELECTRICAL PLAN - UNIT M
3/32" = 1'-0"

ELECTRICAL KEYED NOTES

1 DISCONNECT EXISTING BI-POLAR IONIZATION AND RETAIN CIRCUIT FOR REUSE. RE-CONNECT BI-POLAR IONIZATION IN NEW MECHANICAL EQUIPMENT.

2 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING CABINET OR UNIT HEATER, RETAIN CIRCUIT FOR REUSE. CONNECT NEW CABINET OR UNIT HEATER TO EXISTING CIRCUIT, EXTEND WIRING AND CONDUIT AS REQUIRED.

3 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN, REMOVE WIRE FROM EXISTING FAN TO BREAKER. RETAIN EXISTING BREAKER AND CONDUIT FOR REUSE. PROVIDE $25,000 ALLOWANCE FOR REPLACING WIRING TO NEW 120 VOLT EXHAUST FANS. PROVIDE #10 WIRE FOR CIRCUITS OVER 100'. EXISTING CODE COMPLIANT WIRING MAY BE REUSED.

4 REWORK EXISTING WIREMOLD CIRCUIT TO ACCOMMODATE NEW VERTICAL UNIT VENT.

5 ALL EXISTING ROOF TOP ACCU CONDUIT FOR THE CLASSROOM ARE IN THE TUNNEL. REUSE EXISTING PATH OF CONDUIT FROM PANEL LPA3 TO LPC3 THROUGH TUNNEL, UP THE WALL WITH THE REFRIGERANT PIPING AND TO THE ROOF. CONCEAL CONDUIT THROUGH CLASSROOM IN ACCU REFRIGERANT PIPING COVER.

6 ROUTE ALL NEW CONDUIT FROM PANEL LPA3 TO ROOF TOP ACCU THROUGH TUNNEL, UP THE WALL WITH THE REFRIGERANT PIPING AND TO THE ROOF. CONCEAL CONDUIT THROUGH CLASSROOM IN ACCU REFRIGERANT PIPING COVER.

7 CONNECT NEW TERMINAL UNIT TRANSFORMER TO EXISTING LOCAL TERMINAL UNIT POWER CIRCUIT MADE AVAILABLE THOUGH DEMOLITION CONNECT MAXIMUM OF 8 TERNINAL UNITS ON A CIRCUIT. COORDINATE WITH TEMPERATURE CONTROLS.

8 REMOVE SPARE BREAKER AND PROVIDE NEW 20A/2P BREAKER IN EXISTING SQUARE D NQ PANEL PPD1 FOR CR-D1.

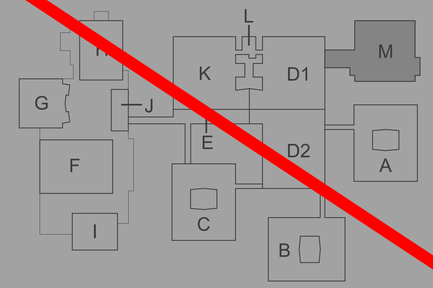
9 PROVIDE EATON RETROFIT KIT: KPRL4KD34009XX AND BLANK 11X COVER IN EXISTING EATON PANEL PPDPA. PROVIDE NEW 400 AMP BREAKER TO FEED NEW PANEL PPD3.

10 CONNECT SMOKE DAMPER TO EXISTING LOCAL RECEPTACLE CIRCUIT.

11 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. PROVIDE NEW 20/2 POLE BREAKER IN NEXT AVAILABLE SPARE SPOT IN PANEL SHOWN.

12 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. CONNECT TO NEW CIRCUIT SHOWN.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

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PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ELECTRICAL ROOF PLAN - UNIT M

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E150M

21-807.00

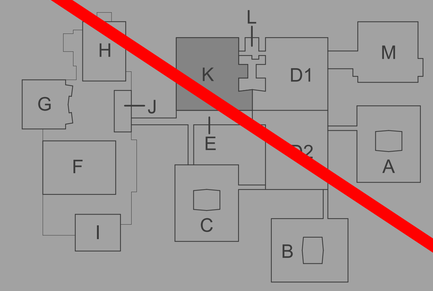
LOWER LEVEL LIGHTING PLAN - UNIT K
3/32" = 1'-0"

ELECTRICAL KEYED NOTES

1 REINSTALL EXISTING FIXTURES IN NEW CEILING.

OMIT ALL WORK ON THIS SHEET

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL LIGHTING PLAN - UNIT K

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E 200K
21-807.00

ELECTRICAL KEYED NOTES

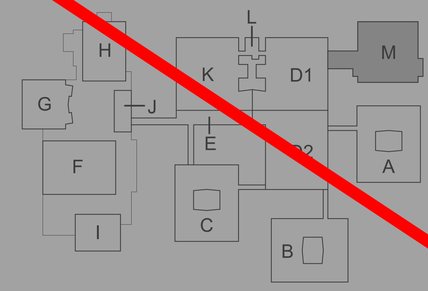
1 REINSTALL EXISTING FIXTURES IN NEW CEILING.

OMIT ALL WORK ON THIS SHEET

LOWER LEVEL LIGHTING PLAN - UNIT M

3/32" = 1'-0"

LEVEL 1 - KEY PLAN



KEY PLAN

SCALE: NO SCALE

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ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

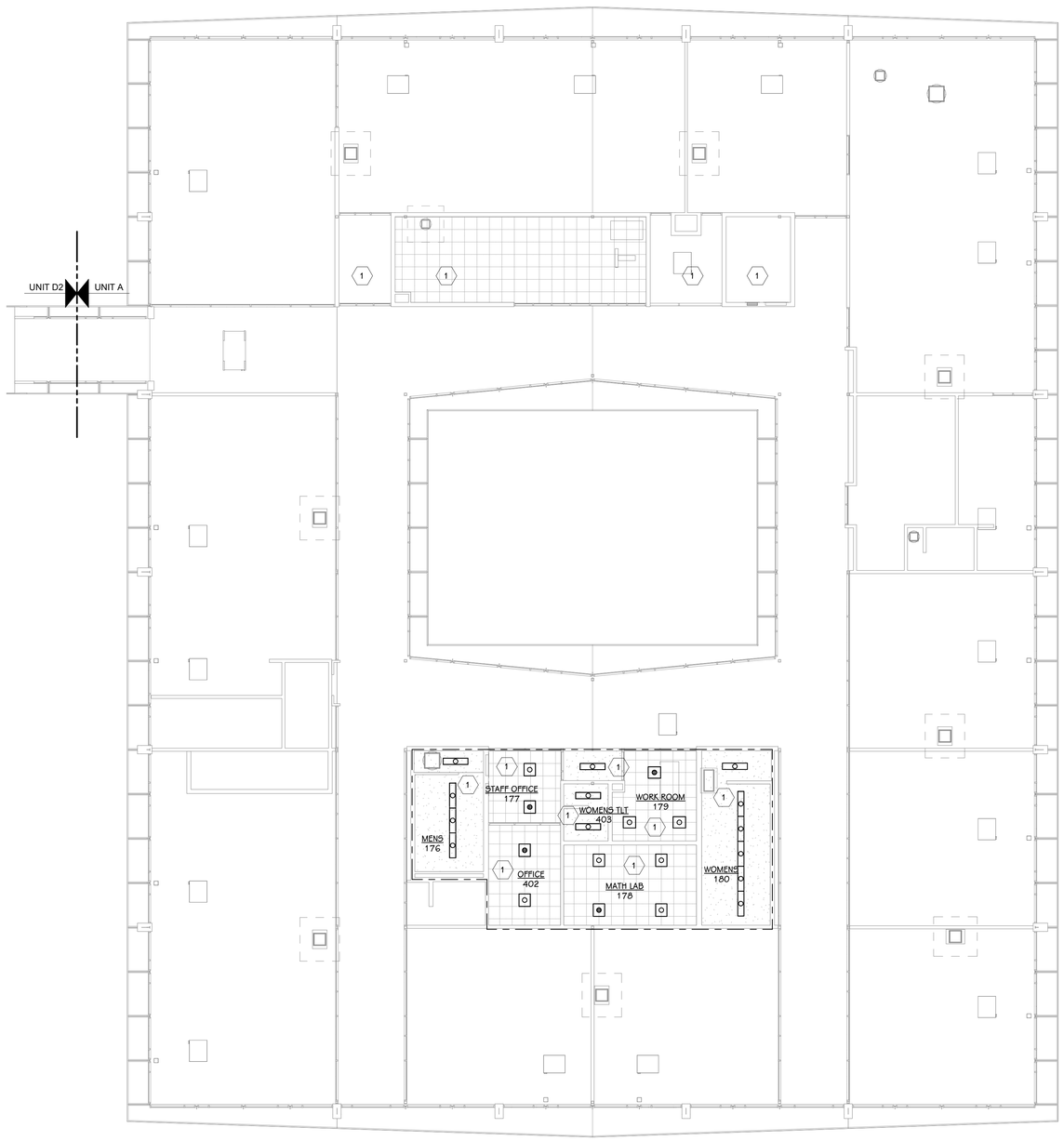
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL LIGHTING PLAN - UNIT M

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E 200M

21-807.00

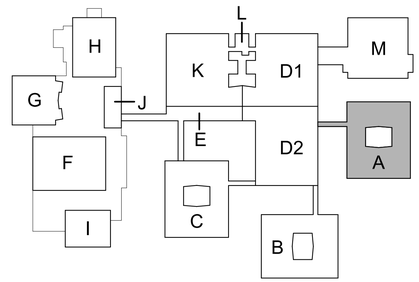


LEVEL 1 LIGHTING PLAN - UNIT A
3/32" = 1'-0"

ELECTRICAL KEYED NOTES

1 REINSTALL EXISTING FIXTURES IN NEW CEILING.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

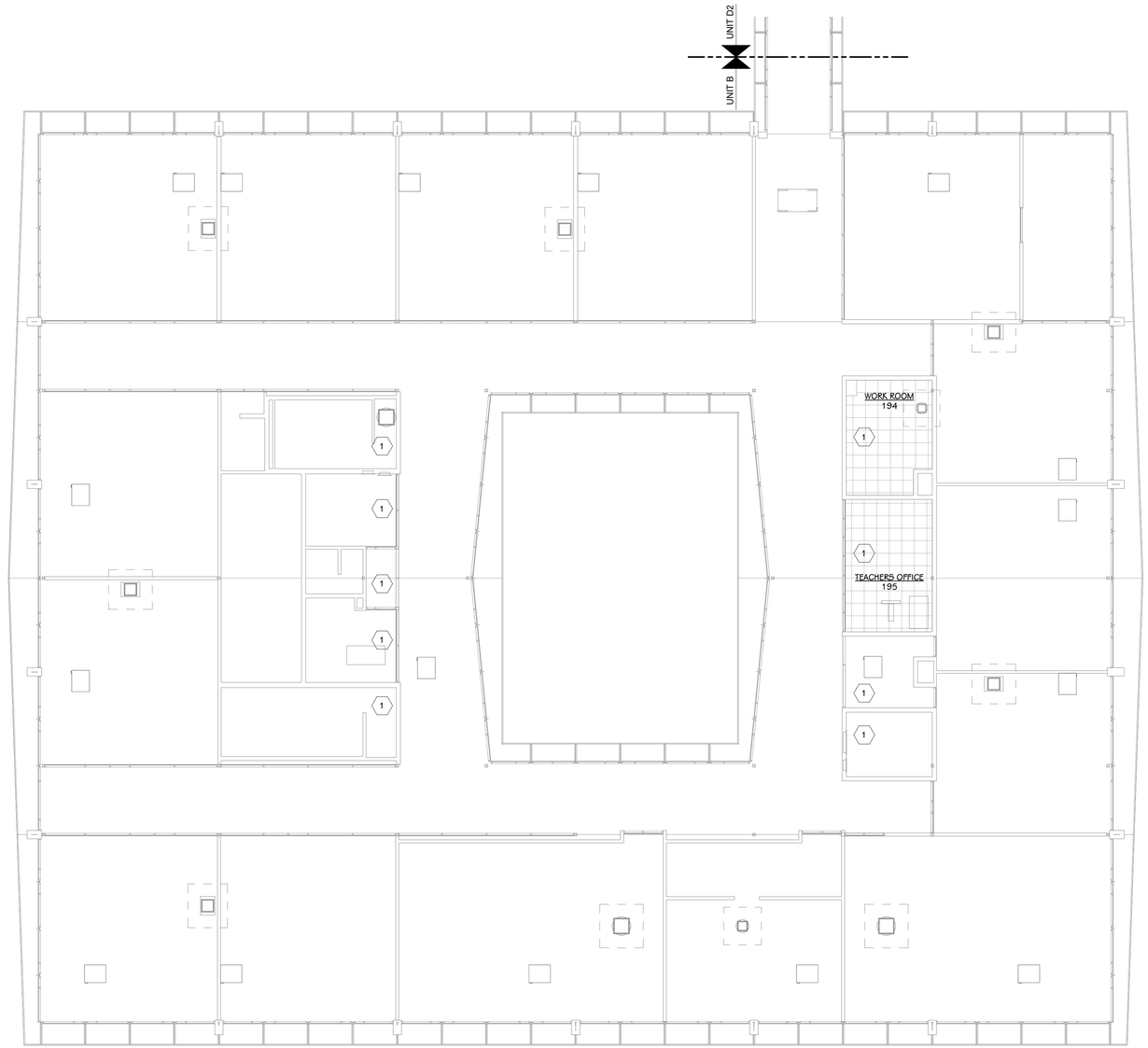
PROJECT TITLE
LOY NORRIX HIGH
SCHOOL MECHANICAL
IMPROVEMENTS
PROJECT

OWNER
KALAMAZOO PUBLIC
SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 LIGHTING PLAN - UNIT A

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E 201A
21-807.00

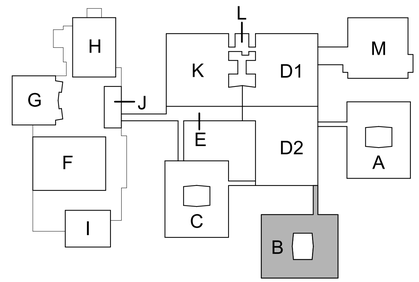


LEVEL 1 LIGHTING PLAN - UNIT B
3/32" = 1'-0"

ELECTRICAL KEYED NOTES

1 REINSTALL EXISTING FIXTURES IN NEW CEILING.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

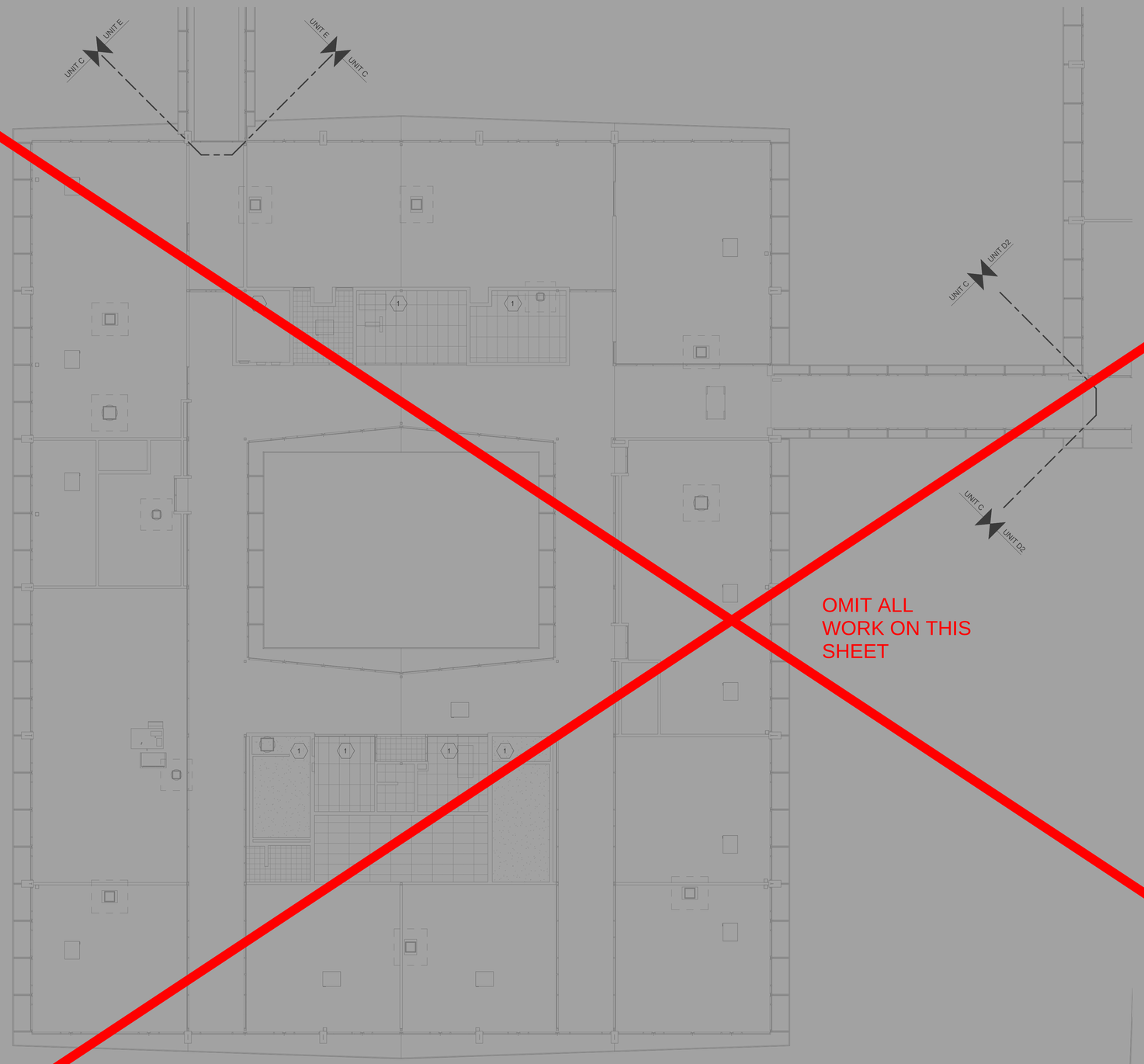
PROJECT TITLE
LOY NORRIX HIGH
SCHOOL MECHANICAL
IMPROVEMENTS
PROJECT

OWNER
KALAMAZOO PUBLIC
SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 LIGHTING PLAN - UNIT B

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E 201B
21-807.00



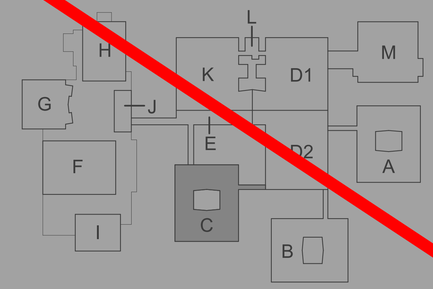
OMIT ALL
WORK ON THIS
SHEET

LEVEL 1 LIGHTING PLAN - UNIT C
3/32" = 1'-0"

ELECTRICAL KEYED NOTES

1 REINSTALL EXISTING FIXTURES IN NEW CEILING.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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PROJECT TITLE
LOY NORRIX HIGH
SCHOOL MECHANICAL
IMPROVEMENTS
PROJECT

OWNER
KALAMAZOO PUBLIC
SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 LIGHTING PLAN - UNIT C

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E 201C
21-807.00

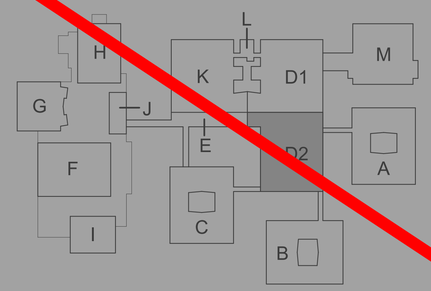
LEVEL 1 LIGHTING PLAN - UNIT D2
3/32" = 1'-0"

OMIT ALL WORK ON THIS SHEET

ELECTRICAL KEYED NOTES

1 REINSTALL EXISTING FIXTURES IN NEW CEILING.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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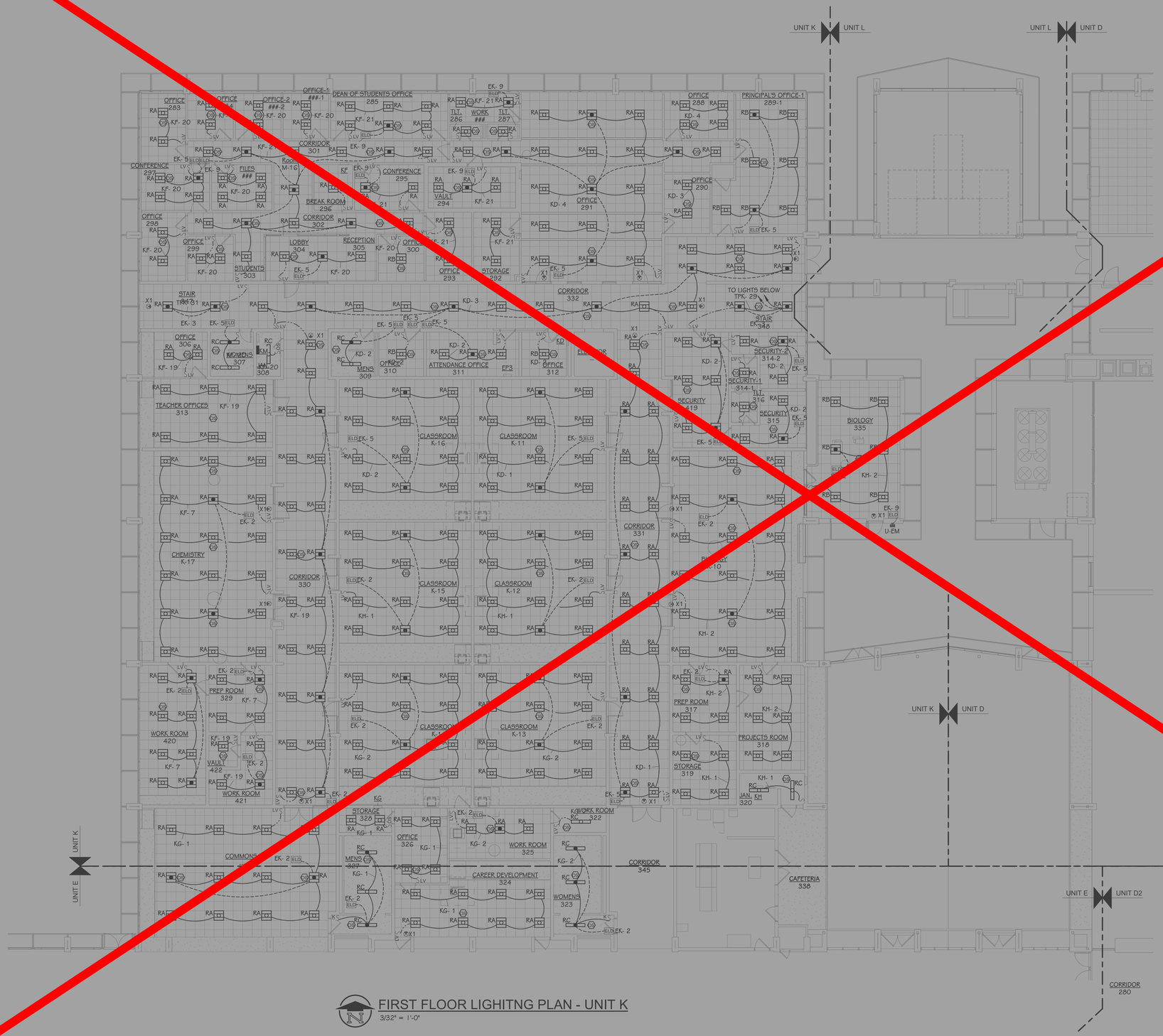
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 LIGHTING PLAN - UNIT D2

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E 201D2
21-807.00



FIRST FLOOR LIGHITNG PLAN - UNIT K

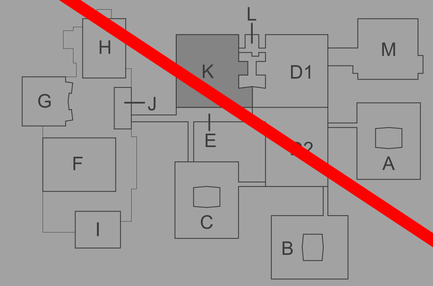
3/32" = 1'-0"

ELECTRICAL KEYED NOTES

1 REINSTALL EXISTING FIXTURES IN NEW CEILING.

OMIT ALL
WORK ON THIS
SHEET

LEVEL 1 - KEY PLAN



KEY PLAN

SCALE: NO SCALE

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PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 LIGHTING PLAN - UNIT K

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E 201K

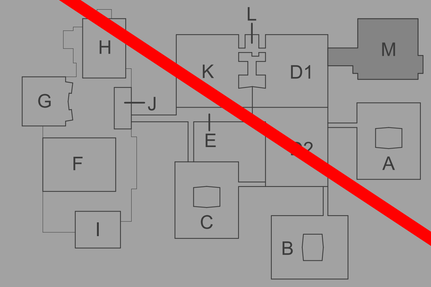
21-807.00

ELECTRICAL KEYED NOTES

1 REINSTALL EXISTING FIXTURES IN NEW CEILING.

OMIT ALL
WORK ON THIS
SHEET

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

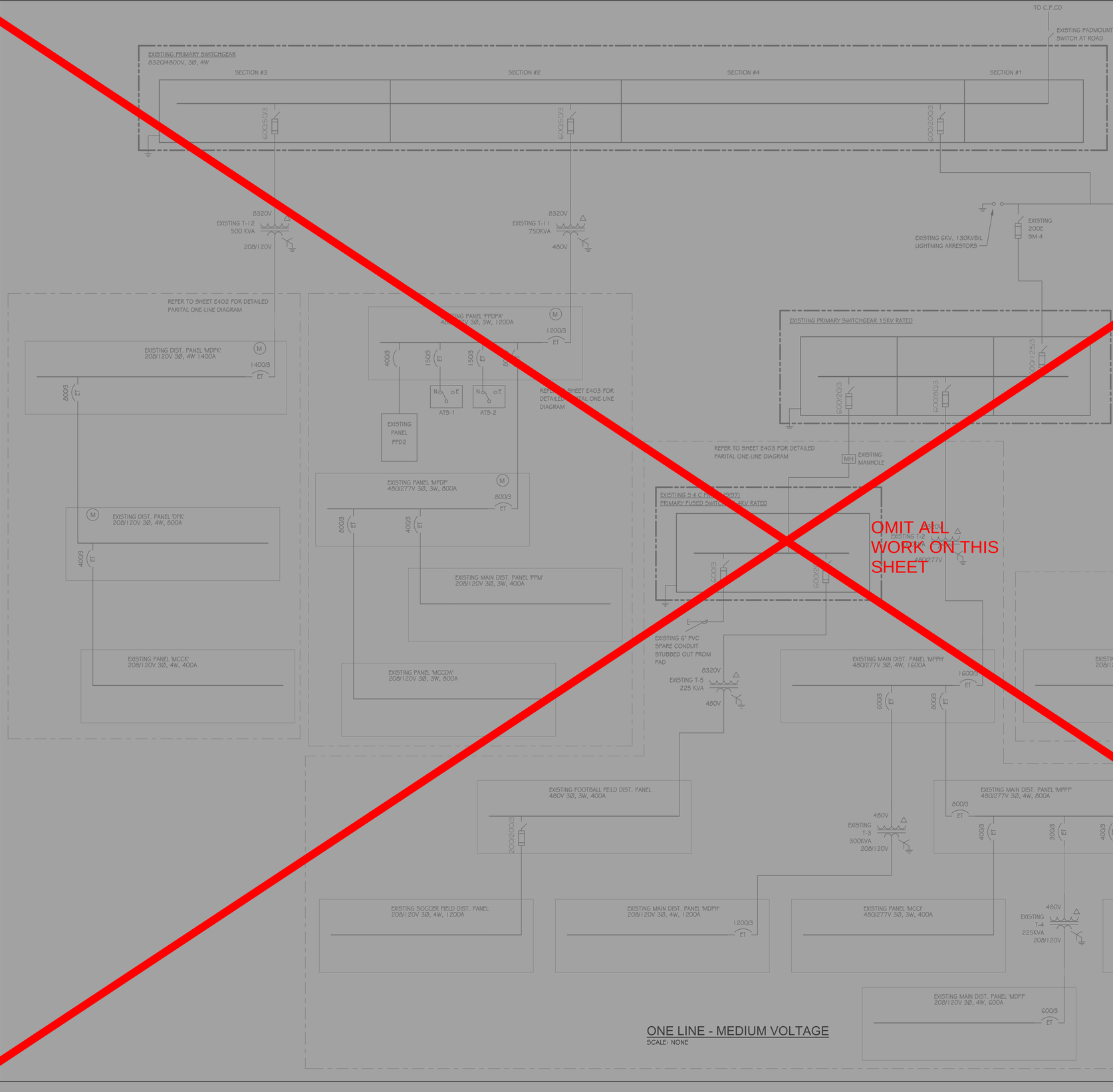
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 LIGHTING PLAN - UNIT M

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E 201M

21-807.00



ONE LINE - MEDIUM VOLTAGE
SCALE: NONE

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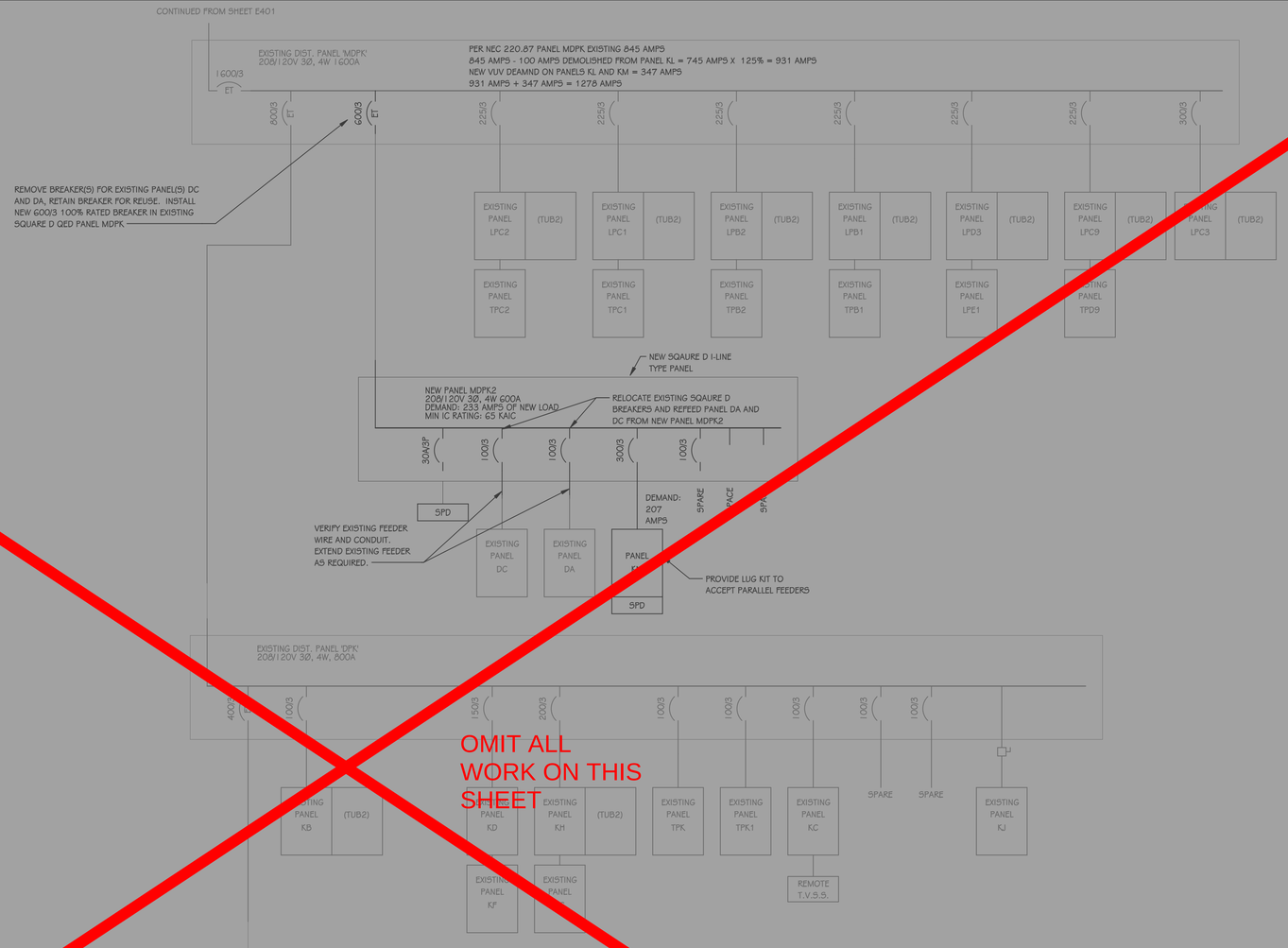
OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
ELECTRICAL ONE LINE - MEDIUM VOLTAGE

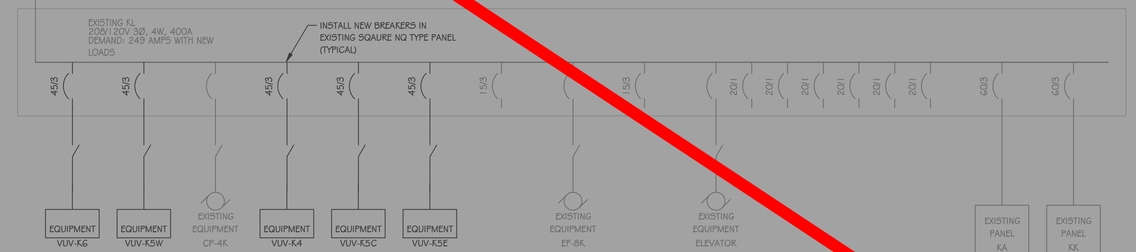
DATE
NOVEMBER 22, 2022

SHEET NUMBER
E 401
21-807.00

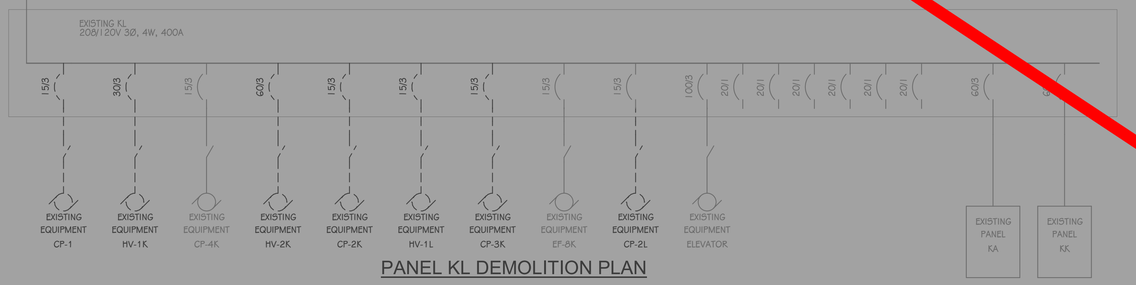


ONE-LINE - PARTIAL #1

SCALE: NONE



PANEL KL DEMOLITION PLAN



SERVICE ENTRANCE SPD SCHEDULE

VOLTAGE	SWITCHBOARD AMPS	RAYVOSS SPD MODEL	SURGE RATING	PROTECTION MODES	MAX WIRE	MIN BREAKER
208/120V Wye	Up to 2000A	120-3Y-N3-7-04-A-H	140kA/Mode	L-N, L-G, N-G	4/0	100A
208/120V Wye	2000A-4000A	120-3Y-A1-7-04-A-H	200kA/Mode	L-N, L-G, N-G	4/0	100A
480/277V Wye	Up to 2000A	277-3Y-N3-7-04-C-H	140kA/Mode	L-N, L-G, N-G	4/0	100A
480/277V Wye	2000A-4000A	277-3Y-A1-7-04-C-H	200kA/Mode	L-N, L-G, N-G	4/0	100A
480 Delta	Up to 2000A	480-3D-M3-3-04-D-H	140kA/Mode	L-G	#2 AWG	60A
480 Delta	2000A-4000A	480-3D-N1-3-04-D-H	200kA/Mode	L-G	#2 AWG	60A

*FOR ALL SERVICE ENTRANCE, GENERATOR ENTRANCE AND OTHER HIGH RISK ELECTRICAL ENTRANCE/EXITS. ALL SERVICE ENTRANCE DEVICES TO HAVE TIME STAMP EVENT MONITORING. MOUNT DEVICES WITHIN 10' OF PANEL/SWITCHBOARD BUS.

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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LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ELECTRICAL ONE LINE - PARTIAL #1

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E402
21-807.00

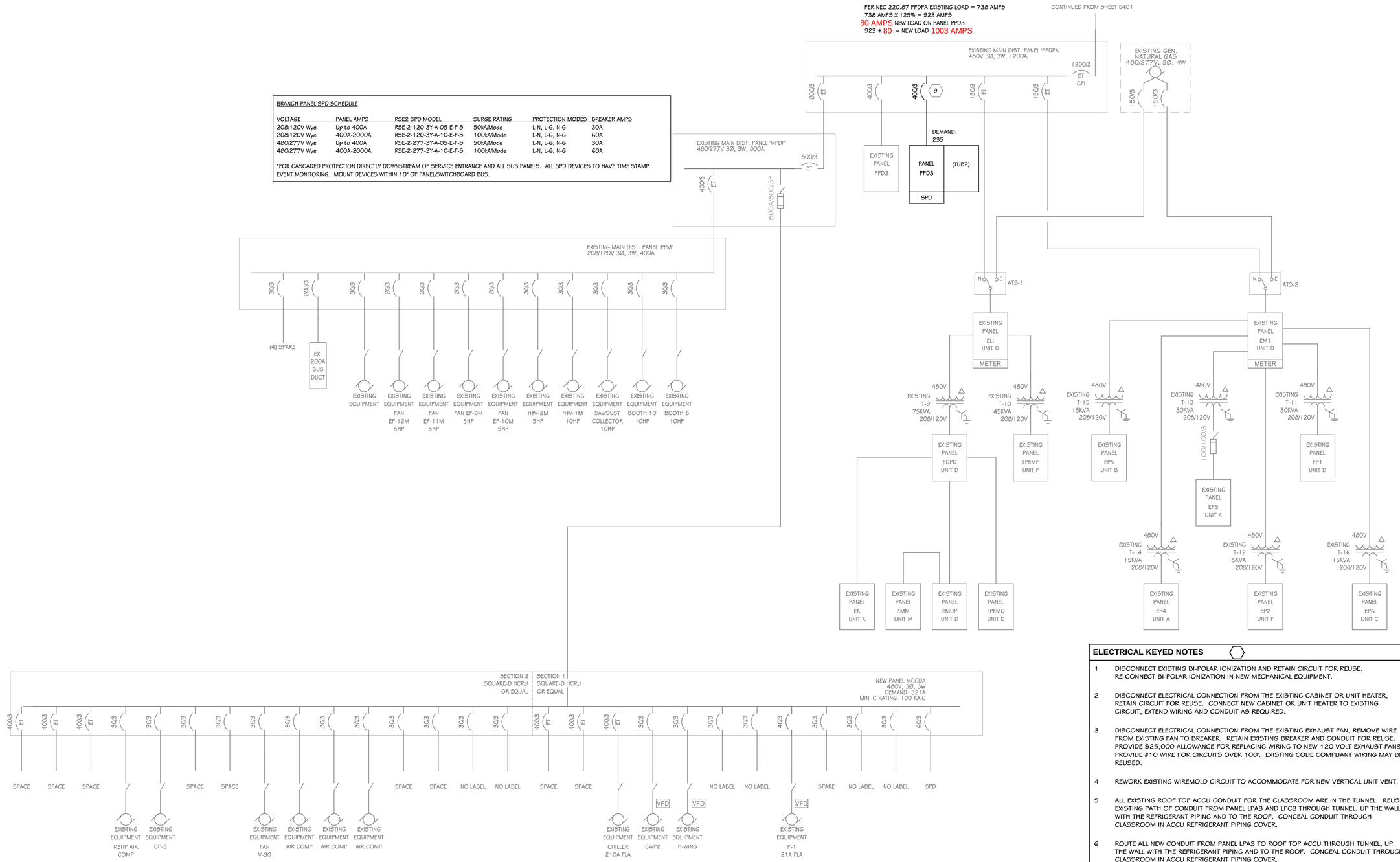
PER NEC 220.87 PPDPA EXISTING LOAD = 738 AMPS
738 AMPS X 125% = 923 AMPS
80 AMPS NEW LOAD ON PANEL PPD3
923 + 80 = NEW LOAD 1003 AMPS

CONTINUED FROM SHEET E401

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.



ONE LINE - #2 PARTIAL

SCALE: NONE

ELECTRICAL KEYED NOTES

1 DISCONNECT EXISTING BI-POLAR IONIZATION AND RETAIN CIRCUIT FOR REUSE. RE-CONNECT BI-POLAR IONIZATION IN NEW MECHANICAL EQUIPMENT.

2 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING CABINET OR UNIT HEATER, RETAIN CIRCUIT FOR REUSE. CONNECT NEW CABINET OR UNIT HEATER TO EXISTING CIRCUIT, EXTEND WIRING AND CONDUIT AS REQUIRED.

3 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN, REMOVE WIRE FROM EXISTING FAN TO BREAKER. RETAIN EXISTING BREAKER AND CONDUIT FOR REUSE. PROVIDE $25,000 ALLOWANCE FOR REPLACING WIRING TO NEW 120 VOLT EXHAUST FANS. PROVIDE #10 WIRE FOR CIRCUITS OVER 100'. EXISTING CODE COMPLIANT WIRING MAY BE REUSED.

4 REWORK EXISTING WIREMOLD CIRCUIT TO ACCOMMODATE FOR NEW VERTICAL UNIT VENT.

5 ALL EXISTING ROOF TOP ACCU CONDUIT FOR THE CLASSROOM ARE IN THE TUNNEL. REUSE EXISTING PATH OF CONDUIT FROM PANEL LPA3 AND LPC3 THROUGH TUNNEL, UP THE WALL WITH THE REFRIGERANT PIPING AND TO THE ROOF. CONCEAL CONDUIT THROUGH CLASSROOM IN ACCU REFRIGERANT PIPING COVER.

6 ROUTE ALL NEW CONDUIT FROM PANEL LPA3 TO ROOF TOP ACCU THROUGH TUNNEL, UP THE WALL WITH THE REFRIGERANT PIPING AND TO THE ROOF. CONCEAL CONDUIT THROUGH CLASSROOM IN ACCU REFRIGERANT PIPING COVER.

7 CONNECT NEW TERMINAL UNIT TRANSFORMER TO EXISTING LOCAL TERMINAL UNIT POWER CIRCUIT MADE AVAILABLE THOUGH DEMOLITION CONNECT MAXIMUM OF 8 TERNINAL UNITS ON A CIRCUIT. COORDINATE WITH TEMPERATURE CONTROLS.

8 REMOVE SPARE BREAKER AND PROVIDE NEW 20A/2P BREAKER IN EXISTING SQUARE D NQ PANEL PPD1 FOR CR-D1.

9 PROVIDE EATON RETROFIT KIT: KPRL4KD34005XX AND BLANK 11X COVER IN EXISTING EATON PANEL PPDPA. PROVIDE NEW 400 AMP BREAKER TO FEED NEW PANEL PPD3.

10 CONNECT SMOKE DAMPER TO EXISTING LOCAL RECEPTACLE CIRCUIT.

11 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. PROVIDE NEW 20/2 POLE BREAKER IN NEXT AVAILABLE SPARE SPOT IN PANEL SHOWN.

12 DISCONNECT ELECTRICAL CONNECTION FROM THE EXISTING EXHAUST FAN AND ALL WIRE AND CONDUIT BACK TO SOURCE. CONNECT TO NEW CIRCUIT SHOWN.

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LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

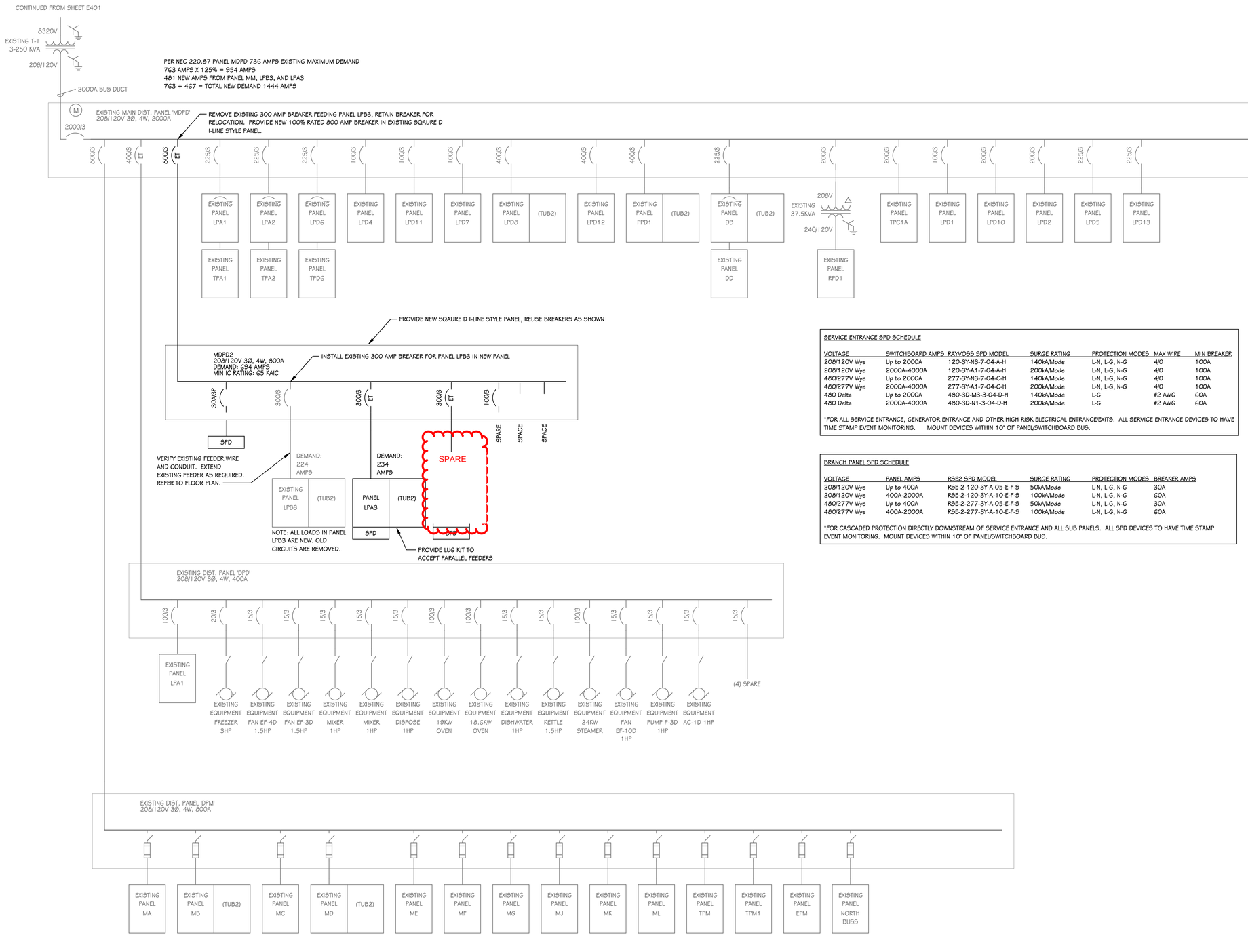
OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
ELECTRICAL ONE LINE - PARTIAL #2

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E 403
21-807.00



ONE LINE - PARTIAL #4

SCALE: NONE

SERVICE ENTRANCE SPD SCHEDULE

VOLTAGE	SWITCHBOARD AMPS	RAYVOSS SPD MODEL	SURGE RATING	PROTECTION MODES	MAX WIRE	MIN BREAKER
208/120V Wye	Up to 2000A	120-3Y-N3-7-04-A-H	140kA/Mode	L-N, L-G, N-G	4/0	100A
208/120V Wye	2000A-4000A	120-3Y-A1-7-04-A-H	200kA/Mode	L-N, L-G, N-G	4/0	100A
480/277V Wye	Up to 2000A	277-3Y-N3-7-04-C-H	140kA/Mode	L-N, L-G, N-G	4/0	100A
480/277V Wye	2000A-4000A	277-3Y-A1-7-04-C-H	200kA/Mode	L-N, L-G, N-G	4/0	100A
480 Delta	Up to 2000A	480-3D-M3-3-04-D-H	140kA/Mode	L-G	#2 AWG	60A
480 Delta	2000A-4000A	480-3D-N1-3-04-D-H	200kA/Mode	L-G	#2 AWG	60A

*FOR ALL SERVICE ENTRANCE, GENERATOR ENTRANCE AND OTHER HIGH RISK ELECTRICAL ENTRANCE/EXITS. ALL SERVICE ENTRANCE DEVICES TO HAVE TIME STAMP EVENT MONITORING. MOUNT DEVICES WITHIN 10" OF PANEL/SWITCHBOARD BUS.

BRANCH PANEL SPD SCHEDULE

VOLTAGE	PANEL AMPS	R5E2 SPD MODEL	SURGE RATING	PROTECTION MODES	BREAKER AMPS
208/120V Wye	Up to 400A	R5E-2-120-3Y-A-05-E-F-S	50kA/Mode	L-N, L-G, N-G	30A
208/120V Wye	400A-2000A	R5E-2-120-3Y-A-10-E-F-S	100kA/Mode	L-N, L-G, N-G	60A
480/277V Wye	Up to 400A	R5E-2-277-3Y-A-05-E-F-S	50kA/Mode	L-N, L-G, N-G	30A
480/277V Wye	400A-2000A	R5E-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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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ELECTRICAL ONE LINE - PARTIAL #4

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E 404
21-807.00

Item grayed out are omitted from the scope of work (typical)

ELECTRICAL HVAC FEEDER SCHEDULE

DESCRIPTION	FED FROM	DISCONNECT MEANS	CURRENT (FLA)	FEEDER					FEED VOLT DROP %	NOTES
				BREAKER / POLES	# OF SETS	WIRE	GROUND	EMT		
480 V										
HVAC - ACCU-A1	PPD3	30/3 NEMA 3R NFD5	19 A	25 A / 3	1 SET	3 #10	#10 GND.	3/4"	2.51%	
HVAC - ACCU-B1	PPD3	30/3 NEMA 3R NFD5	18 A	25 A / 3	1 SET	3 #8	#8 GND.	3/4"	2.12%	
HVAC - ACCU-C1	PPD3	30/3 NEMA 3R NFD5	18 A	25 A / 3	1 SET	3 #8	#8 GND.	3/4"	2.68%	
HVAC - ACCU-M1	MCCDA	30/3 NEMA 3R NFD5	117 A	150 A / 3	1 SET	3 #1/0	#6 GND.	2"	2.41%	
HVAC - AHU-A1	PPD3	30/3 NFD5	8 A	15 A / 3	1 SET	3 #12	#12 GND.	3/4"	1.49%	
HVAC - AHU-B1	PPD3	30/3 NFD5	8 A	15 A / 3	1 SET	3 #12	#12 GND.	3/4"	2.18%	
HVAC - AHU-C1	PPD3	30/3 NFD5	8 A	15 A / 3	1 SET	3 #12	#12 GND.	3/4"	2.78%	
HVAC - AHU-K1 RF1	PPD3	30/3 NFD5	8 A	20 A / 3	1 SET	3 #12	#12 GND.	3/4"	1.27%	
HVAC - AHU-K1 RF2	PPD3	30/3 NFD5	8 A	20 A / 3	1 SET	3 #12	#12 GND.	3/4"	1.26%	
HVAC - AHU-K1 SF1	PPD3	30/3 NFD5	14 A	20 A / 3	1 SET	3 #12	#12 GND.	3/4"	2.27%	
HVAC - AHU-K1 SF2	PPD3	30/3 NFD5	14 A	20 A / 3	1 SET	3 #12	#12 GND.	3/4"	2.25%	
HVAC - AHU-L1	PPD3	30/3 NFD5	8 A	20 A / 3	1 SET	3 #12	#12 GND.	3/4"	1.13%	
HVAC - AHU-M1 SF1	PPD3	30/3 NFD5	14 A	20 A / 3	1 SET	3 #10	#10 GND.	3/4"	1.57%	
HVAC - AHU-M1 SF2	PPD3	30/3 NFD5	14 A	20 A / 3	1 SET	3 #10	#10 GND.	3/4"	1.60%	
HVAC - AHU-M2	PPD3	30/3 NFD5	8 A	20 A / 3	1 SET	4 #12	#12 GND.	3/4"	1.73%	
HVAC - P-D1	PPD3	30/3 NFD5	14 A	20 A / 3	1 SET	3 #12	#12 GND.	3/4"	1.87%	
HVAC - P-D2	PPD3	30/3 NFD5	14 A	20 A / 3	1 SET	3 #12	#12 GND.	3/4"	1.84%	
HVAC - P-K1	PPD3	30/3 NFD5	11 A	20 A / 3	1 SET	3 #12	#12 GND.	3/4"	1.84%	
HVAC - P-K2	PPD3	30/3 NFD5	11 A	20 A / 3	1 SET	3 #12	#12 GND.	3/4"	1.83%	
HVAC - P-K3	PPD3	30/3 NFD5	2 A	20 A / 3	1 SET	3 #12	#12 GND.	3/4"	0.32%	
HVAC - P-M1	PPD3	30/3 NFD5	2 A	20 A / 3	1 SET	3 #12	#12 GND.	3/4"	0.35%	
HVAC - P-M2	PPD3	30/3 NFD5	2 A	20 A / 3	1 SET	4 #12	#12 GND.	3/4"	0.36%	
HVAC - RTU-C1	PPD3	30/3 NFD5	16 A	20 A / 3	1 SET	3 #6	#6 GND.	1"	2.07%	
HVAC - RTU-M1	MCCDA	30/3 NFD5	16 A	20 A / 3	1 SET	3 #10	#10 GND.	3/4"	2.32%	
208 V										
HVAC - EHC-A1	LPA1	60/3 NFD5	30 A	40 A / 3	1 SET	3 #8	#10 GND.	3/4"	1.26%	
HVAC - EHC-B1	LPB2	60/3 NFD5	30 A	40 A / 3	1 SET	3 #8	#10 GND.	3/4"	1.24%	
HVAC - EHC-C1	LPC1D	60/3 NFD5	30 A	40 A / 3	1 SET	3 #6	#10 GND.	3/4"	1.22%	
HVAC - VUV-27A	MDPK2	MANUFACTURER	27 A	45 A / 3	1 SET	3 #6	#6 GND.	1"	1.64%	
HVAC - VUV-31A	KM	MANUFACTURER	18 A	30 A / 3	1 SET	3 #8	#8 GND.	3/4"	0.90%	
HVAC - VUV-32A	KM	MANUFACTURER	18 A	30 A / 3	1 SET	3 #8	#8 GND.	3/4"	2.39%	
HVAC - VUV-42A	KM	MANUFACTURER	27 A	45 A / 3	1 SET	3 #6	#6 GND.	1"	1.90%	
HVAC - VUV-K4	KL	MANUFACTURER	27 A	45 A / 3	1 SET	3 #6	#6 GND.	1"	2.00%	
HVAC - VUV-K5C	KL	MANUFACTURER	27 A	45 A / 3	1 SET	3 #6	#6 GND.	1"	2.39%	
HVAC - VUV-K5E	KL	MANUFACTURER	27 A	45 A / 3	1 SET	3 #6	#6 GND.	1"	2.04%	
HVAC - VUV-K5W	KL	MANUFACTURER	27 A	45 A / 3	1 SET	3 #6	#6 GND.	1"	2.73%	
HVAC - VUV-K6	KL	MANUFACTURER	27 A	45 A / 3	1 SET	3 #6	#6 GND.	1"	1.70%	
HVAC - VUV-K11	KM	MANUFACTURER	18 A	30 A / 3	1 SET	3 #10	#10 GND.	3/4"	2.37%	
HVAC - VUV-K12	KM	MANUFACTURER	18 A	30 A / 3	1 SET	3 #10	#10 GND.	3/4"	2.92%	
HVAC - VUV-K13	KM	MANUFACTURER	18 A	30 A / 3	1 SET	3 #8	#8 GND.	3/4"	2.21%	
HVAC - VUV-K14	KM	MANUFACTURER	18 A	30 A / 3	1 SET	3 #8	#8 GND.	3/4"	2.07%	
HVAC - VUV-K15	KM	MANUFACTURER	18 A	30 A / 3	1 SET	3 #10	#10 GND.	3/4"	2.80%	
HVAC - VUV-K16	KM	MANUFACTURER	18 A	30 A / 3	1 SET	3 #10	#10 GND.	3/4"	2.22%	
HVAC - VUV-K17	KM	MANUFACTURER	27 A	45 A / 3	1 SET	3 #8	#10 GND.	3/4"	2.33%	
HVAC - VUV-M1A	MM	MANUFACTURER	27 A	45 A / 3	1 SET	3 #6	#6 GND.	1"	2.03%	
HVAC - VUV-M3	MM	MANUFACTURER	19 A	30 A / 3	1 SET	3 #10	#10 GND.	3/4"	1.76%	
HVAC - VUV-M3A	MM	MANUFACTURER	24 A	40 A / 3	1 SET	3 #6	#6 GND.	1"	2.17%	
HVAC - VUV-M3B	MM	MANUFACTURER	24 A	40 A / 3	1 SET	3 #6	#6 GND.	1"	2.76%	
HVAC - VUV-M6	MM	MANUFACTURER	19 A	30 A / 3	1 SET	3 #8	#8 GND.	3/4"	2.40%	
HVAC - VUV-M10	MM	MANUFACTURER	19 A	30 A / 3	1 SET	3 #8	#8 GND.	3/4"	1.00%	
HVAC - VUV-M11	MM	MANUFACTURER	19 A	30 A / 3	1 SET	3 #10	#10 GND.	3/4"	1.71%	
HVAC - VUV-M12A	MM	MANUFACTURER	24 A	40 A / 3	1 SET	3 #8	#10 GND.	3/4"	2.53%	
HVAC - VUV-M12B	MM	MANUFACTURER	24 A	40 A / 3	1 SET	3 #6	#8 GND.	1"	2.15%	
HVAC - VUV-M15	MM	MANUFACTURER	24 A	40 A / 3	1 SET	3 #6	#8 GND.	1"	2.20%	
208 V										
HVAC - ACCU-170	LPA3	30/3 NEMA 3R NFD5	13 A	20 A / 2	1 SET	3 #10	#10 GND.	3/4"	2.20%	
HVAC - ACCU-173	LPA3	30/3 NEMA 3R NFD5	15 A	25 A / 2	1 SET	3 #8	#8 GND.	3/4"	2.37%	
HVAC - ACCU-179	LPA3	30/3 NEMA 3R NFD5	15 A	25 A / 2	1 SET	3 #8	#8 GND.	3/4"	2.10%	
HVAC - ACCU-187	LPB3	30/3 NEMA 3R NFD5	15 A	25 A / 2	1 SET	3 #8	#8 GND.	3/4"	2.08%	
HVAC - ACCU-188	LPB3	30/3 NEMA 3R NFD5	15 A	25 A / 2	1 SET	3 #8	#8 GND.	3/4"	2.03%	
HVAC - ACCU-195	LPB3	30/3 NEMA 3R NFD5	13 A	20 A / 2	1 SET	3 #8	#8 GND.	3/4"	1.36%	
HVAC - ACCU-203	LPC3	30/3 NEMA 3R NFD5	13 A	20 A / 2	1 SET	3 #8	#8 GND.	3/4"	1.51%	
HVAC - ACCU-205	LPC3	30/3 NEMA 3R NFD5	15 A	25 A / 2	1 SET	3 #8	#8 GND.	3/4"	2.44%	
HVAC - ACCU-212	LPC3	30/3 NEMA 3R NFD5	15 A	25 A / 2	1 SET	3 #8	#8 GND.	3/4"	2.02%	
HVAC - ACCU-A10	LPA3	60/3 NEMA 3R NFD5	29 A	45 A / 2	1 SET	3 #6	#8 GND.	1"	1.27%	
HVAC - ACCU-A12A	LPA3	30/3 NEMA 3R NFD5	18 A	30 A / 2	1 SET	3 #10	#10 GND.	3/4"	2.82%	
HVAC - ACCU-A12B	LPA3	30/3 NEMA 3R NFD5	18 A	30 A / 2	1 SET	3 #8	#8 GND.	3/4"	2.22%	
HVAC - ACCU-A13	LPA3	30/3 NEMA 3R NFD5	15 A	25 A / 2	1 SET	3 #8	#8 GND.	3/4"	2.13%	
HVAC - ACCU-A14A	LPA3	30/3 NEMA 3R NFD5	18 A	30 A / 2	1 SET	3 #8	#8 GND.	3/4"	2.97%	
HVAC - ACCU-A14B	LPA3	30/3 NEMA 3R NFD5	18 A	30 A / 2	1 SET	3 #8	#8 GND.	3/4"	2.91%	
HVAC - ACCU-A15	LPA3	30/3 NEMA 3R NFD5	18 A	30 A / 2	1 SET	3 #6	#6 GND.	1"	2.08%	
HVAC - ACCU-A16	LPA3	30/3 NEMA 3R NFD5	18 A	30 A / 2	1 SET	3 #6	#6 GND.	1"	2.34%	
HVAC - ACCU-A17	LPA3	60/3 NEMA 3R NFD5	30 A	45 A / 2	1 SET	3 #4	#4 GND.	1 1/4"	2.84%	
HVAC - ACCU-A18	LPA3	30/3 NEMA 3R NFD5	18 A	30 A / 2	1 SET	3 #6	#6 GND.	1"	2.09%	
HVAC - ACCU-A19	LPA3	30/3 NEMA 3R NFD5	18 A	30 A / 2	1 SET	3 #8	#8 GND.	3/4"	2.97%	
HVAC - ACCU-A20A	LPA3	30/3 NEMA 3R NFD5	15 A	25 A / 2	1 SET	3 #8	#8 GND.	3/4"	1.61%	
HVAC - ACCU-A20B	LPA3	30/3 NEMA 3R NFD5	15 A	25 A / 2	1 SET	3 #8	#8 GND.	3/4"	1.90%	
HVAC - ACCU-A21A	LPA3	30/3 NEMA 3R NFD5	15 A	25 A / 2	1 SET	3 #8	#8 GND.	3/4"	0.96%	
HVAC - ACCU-A21B	LPA3	30/3 NEMA 3R NFD5	15 A	25 A / 2	1 SET	3 #8	#8 GND.	3/4"	1.21%	
HVAC - ACCU-B10	LPB3	30/3 NEMA 3R NFD5	18 A	30 A / 2	1 SET	3 #10	#10 GND.	3/4"	1.85%	
HVAC - ACCU-B11	LPB3	30/3 NEMA 3R NFD5	15 A	25 A / 2	1 SET	3 #10	#10 GND.	3/4"	2.47%	
HVAC - ACCU-B12	LPB3	30/3 NEMA 3R NFD5	18 A	30 A / 2	1 SET	3 #8	#8 GND.	3/4"	2.14%	
HVAC - ACCU-B13	LPB3	30/3 NEMA 3R NFD5	15 A	25 A / 2	1 SET	3 #8	#8 GND.	3/4"	2.04%	
HVAC - ACCU-B14	LPB3	30/3 NEMA 3R NFD5	18 A	30 A / 2	1 SET	3 #6	#6 GND.	1"	1.98%	
HVAC - ACCU-B15	LPB3	30/3 NEMA 3R NFD5	18 A	30 A / 2	1 SET	3 #6	#6 GND.	1"	1.94%	
HVAC - ACCU-B16	LPB3	30/3 NEMA 3R NFD5	15 A	25 A / 2	1 SET	3 #8	#8 GND.	3/4"	3.00%	
HVAC - ACCU-B17	LPB3	60/3 NEMA 3R NFD5	30 A	45 A / 2	1 SET	3 #4	#4 GND.	1 1/4"	2.82%	
HVAC - ACCU-B18	LPB3	30/3 NEMA 3R NFD5	18 A	30 A / 2	1 SET	3 #6	#6 GND.	1"	2.14%	
HVAC - ACCU-B19	LPB3	30/3 NEMA 3R NFD5	18 A	30 A / 2	1 SET	3 #8	#8 GND.	3/4"	2.91%	
HVAC - ACCU-B20	LPB3	60/3 NEMA 3R NFD5	30 A	45 A / 2	1 SET	3 #4	#4 GND.	1 1/4"	1.50%	
HVAC - ACCU-B21	LPB3	30/3 NEMA 3R NFD5	18 A	30 A / 2	1 SET	3 #6	#8 GND.	1"	1.23%	
HVAC - ACCU-B22	LPB3	30/3 NEMA 3R NFD5	18 A	30 A / 2	1 SET	3 #8	#10 GND.	3/4"	1.51%	
HVAC - ACCU-B23	LPB3	30/3 NEMA 3R NFD5	18 A	30 A / 2	1 SET	3 #8	#10 GND.	3/4"	1.10%	
HVAC - ACCU-C10A	LPC3	30/3 NEMA 3R NFD5	18 A	30 A / 2	1 SET	3 #8	#10 GND.	3/4"	1.62%	
HVAC - ACCU-C10B	LPC3	30/3 NEMA 3R NFD5	18 A	30 A / 2	1 SET	3 #8	#10 GND.	3/4"	1.86%	
HVAC - ACCU-C12	LPC3	30/3 NEMA 3R NFD5	18 A	30 A / 2	1 SET	3 #6	#8 GND.	1"	1.47%	
HVAC - ACCU-C13	LPC3	60/3 NEMA 3R NFD5	30 A	45 A / 2	1 SET	3 #4	#4 GND.	1 1/4"	1.78%	
HVAC - ACCU-C14	LPC3	30/3 NEMA 3R NFD5	18 A	30 A / 2	1 SET	3 #6	#6 GND.	1"	2.09%	

ELECTRICAL HVAC FEEDER SCHEDULE

DESCRIPTION	FED FROM	DISCONNECT MEANS	CURRENT (FLA)	FEEDER					FEED VOLT DROP %	NOTES
				BREAKER / POLES	# OF SETS	WIRE	GROUND	EMT		
HVAC - ACCU-C15	LPC3	30/3 NEMA 3R NFD5	18 A	30 A / 2	1 SET	3 #6	#8 GND.	1"	2.36%	
HVAC - ACCU-C16	LPC3	60/3 NEMA 3R NFD5	30 A	45 A / 2	1 SET	3 #4	#4 GND.	1 1/4"	2.94%	
HVAC - ACCU-C19A	LPC3	30/3 NEMA 3R NFD5	18 A	30 A / 2	1 SET	3 #8	#8 GND.	3/4"	2.19%	
HVAC - ACCU-C19B	LPC3	30/3 NEMA 3R NFD5	18 A	30 A / 2	1 SET	3 #8	#8 GND.	3/4"	2.79%	
HVAC - ACCU-C21A	LPC3	60/3 NEMA 3R NFD5	30 A	45 A / 2	1 SET	3 #6	#8 GND.	1"	2.93%	
HVAC - ACCU-C21B	LPC3	60/3 NEMA 3R NFD5	30 A	45 A / 2	1 SET	3 #6	#8 GND.	1"	2.63%	
HVAC - ACCU-C21C	LPC3	60/3 NEMA 3R NFD5	30 A	45 A / 2	1 SET	3 #6	#8 GND.	1"	2.79%	
HVAC - ACCU-C23	LPC3	60/3 NEMA 3R NFD5	30 A	45 A / 2	1 SET	3 #6	#8 GND.	1"	1.45%	
HVAC - CR-D1	PPD1	30/3 NFD5	8 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.55%	
HVAC - CR-K1	KL	30/3 NFD5	8 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.10%	
HVAC - EF-A1	LPA2	30/3 NEMA 3R NFD5	7 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	0.64%	
HVAC - EF-B1	LPB1	30/3 NEMA 3R NFD5	7 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	0.62%	
HVAC - EF-C1	LPC2	30/3 NEMA 3R NFD5	7 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	0.61%	
HVAC - EF-K6	KM	30/3 NEMA 3R NFD5	7 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.41%	
HVAC - EF-K5	KM	30/3 NEMA 3R NFD5	7 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.50%	
HVAC - EF-M1	MM	30/3 NEMA 3R NFD5	7 A	20 A / 2	1 SET	3 #10	#10 GND.	3/4"	2.77%	
HVAC - EF-M2	MM	30/3 NEMA 3R NFD5	7 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	2.69%	
HVAC - HUV-170	LPA3	MANUFACTURER	6 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.40%	
HVAC - HUV-173	LPA3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.19%	
HVAC - HUV-179	LPA3	MANUFACTURER	6 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	2.01%	
HVAC - HUV-187	LPB3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.09%	
HVAC - HUV-188	LPB3	MANUFACTURER	6 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	2.00%	
HVAC - HUV-195	LPB3	MANUFACTURER	6 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.40%	
HVAC - HUV-203	LPC3	MANUFACTURER	6 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.43%	
HVAC - HUV-205	LPC3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.32%	
HVAC - HUV-212	LPC3	MANUFACTURER	6 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.96%	
HVAC - HUV-A10	LPA3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	0.51%	
HVAC - HUV-A12A	LPA3	MANUFACTURER	7 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.94%	
HVAC - HUV-A13	LPA3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.15%	
HVAC - HUV-A14A	LPA3	MANUFACTURER	7 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	2.69%	
HVAC - HUV-A15	LPA3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.34%	
HVAC - HUV-A16	LPA3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.52%	
HVAC - HUV-A17	LPA3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.69%	
HVAC - HUV-A18	LPA3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.46%	
HVAC - HUV-A19	LPA3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.32%	
HVAC - HUV-A20A	LPA3	MANUFACTURER	7 A	20 A / 2	1 SET	3 #10	#10 GND.	3/4"	1.18%	
HVAC - HUV-A21B	LPA3	MANUFACTURER	7 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.14%	
HVAC - HUV-B10	LPB3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	0.38%	
HVAC - HUV-B11	LPB3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	0.80%	
HVAC - HUV-B12	LPB3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	0.97%	
HVAC - HUV-B13	LPB3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.15%	
HVAC - HUV-B14	LPB3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.32%	
HVAC - HUV-B15	LPB3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.35%	
HVAC - HUV-B16	LPB3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.55%	
HVAC - HUV-B17	LPB3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.73%	
HVAC - HUV-B18	LPB3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.43%	
HVAC - HUV-B19	LPB3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.32%	
HVAC - HUV-B20	LPB3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	0.91%	
HVAC - HUV-B21	LPB3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	0.72%	
HVAC - HUV-B22	LPB3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	0.55%	
HVAC - HUV-B23	LPB3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	0.36%	
HVAC - HUV-C10A	LPC3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	0.94%	
HVAC - HUV-C10B	LPC3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	0.67%	
HVAC - HUV-C12	LPC3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	0.85%	
HVAC - HUV-C13	LPC3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.06%	
HVAC - HUV-C14	LPC3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.44%	
HVAC - HUV-C15	LPC3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.59%	
HVAC - HUV-C16	LPC3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.88%	
HVAC - HUV-C19A	LPC3	MANUFACTURER	7 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	2.75%	
HVAC - HUV-C21A	LPC3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.17%	
HVAC - HUV-C21B	LPC3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	1.03%	
HVAC - HUV-C21C	LPC3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	0.85%	
HVAC - HUV-C23	LPC3	MANUFACTURER	3 A	20 A / 2	1 SET	3 #12	#12 GND.	3/4"	0.53%	

ELECTRICAL PANEL FEEDER SCHEDULE

DESCRIPTION	FED FROM	CURRENT (FLA)	DEMAND (FLA)	FEEDER					FEED VOLT DROP %	NOTES
				BREAKER / POLES	# OF SETS	WIRE	GROUND	EMT		
480 V										
PPD3	PPDPA	80 A	80 A	400 A / 3	1 SET	3 #600 KCMIL	#3 GND.	3 1/2"		
208 V										
KM	MDPK2	207 A	207 A	300 A / 3	2 SETS	4 #250 KCMIL	#1 GND.	3"	1.89%	
LPA3	MDPD2	234 A	234 A	300 A / 3	2 SETS	4 #300 KCMIL	#1 GND.	3"	1.79%	
MDPD2	MDPD	694 A	694 A	800 A / 3	2 SETS	4 #600 KCMIL	#1/0 GND.	4"	0.68%	
MDPK2	MDPK	233 A	233 A	600 A / 3	2 SETS	4 #350 KCMIL	#1 GND.	3"	0.24%	
MM	MDPD2	235 A	235 A	300 A / 3	1 SET	4 #350 KCMIL	#4 GND.	3"	0.81%	

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ELECTRICAL FEEDER SCHEDULES

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E 405
21-807.00

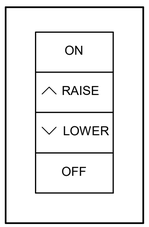
LIGHT FIXTURE SCHEDULE

TYPE	DESCRIPTION	MOUNTING	DRIVER	MANUFACTURER	NOTES
HA	1x4 WRAP	SURFACE	0-10V	KENALL #MLHA8-48-R-MW-PP-45L40K-120V-F5-PH	1, 2, 3
IA	INDUSTRIAL	SURFACE / CABLE	0-10V	LITHONIA #ZL1D-L48-5000LM-FST-MVOLT-40K-80CRI-WH	1, 2, 3
IB	INDUSTRIAL	SURFACE / CABLE	0-10V	LITHONIA #ZL1D-L48-7000LM-FST-MVOLT-40K-80CRI-WH	1, 2, 3
IC	INDUSTRIAL	SURFACE / CABLE	0-10V	LITHONIA #ZL1D-L24-2000LM-FST-MVOLT-40K-80CRI-WH	1, 2
RA	2x2 TROFFER	RECESSED	0-10V	FINELITE #HPR-A-2X2-DCO-B-840-120V-SC-C1	1, 2, 3
RB	2x2 TROFFER	RECESSED	0-10V	FINELITE #HPR-A-2X2-DCO-H-840-120V-SC-C1	1, 2, 3
RC	1x4 TROFFER	RECESSED	0-10V	FINELITE #HPR-A-1X4-DCO-B-840-120V-SC-C1	1, 2, 3
T	LED TRACK HEAD	TRACK	0-10V	JUNO #TL114-G2-(COLOR TEMP)-90CRI-NFL-(COLOR)	1, 2
TG	ARCHITECTURAL TRACK	SURFACE	0-10V	JUNO SINGLE CKT TRACK - 6'	1, 2
U	LED WALL PACK	WALLL		LITHONIA: # CSXWLED-1-30B530/40K-SR3-277-SF-DNAXD	1, 2, 3
X1	EXIT SIGN - SINGLE FACE	UNIVERSAL		LITHONIA #LQC-W-1-R	1, 2
X2	EXIT SIGN - DOUBLE FACE	UNIVERSAL		LITHONIA #LQC-W-2-R	1, 2

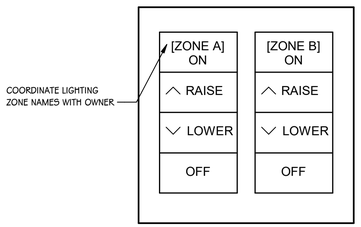
1 ALL LED FIXTURES TO HAVE WARRANTY TO MEET OR EXCEED WARRANTY INCLUDED IN BASIS OF DESIGN. FIXTURES LISTED AS EQUALS SHALL MEET DELIVERED LUMENS, CRI, EFFICACY AND OPTIONS OF THAT SPECIFIED. REFER TO SPECIFICATIONS 265100 AND 265600 FOR ADDITIONAL REQUIREMENTS.

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

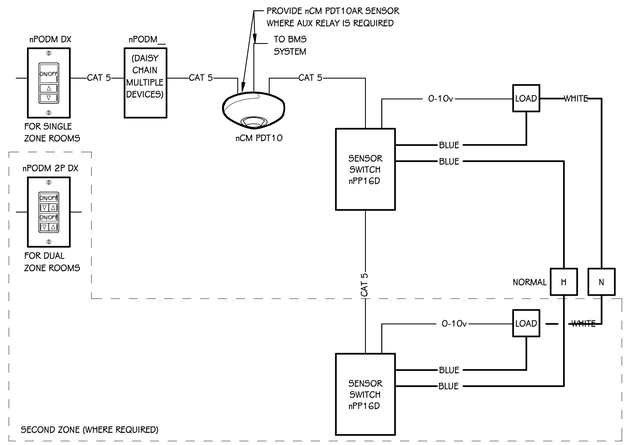
3 FIXTURES WITH THE CENTER CIRCLE SHADED SHALL BE CONNECTED TO EMERGENCY POWER. FIXTURES WITH CENTER CIRCLE SHADED THAT ARE SWITCHED SHALL BE PROVIDED WITH BODINE "ELD" TRANSFER DEVICE. FOR INDIVIDUAL FIXTURES DEVICE SHALL BE MOUNTED INTERNAL TO THE FIXTURE. PROVIDE LABEL ON INSIDE OF FIXTURE INDICATING FED FROM MULTIPLE CIRCUITS. WHERE DEVICE CANNOT BE MOUNTED INSIDE OF FIXTURE, MOUNT ADJACENT TO FIXTURE IN ACCESSIBLE CEILING SPACE.



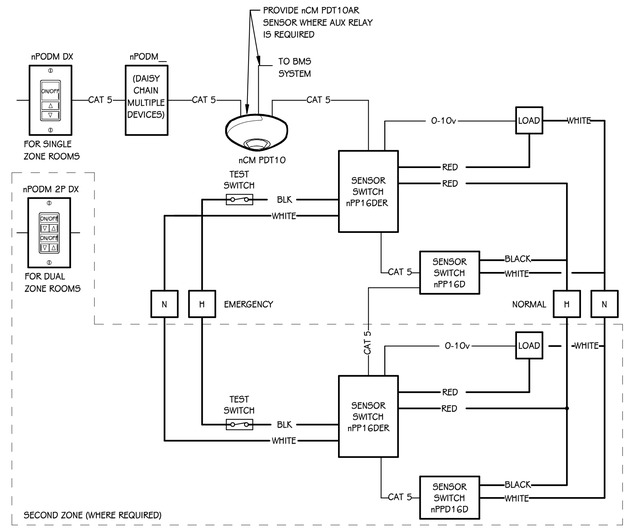
SINGLE ZONE
DIMMING CONTROLLER
SCALE: NONE



DUAL ZONE
DIMMING CONTROLLER
SCALE: NONE



OCCUPANCY SENSOR WIRING DIAGRAM
SCALE: NONE



EMERGENCY
OCCUPANCY SENSOR WIRING DIAGRAM
SCALE: NONE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ELECTRICAL LIGHTING DETAILS

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E 406
21-807.00

PANELBOARD " LPA3" LOAD SCHEDULE

PANEL: LPA3 **MOUNTING:** SURFACE **VOLTAGE:** 208/120V, 3PH, 4W
LOCATION: TUNNEL PLANS - UNIT A, B & C **AMPS:** 400 A MLO **FED FROM:** MDPD2
ADDED ACCESSORIES: DOUBLE TUB, SPD **FEED-THRU LUGS...** **A.I.C. VALUE:** 25 KAIC

	CIRCUIT DESCRIPTION	TRIP (A)	POLES	A (VA)		B (VA)		C (VA)		POLES	TRIP (A)	CIRCUIT DESCRIPTION	
1	RECEPTACLE - ROOF	20	1	900	1080					1	20	RECEPTACLE - ROOF	2
3	RECEPTACLE - ROOF	20	1			1080	348			2	20	HVAC - HUV-A10	4
5	HVAC - HUV-A12A	20	2					696	348	--	--	--	6
7	--	--	--	696	348					2	20	HVAC - HUV-A13	8
9	HVAC - HUV-A14A	20	2			696	348			--	--	--	10
11	--	--	--					696	348	2	20	HVAC - HUV-173	12
13	HVAC - HUV-A15	20	2	348	348					--	--	--	14
15	--	--	--			348	348			2	20	HVAC - HUV-A16	16
17	HVAC - HUV-A17	20	2					348	348	--	--	--	18
19	--	--	--	348	348					2	20	HVAC - HUV-A18	20
21	HVAC - HUV-A19	20	2			348	348			--	--	--	22
23	--	--	--					348	696	2	20	HVAC - HUV-A20A	24
25	HVAC - HUV-A21B	20	2	696	696					--	--	--	26
27	--	--	--			696	588			2	20	HVAC - HUV-170	28
29	HVAC - ACCU-A10	45	2					3000	588	--	--	--	30
31	--	--	--	3000	1914					2	30	HVAC - ACCU-A12A	32
33	HVAC - ACCU-A12B	30	2			1914	1914			--	--	--	34
35	--	--	--					1914	1321	2	20	HVAC - ACCU-170	36
37	HVAC - ACCU-A13	25	2	1540	1321					--	--	--	38
39	--	--	--			1540	1914			2	30	HVAC - ACCU-A14A	40
41	HVAC - ACCU-A14B	30	2					1914	1914	--	--	--	42
43	--	--	--	1914	1540					2	25	HVAC - ACCU-173	44
45	HVAC - ACCU-A15	30	2			1914	1540			--	--	--	46
47	--	--	--					1914	1914	2	30	HVAC - ACCU-A16	48
49	HVAC - ACCU-A17	45	2	3120	1914					--	--	--	50
51	--	--	--			3120	1914			2	30	HVAC - ACCU-A18	52
53	HVAC - ACCU-A19	30	2					1914	1914	--	--	--	54
55	--	--	--	1914	1540					2	25	HVAC - ACCU-179	56
57	HVAC - ACCU-A20B	25	2			1540	1540			--	--	--	58
59	--	--	--					1540	1540	2	25	HVAC - ACCU-A20A	60
61	HVAC - ACCU-A21B	25	2	1540	1540					--	--	--	62
63	--	--	--			1540	1540			2	25	HVAC - ACCU-A21A	64
65	HVAC - LIGHTS	20	1					620	1540	--	--	--	66
67	HVAC - HUV-179	20	2	588	0					2	30	SPARE	68
69	--	--	--			588	0			--	--	--	70
71	SPARE	30	2					0	0	1	20	SPARE	72
73	--	--	--	0	0					1	20	SPARE	74
75	SPARE	20	1			0	0			1	20	SPARE	76
77	SPARE	20	1					0	0	1	20	SPARE	78
79	SPARE	20	1	0	0					3	30	SPD	80
81	SPARE	20	1			0	0			--	--	--	82
83	SPARE	20	1					0	0	--	--	--	84
	TOTAL LOAD:			29189 VA		27661 VA		27370 VA					
	ADDITIONAL FEED THRU LUGS LOAD (IF APPLICABLE):			0 VA		0 VA		0 A					
	TOTAL AMPS:			244 A		231 A		228 A					

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
HVAC -	81159 VA	100.00%	81159 VA		
RECEPTACLE -	3060 VA	100.00%	3060 VA	**TOTAL CONNECTED LOAD:**	84219 VA
				TOTAL ESTIMATED DEMAND:	84219 VA
				TOTAL CONNECTED LOAD (A):	234 A
				TOTAL ESTIMATED DEMAND...	234 A

NOTES:

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

PANELBOARD "EXIST LPB3" LOAD SCHEDULE

PANEL: LPB3 **MOUNTING:** SURFACE **VOLTAGE:** 208/120V, 3PH, 4W
LOCATION: TUNNEL PLANS - UNIT A, B & C **AMPS:** 300 A MLO **FED FROM:** MDPD2
ADDED ACCESSORIES: DOUBLE TUB **FEED-THRU LUGS...** **A.I.C. VALUE:** MATCH EXISTING

	CIRCUIT DESCRIPTION	TRIP (A)	POLES	A (VA)		B (VA)		C (VA)		POLES	TRIP (A)	CIRCUIT DESCRIPTION	
1	RECEPTACLE - ROOF	20	1	1080	900					1	20	RECEPTACLE - ROOF	2
3	RECEPTACLE - ROOF	20	1			900	348			2	20	HVAC - HUV-B20	4
5	HVAC - HUV-B21	20	2					348	348	--	--	--	6
7	--	--	--	348	348					2	20	HVAC - HUV-B22	8
9	HVAC - HUV-B23	20	2			348	348			--	--	--	10
11	--	--	--					348	348	2	20	HVAC - HUV-B10	12
13	HVAC - HUV-B11	20	2	348	348					--	--	--	14
15	--	--	--			348	348			2	20	HVAC - HUV-B12	16
17	HVAC - HUV-B13	20	2					348	348	--	--	--	18
19	--	--	--	348	348					2	20	HVAC - HUV-B14	20
21	HVAC - HUV-187	20	2			348	348			--	--	--	22
23	--	--	--					348	348	2	20	HVAC - HUV-B15	24
25	HVAC - HUV-B16	20	2	348	348					--	--	--	26
27	--	--	--			348	348			2	20	HVAC - HUV-B17	28
29	HVAC - HUV-B18	20	2					348	348	--	--	--	30
31	--	--	--	348	348					2	20	HVAC - HUV-B19	32
33	HVAC - HUV-188	20	2			588	348			--	--	--	34
35	--	--	--					588	1914	2	30	HVAC - ACCU-B21	36
37	HVAC - HUV-195	20	2	588	1914					--	--	--	38
39	--	--	--			588	1914			2	30	HVAC - ACCU-B23	40
41	HVAC - ACCU-B20	45	2					3120	1914	--	--	--	42
43	--	--	--	3120	1540					2	25	HVAC - ACCU-B11	44
45	HVAC - ACCU-B22	30	2			1914	1540			--	--	--	46
47	--	--	--					1914	1540	2	25	HVAC - ACCU-B13	48
49	HVAC - ACCU-B10	30	2	1914	1540					--	--	--	50
51	--	--	--			1914	1914			2	30	HVAC - ACCU-B14	52
53	HVAC - ACCU-B12	30	2					1914	1914	--	--	--	54
55	--	--	--	1914	1914					2	30	HVAC - ACCU-B15	56
57	HVAC - ACCU-195	20	2			1321	1914			--	--	--	58
59	--	--	--					1321	3120	2	45	HVAC - ACCU-B17	60
61	HVAC - ACCU-187	25	2	1540	3120					--	--	--	62
63	--	--	--			1540	1914			2	30	HVAC - ACCU-B19	64
65	HVAC - ACCU-B16	25	2					1540	1914	--	--	--	66
67	--	--	--	1540	1540					2	25	HVAC - ACCU-188	68
69	HVAC - ACCU-B18	30	2			1914	1540			--	--	--	70
71	--	--	--					1914					72
73					620					1	20	HVAC - LIGHTS	74
75													76
77													78
79													80
81													82
83													84
	TOTAL LOAD:			28260 VA		24890 VA		28103 VA					
	ADDITIONAL FEED THRU LUGS LOAD (IF APPLICABLE):			0 VA		0 VA		0 A					
	TOTAL AMPS:			240 A		207 A		238 A					

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
HVAC -	78372 VA	100.00%	78372 VA		
RECEPTACLE -	2880 VA	100.00%	2880 VA	**TOTAL CONNECTED LOAD:**	81252 VA
				TOTAL ESTIMATED DEMAND:	81252 VA
				TOTAL CONNECTED LOAD (A):	226 A
				TOTAL ESTIMATED DEMAND...	226 A

NOTES:

PROVIDE NEW BREAKER IN EXISTING PANEL AS SHOWN. RECEPTACLE DEMAND FACTOR = FIRST 10kVA X 100% + 50% OF REMAINDER

PANELBOARD "EXIST KL" LOAD SCHEDULE

PANEL: KL **MOUNTING:** SURFACE **VOLTAGE:** 208/120V, 3PH, 4W
LOCATION: MECH. UNIT K / UNIT K - LOWER LEVEL **AMPS:** 400 A MLO **FED FROM:**
ADDED ACCESSORIES: **FEED-THRU LUGS...** **A.I.C. VALUE:** MATCH EXISTING

	CIRCUIT DESCRIPTION	TRIP (A)	POLES	A (VA)		B (VA)		C (VA)		POLES	TRIP (A)	CIRCUIT DESCRIPTION	
1	HVAC - VUV-K6	45	3	3194	3194					3	45	HVAC - VUV-K5W	2
3	--	--	--			3194	3194			--	--	--	4
5	--	--	--					3194	3194	--	--	--	6
7	CP-4K	15	3	1100	3194					3	45	HVAC - VUV-K4	8
9	--	--	--			1100	3194			--	--	--	10
11	--	--	--					1100	3194	--	--	--	12
13	HVAC - VUV-K5C	45	3	3194	3194					3	45	HVAC - VUV-K5E	14
15	--	--	--			3194	3194			--	--	--	16
17	--	--	--					3194	3194	--	--	--	18
19	SPARE	15	3	0	1100					3	15	EF-8K	20
21	--	--	--			0	1100			--	--	--	22
23	--	--	--					0	1100	--	--	--	24
25	SPARE	15	3	0	6000					3	100	ELEVATOR	26
27	--	--	--			0	6000			--	--	--	28
29	--	--	--					0	6000	--	--	--	30
31	HVAC - P-L1	20	1	1176	0					1	20	SPARE	32
33	HVAC - CR-K1	20	2			850	0			1	20	SPARE	34
35	--	--	--					850	0	1	20	SPARE	36
37	PANEL KA	60	3	2400	2400					3	60	PANEL KK	38
39	--	--	--			2400	2400			--	--	--	40
41	--	--	--					2400	2400	--	--	--	42
	TOTAL LOAD:			30148 VA		29822 VA		29822 VA					
	ADDITIONAL FEED THRU LUGS LOAD (IF APPLICABLE):			0 VA		0 VA		0 A					
	TOTAL AMPS:			251 A		249 A		249 A					

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
HVAC -	50791 VA	100.00%	50791 VA		
Spare	39000 VA	100.00%	39000 VA	**TOTAL CONNECTED LOAD:**	89791 VA
				TOTAL ESTIMATED DEMAND:	89791 VA
				TOTAL CONNECTED LOAD (A):	249 A
				TOTAL ESTIMATED DEMAND...	249 A

NOTES:

REMOVE FROM SCOPE OF WORK

PANELBOARD " MM" LOAD SCHEDULE

PANEL: MM **MOUNTING:** SURFACE **VOLTAGE:** 208/120V, 3PH, 4W
LOCATION: ELECTRICAL 28 / GROUND FLOOR "M" **AMPS:** 400 A MLO **FED FROM:** MDPD2
ADDED ACCESSORIES: SPD **FEED-THRU LUGS...** **A.I.C. VALUE:** 25 KAIC
(PROVIDE 25% HIGHER A.I.C. RATING)

	CIRCUIT DESCRIPTION	TRIP (A)	POLES	A		B		C		POLES	TRIP (A)	CIRCUIT DESCRIPTION	
1	HVAC - VUV-M3	30	3	2246	3194					3	45	HVAC - VUV-M1A	2
3	--	--	--			2246	3194			--	--	--	4
5	--	--	--					2246	3194	--	--	--	6
7	HVAC - VUV-M6	30	3	2246	2930					3	40	HVAC - VUV-M3A	8
9	--	--	--			2246	2930			--	--	--	10
11	--	--	--					2246	2930	--	--	--	12
13	HVAC - VUV-M3B	40	3	2930	2246					3	30	HVAC - VUV-M10	14
15	--	--	--			2930	2246			--	--	--	16
17	--	--	--					2930	2246	--	--	--	18
19	HVAC - VUV-M9	30	3	2246	2930					3	40	HVAC - VUV-M12A	20
21	--	--	--			2246	2930			--	--	--	22
23	--	--	--					2246	2930	--	--	--	24
25	HVAC - VUV-M12B	40	3	2930	2930					3	40	HVAC - VUV-M13	26
27	--	--	--			2930	2930			--	--	--	28
29	--	--	--					2930	2930	--	--	--	30
31	HVAC - EF-M2	20	2	725	725					2	20	HVAC - EF-M1	32
33	--	--	--			725	725			--	--	--	34
35	RECEPTACLE -	20	1					720	600	1	20	HVAC - TU	36
37	SPARE	20	1	0	0					1	20	SPARE	38
39	SPARE	20	1			0	0			1	20	SPARE	40
41	SPARE	20	1					0	0	1	20	SPARE	42
43	SPARE	20	1	0	0					1	20	SPARE	44
45	SPARE	20	1			0	0			1	20	SPARE	46
47	SPARE	20	1					0	0	1	20	SPARE	48
49					0					3	30	SPD	50
51						0				--	--	--	52
53								0		--	--	--	54
	TOTAL LOAD:			28279 VA		28279 VA		28149 VA					
	ADDITIONAL FEED THRU LUGS LOAD (IF APPLICABLE):			0 VA		0 VA		0 A					
	TOTAL AMPS:			236 A		236 A		235 A					

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
HVAC -	83986 VA	100.00%	83986 VA		
RECEPTACLE -	720 VA	100.00%	720 VA	**TOTAL CONNECTED LOAD:**	84706 VA
				TOTAL ESTIMATED DEMAND:	84706 VA
				TOTAL CONNECTED LOAD (A):	235 A
				TOTAL ESTIMATED DEMAND...	235 A

NOTES:

RECEPTACLE DEMAND FACTOR = FIRST 10kVA X 100% + 50% OF REMAINDER

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Addendum No. 2 December 16, 2022

ISSUED FOR **DATE**

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
ELECTRICAL PANEL LOAD SHEETS

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E 501
21-807.00

PANELBOARD "EXIST LPC3" LOAD SCHEDULE

PANEL: LPC3 **MOUNTING:** SURFACE **VOLTAGE:** 208/120V, 3PH, 4W
LOCATION: GROUND FLOOR "M" **AMPS:** 300 A MLO **FED FROM:** MDPK
ADDED ACCESSORIES: DOUBLE TUB **FEED-THRU LUGS...** **A.I.C. VALUE:** MATCH EXISTING

	CIRCUIT DESCRIPTION	TRIP (A)	POLES	A (VA)		B (VA)		C (VA)		POLES	TRIP (A)	CIRCUIT DESCRIPTION	
1													2
3							696			2	20	HVAC - HUV-C19A	4
5	HVAC - HUV-205	20	2					348	696	--	--	--	6
7	--	--	--	348	348					2	20	HVAC - HUV-C16	8
9	HVAC - HUV-C15	20	2			348	348			--	--	--	10
11	--	--	--					348	348	2	20	HVAC - HUV-C14	12
13	HVAC - HUV-C13	20	2	348	348					--	--	--	14
15	--	--	--			348	348			2	20	HVAC - HUV-C12	16
17	HVAC - HUV-C10A	20	2					348	348	--	--	--	18
19	--	--	--	348	348					2	20	HVAC - HUV-C23	20
21	HVAC - HUV-C21C	20	2			348	348			--	--	--	22
23	--	--	--					348	348	2	20	HVAC - HUV-C21B	24
25	HVAC - HUV-C21A	20	2	348	348					--	--	--	26
27	--	--	--			348	588			2	20	HVAC - HUV-212	28
29	HVAC - ACCU-C21A	45	2					3120	588	--	--	--	30
31	--	--	--	3120	620					1	20	HVAC - LIGHTS	32
33	HVAC - ACCU-C21C	45	2			3120	3120			2	45	HVAC - ACCU-C21B	34
35	--	--	--					3120	3120	--	--	--	36
37	HVAC - HUV-C10B	20	2	348	588					2	20	HVAC - HUV-203	38
39	--	--	--			348	588			--	--	--	40
41	HVAC - ACCU-C19B	30	2					1914	1914	2	30	HVAC - ACCU-C19A	42
43	--	--	--	1914	1914					--	--	--	44
45	HVAC - ACCU-205	25	2			1540	1321			2	20	HVAC - ACCU-203	46
47	--	--	--					1540	1321	--	--	--	48
49	HVAC - ACCU-C15	30	2	1914	3120					2	45	HVAC - ACCU-C16	50
51	--	--	--			1914	3120			--	--	--	52
53	HVAC - ACCU-C13	45	2					3120	1914	2	30	HVAC - ACCU-C14	54
55	--	--	--	3120	1914					--	--	--	56
57	HVAC - ACCU-C10B	30	2						1914	--	--	--	58
59	--	--	--					1914	1914	--	--	--	60
61	HVAC - ACCU-C23	45	2							2	30	HVAC - ACCU-C10A	62
63	--	--	--			3120	1914			--	--	--	64
65									1540	2	25	HVAC - ACCU-212	66
67					1540					--	--	--	68
69													70
71													72
73													74
75													76
77													78
79													80
81													82
83													84

TOTAL LOAD: 27927 VA 27651 VA 30168 VA
ADDITIONAL FEED THRU LUGS LOAD (IF APPLICABLE): 0 VA 0 VA 0 A
TOTAL AMPS: 233 A 230 A 252 A

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
HVAC -	85745 VA	100.00%	85745 VA		
				TOTAL CONNECTED LOAD:	85745 VA
				TOTAL ESTIMATED DEMAND:	85745 VA
				TOTAL CONNECTED LOAD (A):	238 A
				TOTAL ESTIMATED DEMAND...	238 A

NOTES:

PROVIDE NEW BREAKER IN EXISTING PANEL AS SHOWN. RECEPTACLE DEMAND FACTOR = FIRST 10kVA X 100% + 50% OF REMAINDER

REMOVE FROM SCOPE OF WORK

PANELBOARD " PPD3" LOAD SCHEDULE

PANEL: PPD3 **MOUNTING:** SURFACE **VOLTAGE:** 480V, 3PH, 3W
LOCATION: GROUND FLOOR "M" **AMPS:** 400 A MLO **FED FROM:** PPDPA
ADDED ACCESSORIES: DOUBLE TUB, SPD **FEED-THRU LUGS...** **A.I.C. VALUE:** 65 KAIC
(PROVIDE 25% HIGHER A.I.C. RATING)

	CIRCUIT DESCRIPTION	TRIP (A)	POLES	A		B		C		POLES	TRIP (A)	CIRCUIT DESCRIPTION	
1	SPARE	20	3							3	20	SPARE	2
3	--	--	--							--	--	--	4
5	--	--	--							--	--	--	6
7	SPARE	20	3		2106					3	15	HVAC - AHU-A1	8
9	--	--	--				2106			--	--	--	10
11	--	--	--						2106	--	--	--	12
13	HVAC - AHU-B1	15	3	2104						3	15	SPARE	14
15	--	--	--			2104				--	--	--	16
17	--	--	--					2104		--	--	--	18
19	HVAC - ACCU-A1	25	3	5333	4878					3	25	HVAC - ACCU-B1	20
21	--	--	--			5333	4878			--	--	--	22
23	--	--	--					5333	4878	--	--	--	24
25	SPARE	20	3							3	25	SPARE	26
27	--	--	--							--	--	--	28
29	--	--	--							--	--	--	30
31	SPARE	20	3		3878					3	20	HVAC - P-D2	32
33	--	--	--				3878			--	--	--	34
35	--	--	--						3878	--	--	--	36
37	SPARE	20	3							3	20	SPARE	38
39	--	--	--							--	--	--	40
41	--	--	--							--	--	--	42
43	SPARE	20	3							3	20	SPARE	44
45	--	--	--							--	--	--	46
47	--	--	--							--	--	--	48
49	SPARE	20	3							3	20	SPARE	50
51	--	--	--							--	--	--	52
53	--	--	--							--	--	--	54
55	HVAC - P-D1	20	3	3878						3	20	SPARE	56
57	--	--	--			3878				--	--	--	58
59	--	--	--					3878		--	--	--	60
61	SPARE	20	3							3	20	SPARE	62
63	--	--	--							--	--	--	64
65	--	--	--							--	--	--	66
67	SPARE	20	3	0	0					3	20	SPARE	68
69	--	--	--			0	0			--	--	--	70
71	--	--	--					0	0	--	--	--	72
73	SPARE	20	3	0	0					3	20	SPARE	74
75	--	--	--			0	0			--	--	--	76
77	--	--	--					0	0	--	--	--	78
79					0					3	30	SPD	80
81						0				--	--	--	82
83									0	--	--	--	84

TOTAL LOAD: 22177 VA 22177 VA 22177 VA
ADDITIONAL FEED THRU LUGS LOAD (IF APPLICABLE): 0 VA 0 VA 0 A
TOTAL AMPS: 80 A 80 A 80 A

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
HVAC -	66531 VA	100.00%	66531 VA		
				TOTAL CONNECTED LOAD:	66531 VA
				TOTAL ESTIMATED DEMAND:	66531 VA
				TOTAL CONNECTED LOAD (A):	80 A
				TOTAL ESTIMATED DEMAND...	80 A

NOTES:

PROVIDE SPD BREAKER PER ONELINE SCHEDULE. RECEPTACLE DEMAND FACTOR = FIRST 10kVA X 100% + 50% OF REMAINDER
AIC RATING IS CALCULATED VALUE, PROVIDE IC RATING AT LEAST 25% HIGHER AS PER SPECIFICATIONS.

PANELBOARD " KM" LOAD SCHEDULE

PANEL: KM **MOUNTING:** SURFACE **VOLTAGE:** 208/120V, 3PH, 4W
LOCATION: JAN. 308 / FIRST FLOOR - UNIT D, K... **AMPS:** 400 A MLO **FED FROM:** MDPK2
ADDED ACCESSORIES: SPD **FEED-THRU LUGS...** **A.I.C. VALUE:** 25 KAIC

	CIRCUIT DESCRIPTION	TRIP (A)	POLES	A		B		C		POLES	TRIP (A)	CIRCUIT DESCRIPTION	
1	HVAC - VUV-K14	30	3	2124	2124					3	30	HVAC - VUV-324	2
3	--	--	--			2124	2124			--	--	--	4
5	--	--	--					2124	2124	--	--	--	6
7	HVAC - VUV-K12	30	3	2124	2124					3	30	HVAC - VUV-K13	8
9	--	--	--			2124	2124			--	--	--	10
11	--	--	--					2124	2124	--	--	--	12
13	HVAC - VUV-K16	30	3	2124	2124					3	30	HVAC - VUV-K15	14
15	--	--	--			2124	2124			--	--	--	16
17	--	--	--					2124	2124	--	--	--	18
19	HVAC - VUV-K17	45	3	3194	2124					3	30	HVAC - VUV-K11	20
21	--	--	--			3194	2124			--	--	--	22
23	--	--	--					3194	2124	--	--	--	24
25	HVAC - VUV-421	45	3	3194	2124					3	30	HVAC - VUV-313	26
27	--	--	--			3194	2124			--	--	--	28
29	--	--	--					3194	2124	--	--	--	30
31	RECEPTACLE - ROOF	20	1	720	720					1	20	RECEPTACLE - ROOF	32
33	HVAC - EF-K8	20	2			725	725			2	20	HVAC - EF-K6	34
35	--	--	--					725	725	--	--	--	36
37	SPARE	20	1	0	0					3	30	SPD	38
39	SPARE	20	1			0	0			--	--	--	40
41	SPARE	20	1					0	0	--	--	--	42

TOTAL LOAD: 24823 VA 24833 VA 24833 VA
ADDITIONAL FEED THRU LUGS LOAD (IF APPLICABLE): 0 VA 0 VA 0 A
TOTAL AMPS: 207 A 207 A 207 A

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
HVAC -	73050 VA	100.00%	73050 VA		
RECEPTACLE -	1440 VA	100.00%	1440 VA		
				TOTAL CONNECTED LOAD:	74490 VA
				TOTAL ESTIMATED DEMAND:	74490 VA
				TOTAL CONNECTED LOAD (A):	207 A
				TOTAL ESTIMATED DEMAND...	207 A

NOTES:

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

REMOVE FROM SCOPE OF WORK

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ELECTRICAL PANEL LOAD SHEETS

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E 502
21-807.00

PANELBOARD " TPK" LOAD SCHEDULE

PANEL: TPK **MOUNTING:** SURFACE **VOLTAGE:** 208/120V, 3PH, 4W
LOCATION: JAN. 37 / UNIT K - LOWER LEVEL **AMPS:** 225 A MLO **FED FROM:**
ADDED ACCESSORIES: SPD **FEED-THRU LUGS...** **A.I.C. VALUE:** 10 KAIC

	CIRCUIT DESCRIPTION	TRIP (A)	POLES	A		B		C		POLES	TRIP (A)	CIRCUIT DESCRIPTION	
1	SPARE	20	1	0	0					1	20	WIREMOLD K-6	2
3	SPARE	20	1			0	0			1	20	WIREMOLD K-6	4
5	WIREMOLD K-2, OVERHEAD	20	1					0	0	1	20	WIREMOLD/PRINTER K-5 EAST	6
7	WIREMOLD K-2	20	1	0	0					1	20	PLUG STRIP K-5 WEST/CENTER	8
9	WIREMOLD K-3	20	1			0	0			1	20	WIREMOLD K-5 WEST	10
11	WIREMOLD K-3	20	1					0	0	1	20	D014 WIREMOLD/PROJECTOR	12
13	PROJECTOR K-4	20	1	0	0					1	20	SPARE	14
15	WIREMOLD/PRINTER K-4	20	1			0	0			1	20	WIREMOLD/FURNITURE K-4	16
17	LIGHTS K-4 - K-5 WEST	20	1					0	0	1	20	WIREMOLD/FURNITURE K-4	18
19	SPARE	20		0	0					1	20	WIREMOLD/FURNITURE K-4	20
21	WIREMOLD/PROJECTOR K-5 CENTER	20	1			0	0			1	20	WIREMOLD/FURNITURE K-4	22
23	WIREMOLD/PROJECTOR K-5 EAST	20	1					0	0	1	20	WIREMOLD/FURNITURE K-4	24
25	POWER POLE K-5 EAST	20	1	0	0					1	20	WIREMOLD/FURNITURE K-4	26
27	LIGHTING - Room K-6	20	1			444	0			1	20	WIREMOLD/FURNITURE K-4	28
29	LIGHTING - K-1, K-6, K, K-2	20	1					1487	0	1	20	WIREMOLD/FURNITURE K-4	30
31	LIGHTING - 36, 32, 38, K-3, 37, 39	20	1	1779	0					1	20	WIREMOLD/PRINTER K-5 WEST	32
33	SPARE	20	1			0				1	20	SPARE	34
35	SPARE	20	1						0	1	20	SPARE	36
37	POWER POLE K-5 CENTER	20	3	0	0					3	20	POWER POLE K-5 WEST	38
39	--	--	--			0	0			--	--	--	40
41	--	--	--					0	0	--	--	--	42
43	POWER POLE K-5 CENTER	20	3	0	0					3	20	POWER POLE K-5 WEST	44
45	--	--	--			0	0			--	--	--	46
47	--	--	--					0	0	--	--	--	48
49	POWER POLE K-5 EAST	20	3	0	0					3	20	POWER POLE K-5 WEST	50
51	--	--	--			0	0			--	--	--	52
53	--	--	--					0	0	--	--	--	54
55	POWER POLE K-5 EAST	20	3	0	0					3	20	POWER POLE K-5 WEST	56
57	--	--	--			0	0			--	--	--	58
59	--	--	--					0	0	--	--	--	60
61	POWER POLE K-5 EAST	20	3	0	0					3	20	POWER POLE K-5 CENTER	62
63	--	--	--			0	0			--	--	--	64
65	--	--	--					0	0	--	--	--	66
67	POWER POLE K-5 EAST	20	3	0	0					3	20	POWER POLE K-5 CENTER	68
69	--	--	--			0	0			--	--	--	70
71	--	--	--					0	0	--	--	--	72

TOTAL LOAD: 1779 VA 444 VA 1487 VA
ADDITIONAL FEED THRU LUGS LOAD (IF APPLICABLE): 0 VA 0 VA 0 A
TOTAL AMPS: 16 A 4 A 14 A

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
LIGHTING -	3708 VA	100.00%	3708 VA		
				TOTAL CONNECTED LOAD:	3708 VA
				TOTAL ESTIMATED DEMAND:	3708 VA
				TOTAL CONNECTED LOAD (A):	10 A
				TOTAL ESTIMATED DEMAND...	10 A

NOTES:

RECEPTACLE DEMAND FACTOR = FIRST 10kVA X 100% + 50% OF REMAINDER

PANELBOARD "EXIST EK" LOAD SCHEDULE

PANEL: EK **MOUNTING:** SURFACE **VOLTAGE:** 208/120V, 3PH, 4W
LOCATION: MECH. UNIT K / GROUND FLOOR "M" **AMPS:** 100 A MLO **FED FROM:**
ADDED ACCESSORIES: SPD **FEED-THRU LUGS...** **A.I.C. VALUE:** MATCH EXISTING

	CIRCUIT DESCRIPTION	TRIP (A)	POLES	A (VA)		B (VA)		C (VA)		POLES	TRIP (A)	CIRCUIT DESCRIPTION	
1	K-WING EXIT SIGNS	30	1	0	1295					1	20	EM LIGHTING - COMMONS --	2
3	EM LIGHTING - UNIT K LOWER LEVEL	40	1			1539	0			1	20	FIRE PANEL MAIN OFFICE	4
5	EM LIGHTING - UNIT K UPPER LEVEL	20	1					1147	0	1	20	SPARE	6
7	ELEVATOR LIGHTS	30	1	0	0					1	30	HAVEL BROS EMERGENCY PANEL	8
9	EM LIGHTING - UNIT K UPPER LEVEL	20	1			781	0			1	20	SPARE	10
11	SPACE	--	1					--	0	1	20	SPARE	12
13	SPACE	--	1	--	--					1	--	SPACE	14
15	SPACE	--	1			--	--			1	--	SPACE	16
17	SPACE	--	1					--	--	1	--	SPACE	18
19	SPACE	--	1	--	--					1	--	SPACE	20

TOTAL LOAD: 1295 VA 2320 VA 1147 VA
ADDITIONAL FEED THRU LUGS LOAD (IF APPLICABLE): 0 VA 0 VA 0 A
TOTAL AMPS: 11 A 20 A 10 A

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
LIGHTING -	448 VA	100.00%	448 VA		
EM LIGHTING -	4314 VA	100.00%	4314 VA	**TOTAL CONNECTED LOAD:**	4762 VA
				TOTAL ESTIMATED DEMAND:	4762 VA
				TOTAL CONNECTED LOAD (A):	13 A
				TOTAL ESTIMATED DEMAND...	13 A

NOTES:

RECEPTACLE DEMAND FACTOR = FIRST 10kVA X 100% + 50% OF REMAINDER

OMIT ALL WORK ON THIS SHEET

PANELBOARD " KG" LOAD SCHEDULE

PANEL: KG **MOUNTING:** FLUSH **VOLTAGE:** 120/208V, 1PH, 3W
LOCATION: STORAGE 328 / FIRST FLOOR - UNIT D... **AMPS:** 225 A MLO **FED FROM:**
ADDED ACCESSORIES: SPD **FEED-THRU LUGS...** **A.I.C. VALUE:** MATCH EXISTING

	CIRCUIT DESCRIPTION	TRIP (A)	POLES	A (VA)		B (VA)		POLES	TRIP (A)	CIRCUIT DESCRIPTION	
1	EM LIGHTING - COMMONS --	20	1	1184	1295			1	20	LIGHTING - WORK ROOM 325	2
3											4
5											6
7											8
9											10
11											12
13											14
15											16
17											18
19											20
21											22
23											24
25											26
27											28
29											30
31											32
33											34
35											36
37											38
39											40
41											42

TOTAL LOAD: 2479 VA 0 VA
ADDITIONAL FEED THRU LUGS LOAD (IF APPLICABLE): 0 VA 0 VA
TOTAL AMPS: 21 A 0 A

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
LIGHTING -	2479 VA	100.00%	2479 VA		
				TOTAL CONNECTED LOAD:	2479 VA
				TOTAL ESTIMATED DEMAND:	2479 VA
				TOTAL CONNECTED LOAD (A):	12 A
				TOTAL ESTIMATED DEMAND...	12 A

NOTES:

PANELBOARD " KH" LOAD SCHEDULE

PANEL: KH **MOUNTING:** FLU **VOLTAGE:** 208/120V, 3PH, 4W
LOCATION: JAN. 320 / FIRST FLOOR - UNIT D, K,... **AMPS:** 225 A MLO **FED FROM:**
ADDED ACCESSORIES: SPD **FEED-THRU LUGS...** **A.I.C. VALUE:** MATCH EXISTING

	CIRCUIT DESCRIPTION	TRIP (A)	POLES	A (VA)		B (VA)		C (VA)		POLES	TRIP (A)	CIRCUIT DESCRIPTION	
1	EM LIGHTING - CLASSROOM K-15	20	1	1184	1258					1		LIGHTING - PROJECTS ROOM 318	2
3													4
5													6
7													8
9													10
11													12
13													14
15													16
17													18
19													20
21													22
23													24
25													26
27													28
29													30
31													32
33													34
35													36
37													38
39													40
41													42

TOTAL LOAD: 2442 VA 0 VA 0 VA
ADDITIONAL FEED THRU LUGS LOAD (IF APPLICABLE): 0 VA 0 VA 0 A
TOTAL AMPS: 20 A 0 A 0 A

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
LIGHTING -	2442 VA	100.00%	2442 VA		
				TOTAL CONNECTED LOAD:	2442 VA
				TOTAL ESTIMATED DEMAND:	2442 VA
				TOTAL CONNECTED LOAD (A):	7 A
				TOTAL ESTIMATED DEMAND...	7 A

NOTES:

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ELECTRICAL PANEL LOAD SHEETS

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E 503
21-807.00

PANELBOARD " KD" LOAD SCHEDULE

PANEL: KD **MOUNTING:** FLUSH **VOLTAGE:** 120/208V, 1PH, 3W
LOCATION: OFFICE 312 / FIRST FLOOR - UNIT D, K... **AMPS:** 225 A MLO **FED FROM:**
ADDED ACCESSORIES: SPD **FEED-THRU LUGS...** **A.I.C. VALUE:** MATCH EXISTING

	CIRCUIT DESCRIPTION	TRIP (A)	POLES	A (VA)		B (VA)		POLES	TRIP (A)	CIRCUIT DESCRIPTION	
1	EM LIGHTING - CORRIDOR	20	1	1184	1295			1	20	EM LIGHTING - CLASSROOM K-16	2
3	LIGHTING - STAIR 347	20	1			925	851	1	20	LIGHTING - OFFICE 288	4
5											6
7											8
9											10
11											12
13											14
15											16
17											18
19											20
21											22
23											24
25											26
27											28
29											30
31											32
33											34
35											36
37											38
39											40
41											42

TOTAL LOAD: 2479 VA 1776 VA
ADDITIONAL FEED THRU LUGS LOAD (IF APPLICABLE): 0 VA 0 VA
TOTAL AMPS: 23 A 17 A

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
LIGHTING -	4255 VA	100.00%	4255 VA		
				TOTAL CONNECTED LOAD:	4255 VA
				TOTAL ESTIMATED DEMAND:	4255 VA
				TOTAL CONNECTED LOAD (A):	20 A
				TOTAL ESTIMATED DEMAND...	20 A

NOTES:

PANELBOARD " KF" LOAD SCHEDULE

PANEL: KF **MOUNTING:** FLUSH **VOLTAGE:** 208/120V, 3PH, 4W
LOCATION: BREAK ROOM 296 / FIRST FLOOR -... **AMPS:** 100 A MB **FED FROM:**
ADDED ACCESSORIES: SPD **FEED-THRU LUGS...** **A.I.C. VALUE:** MATCH EXISTING

	CIRCUIT DESCRIPTION	TRIP (A)	POLES	A (VA)		B (VA)		C (VA)		POLES	TRIP (A)	CIRCUIT DESCRIPTION	
1	POWER - AHU LIGHTS	20	1	0	0					3	20	EXISTING	2
3	RECEPTACLE - MECH ROOM	20	1			0	0			--	--	--	4
5	HVAC - MECHANICAL MEZZANINE 319	20	1					0	0	--	--	--	6
7	EM LIGHTING - WORK ROOM 420	20	1	1110	--					1	--	SPACE	8
9	EXISTING	20	1			0	--			1	--	SPACE	10
11	EXISTING	20	1					0	--	1	--	SPACE	12
13	MAIN BREAKER	100	3	0	--					1	--	SPACE	14
15	--	--	--			0	--			1	--	SPACE	16
17	--	--	--					0	--	1	--	SPACE	18
19	LIGHTING - VAULT 422	20	1	1184	1110					1	20	LIGHTING - WOMENS 307	20
21	LIGHTING - CORRIDOR 302	20	1			1221							22
23													24
25													26
27													28
29													30
31													32
33													34
35													36
37													38
39													40
41													42

TOTAL LOAD: 3404 VA 1221 VA 0 VA
ADDITIONAL FEED THRU LUGS LOAD (IF APPLICABLE): 0 VA 0 VA 0 A
TOTAL AMPS: 30 A 12 A 0 A

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
LIGHTING -	4625 VA	100.00%	4625 VA		
				TOTAL CONNECTED LOAD:	4625 VA
				TOTAL ESTIMATED DEMAND:	4625 VA
				TOTAL CONNECTED LOAD (A):	13 A
				TOTAL ESTIMATED DEMAND...	13 A

NOTES:

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PANELBOARD " EMM" LOAD SCHEDULE

PANEL: EMM **MOUNTING:** FLUSH **VOLTAGE:** 208/120V, 3PH, 4W
LOCATION: Space 364 / GROUND FLOOR "M" **AMPS:** 100 A MLO **FED FROM:**
ADDED ACCESSORIES: SPD **FEED-THRU LUGS...** **A.I.C. VALUE:** MTCH EXISTING

	CIRCUIT DESCRIPTION	TRIP (A)	POLES	A (VA)		B (VA)		C (VA)		POLES	TRIP (A)	CIRCUIT DESCRIPTION	
1	EM LIGHTING -	20	1	1219	0					1	20	SPARE	2
3	SPARE	20	1			0	--			1	--	SPACE	4
5	SPARE	20	1					0	--	1	--	SPACE	6
7	EM LIGHTING -	20	1	1218	--					1	--	SPACE	8
9	EM LIGHTING - CORRIDOR 223	20	1			1800	--			1	--	SPACE	10
11	EM LIGHTING - LOCKER RM 142	20	1					928	--	1	--	SPACE	12

TOTAL LOAD: 2437 VA 1800 VA 928 VA
ADDITIONAL FEED THRU LUGS LOAD (IF APPLICABLE): 0 VA 0 VA 0 A
TOTAL AMPS: 21 A 16 A 8 A

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
LIGHTING -	704 VA	100.00%	704 VA		
EM LIGHTING -	4461 VA	100.00%	4461 VA		
				TOTAL CONNECTED LOAD:	5165 VA
				TOTAL ESTIMATED DEMAND:	5165 VA
				TOTAL CONNECTED LOAD (A):	14 A
				TOTAL ESTIMATED DEMAND...	14 A

NOTES:

PANELBOARD " MB" LOAD SCHEDULE

PANEL: MB **MOUNTING:** FLUSH **VOLTAGE:** 120/208V, 1PH, 3W
LOCATION: CORRIDOR ... M / GROUND FLOOR... **AMPS:** 225 A MLO **FED FROM:**
ADDED ACCESSORIES: SPD **FEED-THRU LUGS...** **A.I.C. VALUE:** MATCH EXISTING

	CIRCUIT DESCRIPTION	TRIP (A)	POLES	A (VA)		B (VA)		POLES	TRIP (A)	CIRCUIT DESCRIPTION	
1	LIGHTING - Room M-1, 8, 7, 6	20	1	1184							2
3	LIGHTING - WELDING AND FOUNDRY M-2	20				928					4
5	LIGHTING - Room 3	20	1	888							6
7											8
9											10
11											12
13											14
15											16
17											18
19											20
21											22
23											24
25											26
27											28
29											30
31											32
33											34
35											36
37											38
39											40
41											42

TOTAL LOAD: 2072 VA 928 VA
ADDITIONAL FEED THRU LUGS LOAD (IF APPLICABLE): 0 VA 0 VA
TOTAL AMPS: 18 A 9 A

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
LIGHTING -	3000 VA	100.00%	3000 VA		
				TOTAL CONNECTED LOAD:	3000 VA
				TOTAL ESTIMATED DEMAND:	3000 VA
				TOTAL CONNECTED LOAD (A):	14 A
				TOTAL ESTIMATED DEMAND...	14 A

NOTES:

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

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LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ELECTRICAL PANEL LOAD SHEETS

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E 504
21-807.00

PANELBOARD " MD" LOAD SCHEDULE

PANEL: MD — **MOUNTING:** FLUSH — **VOLTAGE:** 120/208V, 1PH, 3W
LOCATION: AUTO POWER M-6 / GROUND FLOOR... — **AMPS:** 225 A MLO — **FED FROM:**
ADDED ACCESSORIES: SPD — **FEED-THRU LUGS...** — **A.I.C. VALUE:** MATCH EXISTING

	CIRCUIT DESCRIPTION	TRIP (A)	POLES	A (VA)		B (VA)		POLES	TRIP (A)	CIRCUIT DESCRIPTION	
1	LIGHTING -	20	1	1280	1152			1	20	EM LIGHTING - EQUIP. ROOM 1	2
3	LIGHTING -	20	1			1558					4
5											6
7											8
9											10
11											12
13											14
15											16
17											18
19											20
21											22
23											24
25											26
27											28
29											30
31											32
33											34
35											36
37											38
39											40
41											42

TOTAL LOAD: 2432 VA — 1558 VA
ADDITIONAL FEED THRU LUGS LOAD (IF APPLICABLE): 0 VA — 0 VA
TOTAL AMPS: 22 A — 15 A

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
LIGHTING -	3990 VA	100.00%	3990 VA		
				TOTAL CONNECTED LOAD:	3990 VA
				TOTAL ESTIMATED DEMAND:	3990 VA
				TOTAL CONNECTED LOAD (A):	19 A
				TOTAL ESTIMATED DEMAND...	19 A

NOTES:

PANELBOARD " MC" LOAD SCHEDULE

PANEL: MC — **MOUNTING:** FLUSH — **VOLTAGE:** 120/208V, 1PH, 3W
LOCATION: AUTO POWER M-6 / GROUND FLOOR... — **AMPS:** 225 A MLO — **FED FROM:**
ADDED ACCESSORIES: SPD — **FEED-THRU LUGS...** — **A.I.C. VALUE:** MATCH EXISTING

	CIRCUIT DESCRIPTION	TRIP (A)	POLES	A (VA)		B (VA)		POLES	TRIP (A)	CIRCUIT DESCRIPTION	
1	LIGHTING - AUTO POWER M-6	20	1	1568	512			1	20	EM LIGHTING - Space 357	2
3											4
5											6
7											8
9											10
11											12
13											14
15											16
17											18
19											20
21											22
23											24
25											26
27											28
29											30
31											32
33											34
35											36
37											38
39											40
41											42

TOTAL LOAD: 2080 VA — 0 VA
ADDITIONAL FEED THRU LUGS LOAD (IF APPLICABLE): 0 VA — 0 VA
TOTAL AMPS: 17 A — 0 A

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
LIGHTING -	2080 VA	100.00%	2080 VA		
				TOTAL CONNECTED LOAD:	2080 VA
				TOTAL ESTIMATED DEMAND:	2080 VA
				TOTAL CONNECTED LOAD (A):	10 A
				TOTAL ESTIMATED DEMAND...	10 A

NOTES:

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PANELBOARD " MJ" LOAD SCHEDULE

PANEL: MJ — **MOUNTING:** FLUSH — **VOLTAGE:** 120/208V, 1PH, 3W
LOCATION: Space 12 / FIRST FLOOR - UNIT D, K,... — **AMPS:** 225 A MLO — **FED FROM:**
ADDED ACCESSORIES: SPD — **FEED-THRU LUGS...** — **A.I.C. VALUE:** MATCH EXISTING

	CIRCUIT DESCRIPTION	TRIP (A)	POLES	A (VA)		B (VA)		POLES	TRIP (A)	CIRCUIT DESCRIPTION	
1	LIGHTING - CLASSROOM M-10	20	1	1221	1591			1	20	LIGHTING - CORRIDOR 223	2
3	LIGHTING - CLASSROOM M-12 EAST	20	1			1067					4
5											6
7											8
9											10
11											12
13											14
15											16
17											18
19											20
21											22
23											24
25											26
27											28
29											30
31											32
33											34
35											36
37											38
39											40
41											42

TOTAL LOAD: 2812 VA — 1067 VA
ADDITIONAL FEED THRU LUGS LOAD (IF APPLICABLE): 0 VA — 0 VA
TOTAL AMPS: 25 A — 10 A

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
LIGHTING -	3879 VA	100.00%	3879 VA		
				TOTAL CONNECTED LOAD:	3879 VA
				TOTAL ESTIMATED DEMAND:	3879 VA
				TOTAL CONNECTED LOAD (A):	19 A
				TOTAL ESTIMATED DEMAND...	19 A

NOTES:

PANELBOARD " ML" LOAD SCHEDULE

PANEL: — **MOUNTING:** FLUSH — **VOLTAGE:** 120/208V, 1PH, 3W
LOCATION: CO...OR 222 / FIRST FLOOR - UNIT ... — **AMPS:** 225 A MLO — **FED FROM:**
ADDED ACCESSORIES: SPD — **FEED-THRU LUGS...** — **A.I.C. VALUE:** MATCH EXISTING

	CIRCUIT DESCRIPTION	TRIP (A)	POLES	A (VA)		B (VA)		POLES	TRIP (A)	CIRCUIT DESCRIPTION	
1	LIGHTING - CLASSROOM-1 M-13-1	20	1	1221	1312			1	20	LIGHTING - CORRIDOR 147	2
3	LIGHTING - TOOLS 150		1			544					4
5											6
7											8
9											10
11											12
13											14
15											16
17											18
19											20
21											22
23											24
25											26
27											28
29											30
31											32
33											34
35											36
37											38
39											40
41											42

TOTAL LOAD: 2533 VA — 544 VA
ADDITIONAL FEED THRU LUGS LOAD (IF APPLICABLE): 0 VA — 0 VA
TOTAL AMPS: 22 A — 5 A

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
LIGHTING -	3077 VA	100.00%	3077 VA		
				TOTAL CONNECTED LOAD:	3077 VA
				TOTAL ESTIMATED DEMAND:	3077 VA
				TOTAL CONNECTED LOAD (A):	15 A
				TOTAL ESTIMATED DEMAND...	15 A

NOTES:

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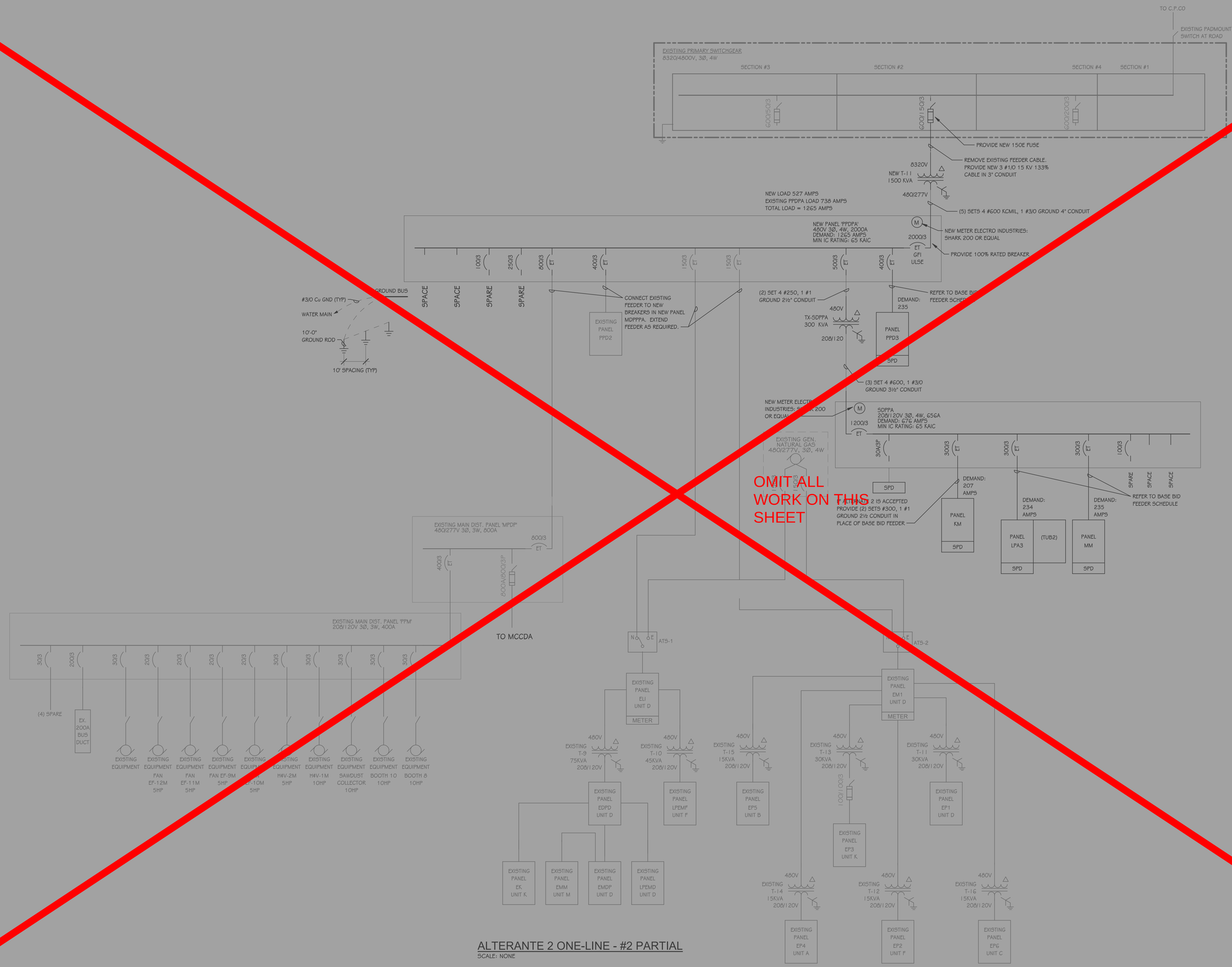
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ELECTRICAL PANEL LOAD SHEETS

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E 505
21-807.00



ALTERANTE 2 ONE-LINE - #2 PARTIAL

SCALE: NONE

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LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

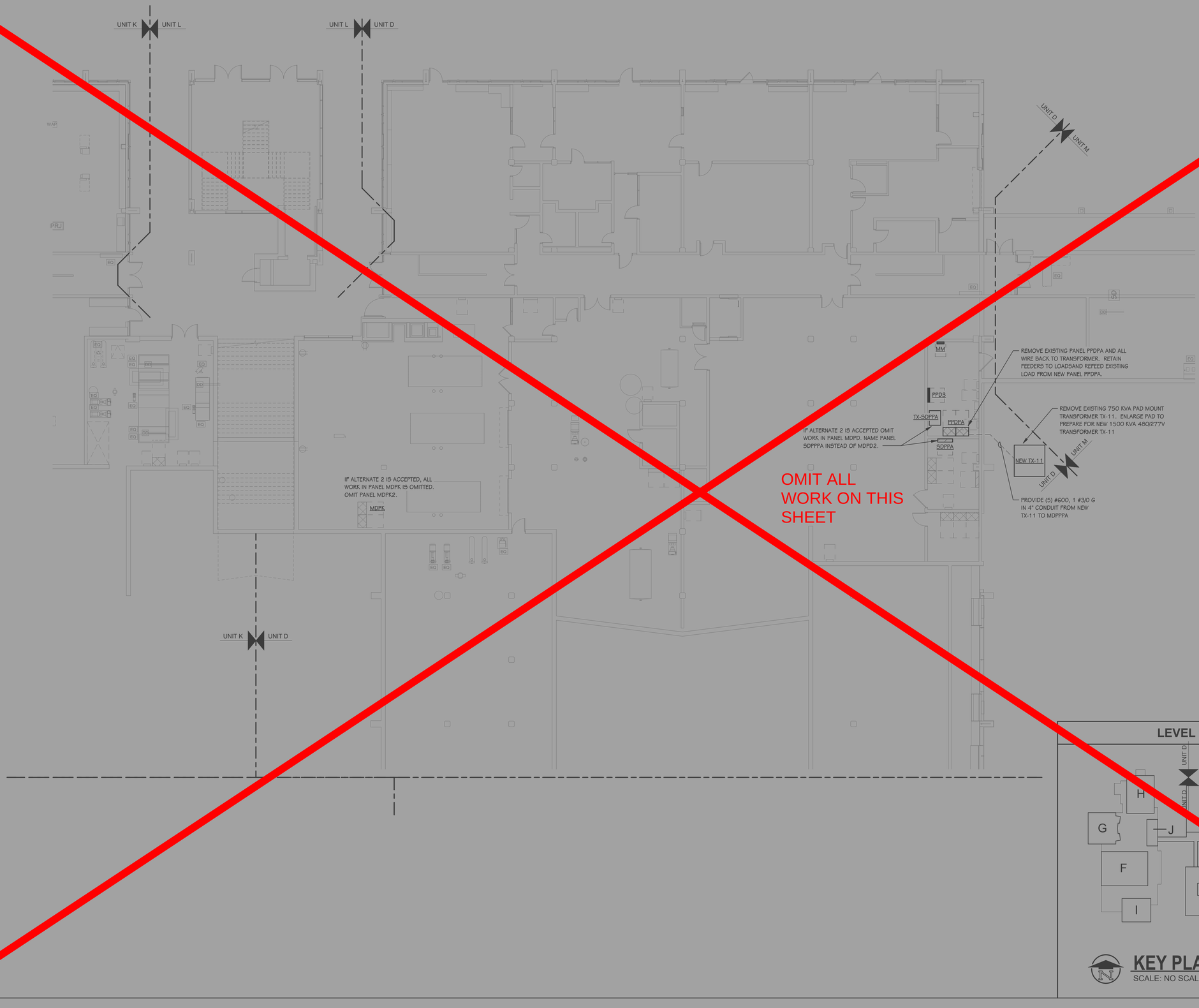
Kalamazoo, Michigan

SHEET TITLE
ALTERNATE #2 - NEW 480 VOLT SERVICE

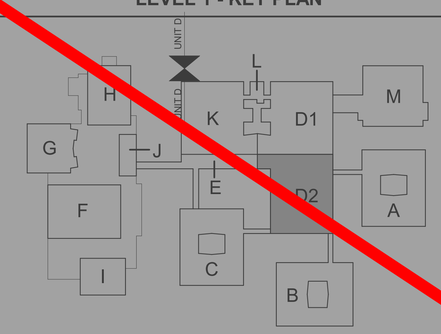
DATE
NOVEMBER 22, 2022

SHEET NUMBER
E 801

21-807.00



LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
ALTERNATE #2 LOWER LEVEL POWER PLAN

DATE
NOVEMBER 22, 2022

SHEET NUMBER
E 802
21-807.00

STRUCTURED CABLING

		MOUNTING HEIGHTS
	DATA/VOICE OUTLET - 4 SQ BOX, 5G COVER, 1" CONDUIT STUB	16"
	DATA/VOICE OUTLET - 4 SQ BOX, 5G COVER, SURFACE #WM500	16"
	DATA/VOICE OUTLET - 4 SQ BOX, 5G COVER, 1" CONDUIT STUB 4" ABOVE BACKSPLASH	
	SECURITY CONTROLS PATHWAY - 4 SQ BOX, 5G COVER WITH BRUSH PLATE, 1" CONDUIT STUB	16"
WAP	WIRELESS ACCESS POINT (REFER TO DETAILS)	
GBR	GROUNDING BUS BAR WITH DEDICATED GROUND, (REFER TO DETAILS)	
	CABLE TRAY, (12"x4" UNLESS NOTED OTHERWISE)	
	CLOCK (REFER TO DETAILS)	90° TO CENTER
MCP	MASTER CLOCK PANEL	
PAG	PAGING SYSTEM HEAD END	
TC#	NETWORK COMMUNICATION RACK - FLOOR STANDING 3' CLEAR ON BOTH SIDES	
	4'X8'X3/4" FIRE-RATED PLYWOOD, A/C FINISH, MOUNT VERTICALLY	12"
	CONDUIT SLEEVE IN ACCESSIBLE CEILING (2" CONDUIT UNLESS NOTED OTHERWISE, ONLY SHOWN ON PLANS INDICATING SPECIFIC CONDITIONS, REFER TO GENERAL NOTES FOR SLEEVES THAT ARE REQUIRED INTO ALL SPACES)	

AUDIO/VISUAL

TV n	TV WALL RECESSED "FSR" BACKBOX, (REFER TO DETAILS)	
PRJ n	PROJECTOR, (REFER TO DETAILS)	
AV n	A/V WALL STATION BOXES, USE FSR MUDRING MUD-2G-** FOR 2-GANG OPENINGS (REFER TO DETAILS)	
TS n	TECHNOLOGY OR TEACHER'S STATION BOXES, USE FSR MUDRING MUD-2G-** FOR 2-GANG OPENINGS(REFER TO DETAILS)	
MIC	MICROPHONE JACK	16"
CB	CEILING BOX, (REFER TO DETAILS)	
BT	BLUETOOTH DEVICE - DEEP 4 SQ BOX, 1-G OPENING, (REFER TO DETAILS)	40"
ANT	ANTENNA, (REFER TO DETAILS)	
SCR	PROJECTOR SCREEN, (REFER TO DETAILS)	
C	LOUDSPEAKER CEILING - MOUNTED	
S	LOUDSPEAKER WALL - MOUNTED	
VC	VOLUME CONTROL	40"

SECURITY SYMBOLS

	SECURITY CAMERA - WALL	
	SECURITY CAMERA - CEILING	
SCP	SECURITY CABLING PATHWAY, 4 SQ, 5G BRUSH PLATE, 1" CONDUIT STUB	16"
ACP #	ACCESS CONTROL PANEL (REFER TO DETAILS)	
RB	RELEASE BUTTON	
IM	INTERCOM MASTER STATION	
LD	LOCKDOWN BUTTON	
DA	DURESS ALARM PUSH BUTTON - UNDER DESK	
CR	CARD READER - 4 SQ BOX, 5G COVER, 3/4" CONDUIT STUB	40"
CR M	CARD READER, MULLION MOUNT, 3/4" CONDUIT STUB	40"
LS	LOCKDOWN STROBE (REFER TO DETAILS)	
KP	KEY PAD - 4 SQ BOX, 5G COVER, 3/4" CONDUIT STUB	40"
IC	INTERCOM - 4 SQ BOX, 5G COVER, 3/4" CONDUIT STUB	40"
n	ACCESS CONTROL DETAIL INDICATOR: REFER TO ACCESS CONTROL DETAILS AND SCHEDULE	

NOTES:

MOUNT DEVICES AT HEIGHTS INDICATED UNLESS INDICATED OTHERWISE ON PLANS. HEIGHTS ARE TO BOTTOM OF DEVICE.

AUDIO SYSTEM NOTES

1 AUDIO SYSTEM SHALL BE FREE OF NOISE, RATTLE, HUM, BUZZ, OR ANY OTHER AUDIO DISTORTIONS

2 SECURE CABLES UTILIZING VELCRO STRAPS. WIRE "ZIP TIES" SHALL NOT BE USED

3 ROUTE ALL CABLES IN A MANNER THAT WILL ENSURE SIGNAL INTEGRITY AND WILL NOT INTRODUCE CROSSTALK

4 PROVIDE A SERVICE LOOP FOR RACKS AND EQUIPMENT SUITABLE TO EASILY PLUG AND UNPLUG EQUIPMENT FOR TROUBLESHOOTING OR REPLACEMENT

5 NEATLY DRESS ALL CABLING INSTALLED INSIDE AND OUTSIDE OF RACKS IN A SUITABLE HARNESS TO KEEP CABLES CLEAN, NEAT, AND TIDY

6 COMMISSION AUDIO SYSTEM USING AUDIO MEASUREMENT MICROPHONE AND SOFTWARE (SMAART OR EASERA)

7 ADJUST EQ AND CROSSOVER SETTINGS IN AMPLIFIER AND/OR DSP TO PROVIDE FLAT FREQUENCE RESPONSE, FULL RANGE AUDIO WITH PROTECTIVE LIMITING

8 USE SPEECH, HIGH QUALITY REFERENCE AUDIO, AND SINE WAVE SWEEPS TO TEST THE SYSTEM - CORRECT ANY ABNORMALITIES

9 VERIFY PROPER FUNCTION OF ALL INSTALLED EQUIPMENT (NEW AND EXISTING)

10 TURN OVER EXISTING UNUSED EQUIPMENT TO OWNER - NEATLY ORGANIZED

11 COORDINATE WITH OWNER FOR LABELING OF EQUIPMENT AND AUDIO CONSOLE CHANNELS AND BUSSES AS WELL AS CONSOLE CONFIGURATION

12 REMOTE MOUNT ALL ANTENNAS AS REQUIRED FOR MAXIMUM PERFORMANCE

13 CONFIGURE DELAYS ON ANY SPEAKERS THAT ARE STAGGERED IN A LISTENING PLANE TO TIME-ALIGN AUDIO

14 CONNECT COMPONENTS TO POWER SEQUENCER IN SUCH A WAY AS TO MITIGATE POPPING AND SYSTEM DAMAGE DURING SYSTEM POWER UP AND POWER DOWN

PAGING AND CLOCK NOTES

1 FOR CLOCKS REQUIRING A MANUFACTURER-SPECIFIC IN-WALL ROUGH-IN BOX, THE CLOCK CONTRACTOR SHALL PROVIDE THE ROUGH-IN BOX TO ELECTRICIAN FOR WALL INSTALLATION. THE CLOCK CONTRACTOR AND ELECTRICIAN SHALL COORDINATE AHEAD OF SCHEDULED WALL INSTALLATIONS. COORDINATE WITH CONSTRUCTION MANAGER.

2 PAGING AND CLOCK CONTROLLERS SHALL BE PROPERLY CONFIGURED FOR TIME SYNCHRONIZATION WITH OWNER'S NETWORK TIME PROTOCOL (NTP) SOURCE. COORDINATE NTP ADDRESS WITH OWNER.

3 PAGING SPEAKER CABLING SHALL BE SIZED APPROPRIATELY FOR CABLE LENGTH AND POWER LOAD OF A GIVEN CIRCUIT.

4 FOR WIRELESS CLOCK SYSTEMS THAT REQUIRE FCC LICENSURE, THE CLOCK INTEGRATOR SHALL COORDINATE ANY REQUIRED LICENSE APPLICATION FORMS THAT ARE REQUIRED TO BE COMPLETED BY THE OWNER.

5 THE CLOCK INTEGRATOR SHALL BE RESPONSIBLE FOR REVIEW OF THE PROJECT ARCHITECTURAL ELEVATIONS AND ADHERE TO CLOCK PLACEMENT/ALIGNMENT GUIDELINES. ANY PLACEMENT CLARIFICATION REQUESTS SHALL BE MADE BY RFI.

6 FOR INTEGRATION OF NEW PAGING HEADEND HARDWARE TO PRE-EXISTING PAGING CIRCUITS, THE PAGING INTEGRATOR SHALL PERFORM A PRE-INSTALLATION SPEAKER TEST OF ALL EXISTING SPEAKERS. ANY FAULTY EXISTING SPEAKERS SHALL BE NOTED AND COMMUNICATED TO THE CM/ARCHITECT PRIOR TO THE INSTALLATION OF NEW EQUIPMENT.

7 THE PAGING SYSTEM INTEGRATOR SHALL PROVIDE INTERCONNECTION CABLING TO THE PRIMARY FIRE ALARM PANEL TO ALLOW THE FIRE ALARM SYSTEM TO OVERRIDE PAGING. CONNECTION AT THE FIRE PANEL SHALL BE BY THE FIRE ALARM INTEGRATOR. COORDINATE WITH OTHER TRADES.

8 THE PAGING SYSTEM RISER DETAIL IS INTENDED TO BE DIAGRAMMATICAL FOR THE PURPOSE OF UNDERSTANDING THE BASIC SYSTEM ARCHITECTURE. THE PAGING INTEGRATOR SHALL PROVIDE ALL COMPONENTS, CABLES AND ADAPTERS REQUIRED FOR A FULLY FUNCTIONAL SYSTEM, REGARDLESS IF SHOWN ON THE DIAGRAM.

GENERAL TECHNOLOGY NOTES

1 TECHNOLOGY CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED FOR NEW WORK OR WHERE DEVICES ARE REMOVED AND NOT REPLACED.

2 TECHNOLOGY CONTRACTOR SHALL COORDINATE WITH G SERIES SHEETS DEVICE COORDINATION DETAIL. DEVICES ARE TO ALIGN VERTICALLY AND HORIZONTALLY AND FOLLOW THE RULES OF THIS DETAIL CONSISTENTLY. A PRE-INSTALL DEVICE COORDINATION MEETING FOR DEVICE FINISHES AND LAYOUT MAY BE REQUIRED IN THE SPECIFICATION FOR THIS PROJECT.

3 REFER TO TECHNOLOGY, ELECTRICAL AND ARCHITECTURAL DETAILS AND ELEVATIONS FOR SYMBOL INFORMATION AND ELEVATION DETAIL.

4 DEVICES AND EQUIPMENT SHOWN DASHED OR WITH AN "X" ARE TO BE REMOVED. FIXTURES, DEVICES AND EQUIPMENT SHOWN LIGHTLY OR WITH AN "E" ARE EXISTING TO REMAIN UNDISTURBED.

5 DEVICES SHOWN WITH AN "R" ARE EXISTING TO BE REPLACED WITH NEW DEVICE AND COVERPLATE.

6 TEMPORARILY SUPPORT EXISTING CEILING DEVICES TO REMAIN IN EXISTING CEILINGS TO BE REPLACED. REINSTALL DEVICES INTO NEW CEILING.

7 CONTRACTOR SHALL BE RESPONSIBLE FOR PROJECT PHASING. TEMPORARY WIRING TO KEEP SYSTEMS RUNNING SHALL BE PROVIDED AS REQUIRED WHILE BUILDING IS OCCUPIED BETWEEN PHASES OF CONSTRUCTION.

STRUCTURED CABLING NOTES

1 BICSI TECHNICIAN (TECH) CERTIFICATION IS REQUIRED FOR THE LEAD INSTALLER THAT WILL BE ONSITE AT ALL TIMES.

2 EACH INSTALLER IS REQUIRED TO BE CERTIFIED BY THE MANUFACTURER OF THE PRODUCTS THAT ARE INSTALLED (I.E. PANDUIT, BELDEN, HUBBELL, COMMSCOPE, ETC.).

3 VALID BICSI TECH AND MANUFACTURER INSTALLER CERTIFICATES SHALL BE INCLUDED IN SUBMITTAL PACKAGE.

4 ALL CERTIFICATION TEST RESULTS OF THE STRUCTURED CABLING SYSTEM SHALL BE SUBMITTED TO TOWERPINKSTER AS PART OF THE CLOSEOUT PACKAGE.

5 STRUCTURED CABLING INTEGRATOR SHALL PROVIDE A MANUFACTURER'S 25 YEAR WARRANTY AT PROJECT COMPLETION.

6 ALL CABLES SHALL HAVE A MINIMUM OF 5FT SERVICE LOOP AT OUTLET LOCATION OR AS NOTED ON DRAWINGS.

7 ALL DATA CABLES SHALL HAVE A MINIMUM OF 5FT SERVICE LOOP IN THE TELECOMMUNICATIONS ROOM.

8 DATA CABLES SHALL NOT BE BUNDLED IN GROUPS OF MORE THAN 24 WITHIN A TELECOMMUNICATIONS ROOM.

9 STRUCTURED CABLING INTEGRATOR SHALL PROVIDE THE MINIMUM REQUIRED QUANTITY OF PATCH PANELS NEEDED FOR ALL DATA CABLES PLUS HAVE CAPACITY FOR A MINIMUM OF 20 FUTURE DATA CABLES.

10 ALL DATA FACEPLATES SHALL MATCH THE COLOR, STYLE AND MATERIAL (I.E. STAINLESS STEEL, PLASTIC, ETC.) OF THE ELECTRICAL DEVICE FACEPLATE WITHIN EACH SPACE.

11 ALL HORIZONTAL CABLES (CATEGORY CABLE, COAX, FIBER, ETC.) SHALL BE CERTIFIED BY USING A MINIMUM OF A LEVEL IIIE CERTIFICATION TESTER THAT IS WITHIN MANUFACTURER'S CALIBRATION PERIOD.

12 ALL BACKBONE FIBER STRANDS SHALL BE CERTIFIED BY USING A MINIMUM OF A LEVEL IIIE CERTIFICATION TESTER THAT IS WITHIN MANUFACTURER'S CABLIBRATION PERIOD.

SECURITY CAMERA NOTES

1 INSTALLATION SHALL BE COMPLETED BY OR OVERSEEN BY A MANUFACTURER CERTIFIED PROFESSIONAL.

2 INSTALL CAMERAS USING ALL APPROPRIATE HANGERS, FASTENERS, ETC. CAMERAS INSTALLED IN GRID/LAY IN CEILING SHALL HAVE SAFETY WIRE TYING THE CAMERA TO STRUCTURE ABOVE. EXTERIOR CAMERAS SHALL HAVE WEATHERTIGHT SEALANT AND SURGE SUPPRESSION INSTALLED. REFER TO CAMERA ROUGH IN DETAILS.

3 PRIOR TO CONNECTION TO OWNER'S NETWORK, DEFAULT USERNAME AND PASSWORD SHALL BE CHANGED. COORDINATE WITH OWNER FOR DEVICE SPECIFIC USERNAMES AND PASSWORDS.

4 CAMERA SHALL BE CONFIGURED BASED ON OWNER'S NETWORK CONFIGURATION AND NAMING STANDARDS. COMPLETE AN IP ADDRESS REQUEST WITH THE OWNER, COORDINATE NAMING CONFIGURATION BASED ON CAMERA COORDINATION SPREADSHEET.

5 INSTALL CAMERAS WITH INITIAL VIEW DEFINED BY THE CAMERA COORDINATION SPREADSHEET OR COVERAGE ANGLES PROVIDED BY ARCHITECT. VARIFOCAL AIMING WHERE REQUIRED TO OBTAIN INTENDED VIEW SHALL BE COMPLETED.

6 FOLLOWING SETTING THE INITIAL VIEW, COORDINATE AIMING MODIFICATIONS WITH ARCHITECT AND OWNER AND OBTAIN SIGN OFF PER CAMERA THROUGH THE CAMERA AIMING COORDINATION SPREADSHEET.

7 CONFIGURE CAMERA TO RECORD TO NVR BASED ON OWNER'S RECORDING CONFIGURATION STANDARDS. RESOLUTION, FRAMES PER SECOND, CONTINUOUS/MOTION ACTIVATED RECORDING, ANALYTICS, AND ANY OTHER FEATURES SHALL BE COORDINATED.

8 LABEL CAMERA HOUSING IN A LOCATION VISIBLE FROM THE GROUND. REFER TO CAMERA LABELING DETAIL FOR REQUIREMENTS.

9 CAMERA SYMBOLS AND COVERAGE ANGLES SHALL BE SET IN VMS MAPS ONCE OWNER AND ARCHITECT HAVE SIGNED OFF ON VIEWS.

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
TECHNOLOGY SYMBOLS AND GENERAL NOTES

DATE
NOVEMBER 22, 2022

SHEET NUMBER
T 001
21-807.00

OMIT ALL WORK ON THIS SHEET

LOWER LEVEL TECHNOLOGY DEMOLITION PLAN - UNIT K
3/32" = 1'-0"

TECHNOLOGY DEMOLITION KEYED NOTES

1 REMOVE CLASSROOM AV SPEAKERS FROM CEIILNG. DOCUMENTTAP WATTAGE AND LOCATION. DELIVER TO KPS TECHNOLOGY SERVICES.

2 REMOVE PAGING SPEAKER FROM CEILING. DOCUMENT THE SPEAKER TAP WATTAGE AND ASSOCIATED ROOM NUMBER. DELIVER SPEAKERS TO KPS TECHNOLOGY SERVICES.

3 REMOVE WIRELESS ACCESS POINT FROM CEILING. DOCUMENT MAC ADDRESS, DATA CABLE NUMBER, ASSOCIATED ROOM NUMBER, AND LOCATION. DELIVER TO KPS TECHNOLOGY SERVICES.

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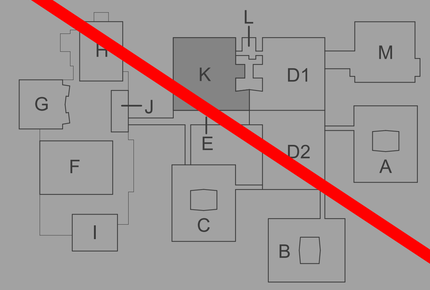
6 COVER CABINET WITH PLASTIC BUT LEAVE OPENINGS FOR VENTALATION. WALL MOUNTED CABINET TO REMAIN UP AND RUNNING DURING CONSTRUCTION.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL TECHNOLOGY DEMOLITION PLAN - UNIT K

DATE
NOVEMBER 22, 2022

SHEET NUMBER
TD 100K

21-807.00

OMIT ALL WORK ON THIS SHEET

LOWER LEVEL TECHNOLOGY DEMOLITION PLAN - UNIT M
3/32" = 1'-0"

TECHNOLOGY DEMOLITION KEYED NOTES

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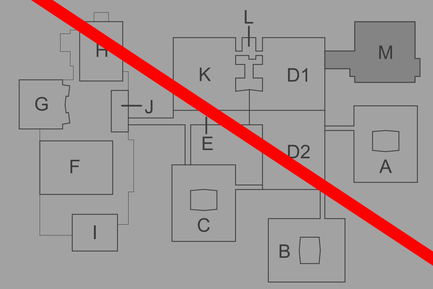

KEY PLAN
SCALE: NO SCALE

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PROJECT TITLE
LOY NORRIX HIGH
SCHOOL MECHANICAL
IMPROVEMENTS
PROJECT

OWNER
KALAMAZOO PUBLIC
SCHOOLS

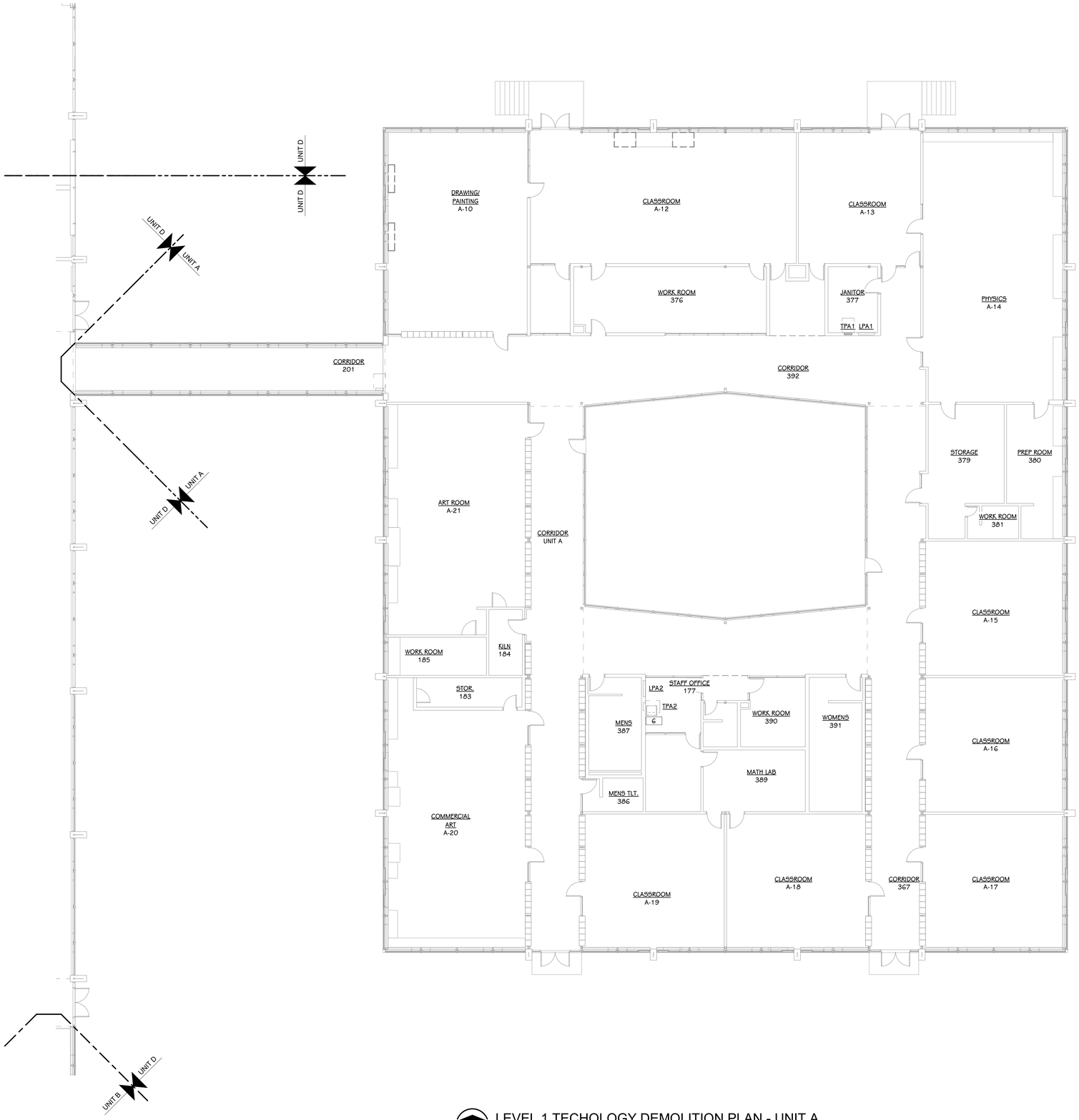
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL TECHNOLOGY
DEMOLITION PLAN - UNIT M

DATE
NOVEMBER 22, 2022

SHEET NUMBER
TD 100M

21-807.00



LEVEL 1 TECHOLOGY DEMOLITION PLAN - UNIT A

3/32" = 1'-0"

TECHNOLOGY DEMOLITION KEYED NOTES

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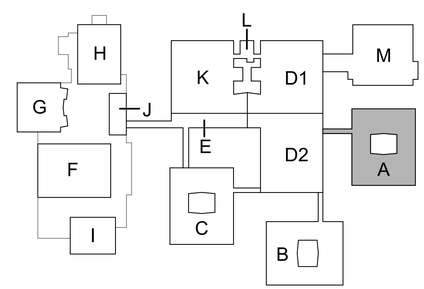

KEY PLAN

SCALE: NO SCALE

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PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

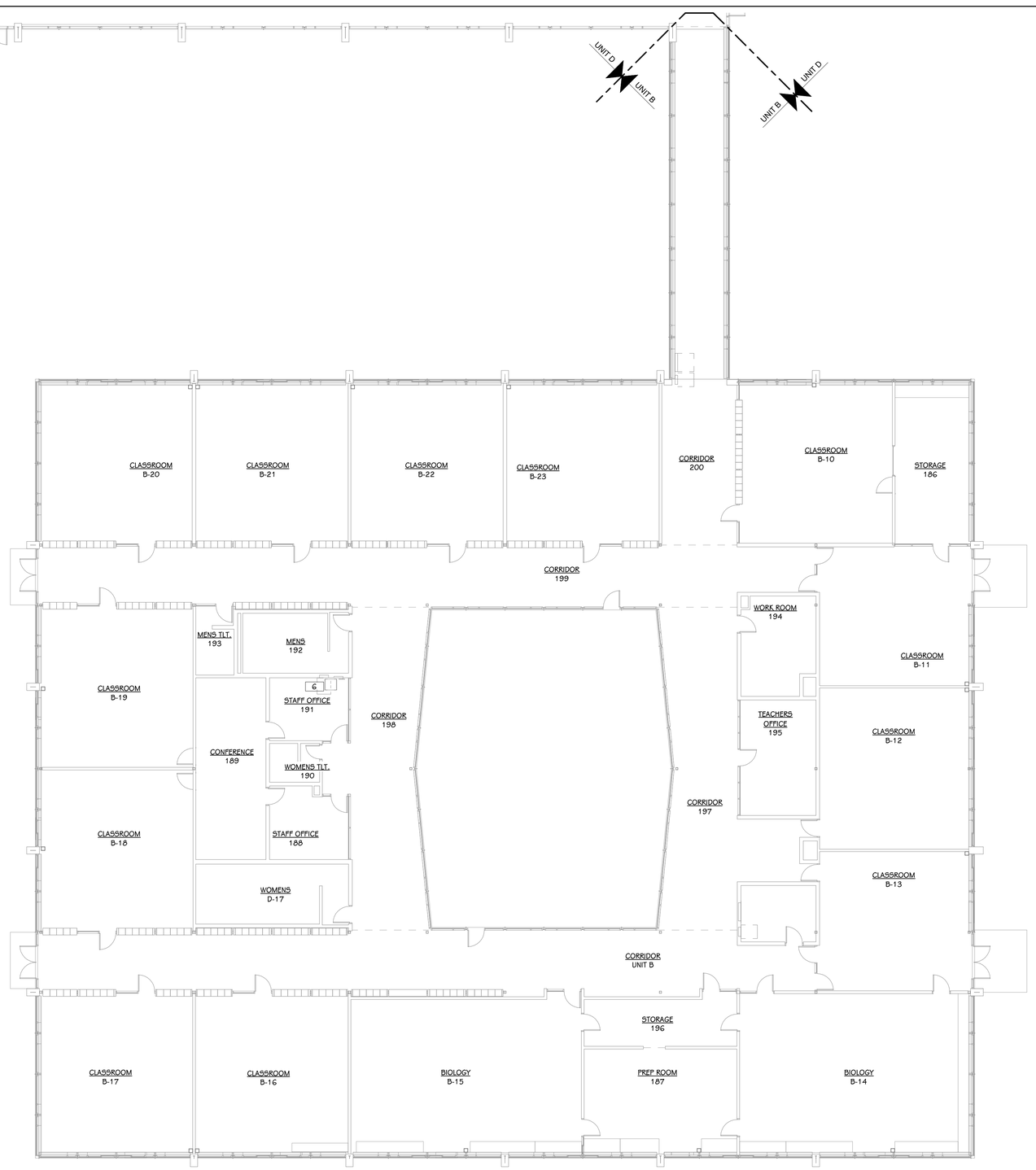
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 TECHNOLOGY DEMOLITION PLAN - UNIT A

DATE
NOVEMBER 22, 2022

SHEET NUMBER
TD 101A

21-807.00



LEVEL 1 TECHOLOGY DEMOLITION PLAN - UNIT B

3/32" = 1'-0"

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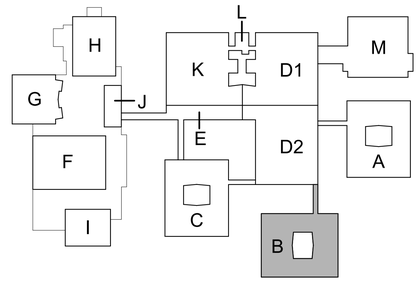
LEVEL 1 - KEY PLAN



KEY PLAN

SCALE: NO SCALE

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PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 TECHNOLOGY DEMOLITION PLAN - UNIT B

DATE
NOVEMBER 22, 2022

SHEET NUMBER
TD 101B

21-807.00

OMIT ALL WORK ON THIS SHEET

LEVEL 1 TECHOLOGY DEMOLITION PLAN - UNIT K
3/32" = 1'-0"

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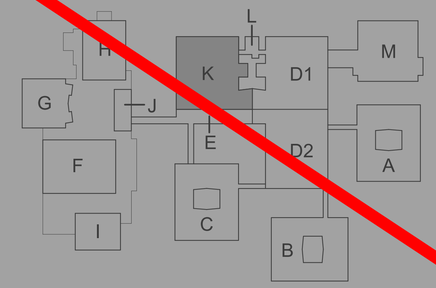
LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 TECHNOLOGY DEMOLITION PLAN - UNIT K

DATE
NOVEMBER 22, 2022

SHEET NUMBER
TD 101K
21-807.00

TECHNOLOGY DEMOLITION KEYED NOTES

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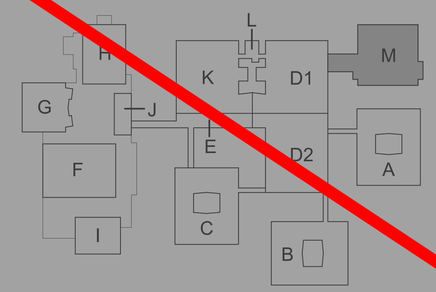
OMIT ALL WORK ON THIS SHEET

LEVEL 1 TECHOLOGY DEMOLITION PLAN - UNIT M
3/32" = 1'-0"

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

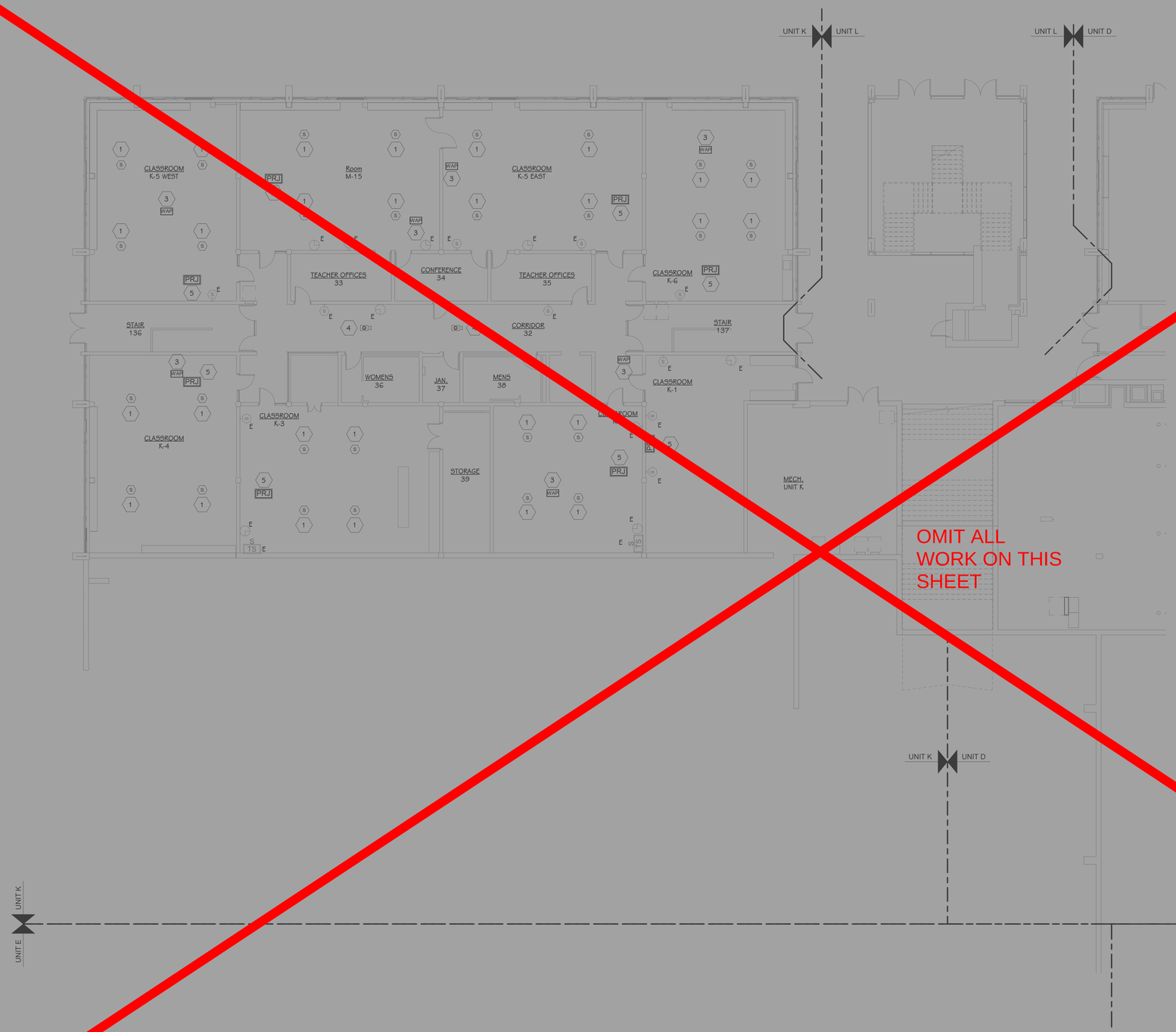
OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 TECHNOLOGY DEMOLITION PLAN - UNIT M

DATE
NOVEMBER 22, 2022

SHEET NUMBER
TD 101M

21-807.00



OMIT ALL WORK ON THIS SHEET

LOWER LEVEL FLOOR TECHNOLOGY PLAN - UNIT K
3/32" = 1'-0"

TECHNOLOGY KEYED NOTES

1 RETRIEVE AV SPEAKERS FROM KPS TECHNOLOGY SERVICES. INSTALL SPEAKERS THAT WERE REMOVED DURING DEMO PHASE. PAGING SYSTEM SPEAKER CENTERED IN SPACE, EQUALLY SPACING AV SPEAKERS IN ROOM FOR BEST STUDENT SEATING COVERAGE.

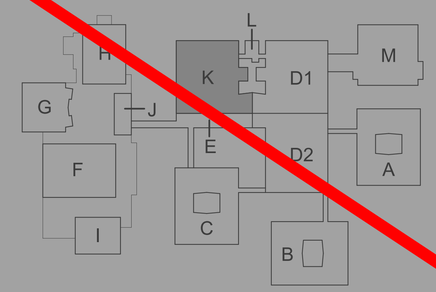
2 REMOVE PLASTIC FROM WALL MOUNTED CABINET, CLEANALL DUST AND DEBRIS FROM CABINET (INSIDE AND OUT) AND NETWORK EQUIPMENT.

3 RETRIEVE WIRELESS ACCESS POINT FROM KPS TECHNOLOGY SERVICES. INSTALL WIRELESS ACCESS POINT BACK WHERE THEY WERE REMOVED FROM CEILING. DOCUMENT MAC ADDRESS, DATA CABLE NUMBER, AND ASSOCIATED ROOM NUMBER.

4 RETREIVE CAMERAS FROM KPS TECHNOLOGY SERVICES. INSTALL SECURITY CAMERAS THAT WERE REMOVED DURING DEMO PHASE. COORDINATE WITH OWNERS FOR CAMERA COVERAGE. PULL NEW DATA CABLE IF CABLE DOES NOT REACH NEW LOCATION.

5 RETREIVE PROJECTORS FROM KPS TECHNOLOGY SERVICES. INSTALL PROJECTORS THAT WERE REMOVED DURING DEMO PHASE. CENTER ON WHITEBOARDS/PROJECTOR SCREENS RECONNECT CABLES THAT WERE DISCONNECTED AND TEST AV SYSTEM FOR COMPLETE FUNCTIONALITY.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS

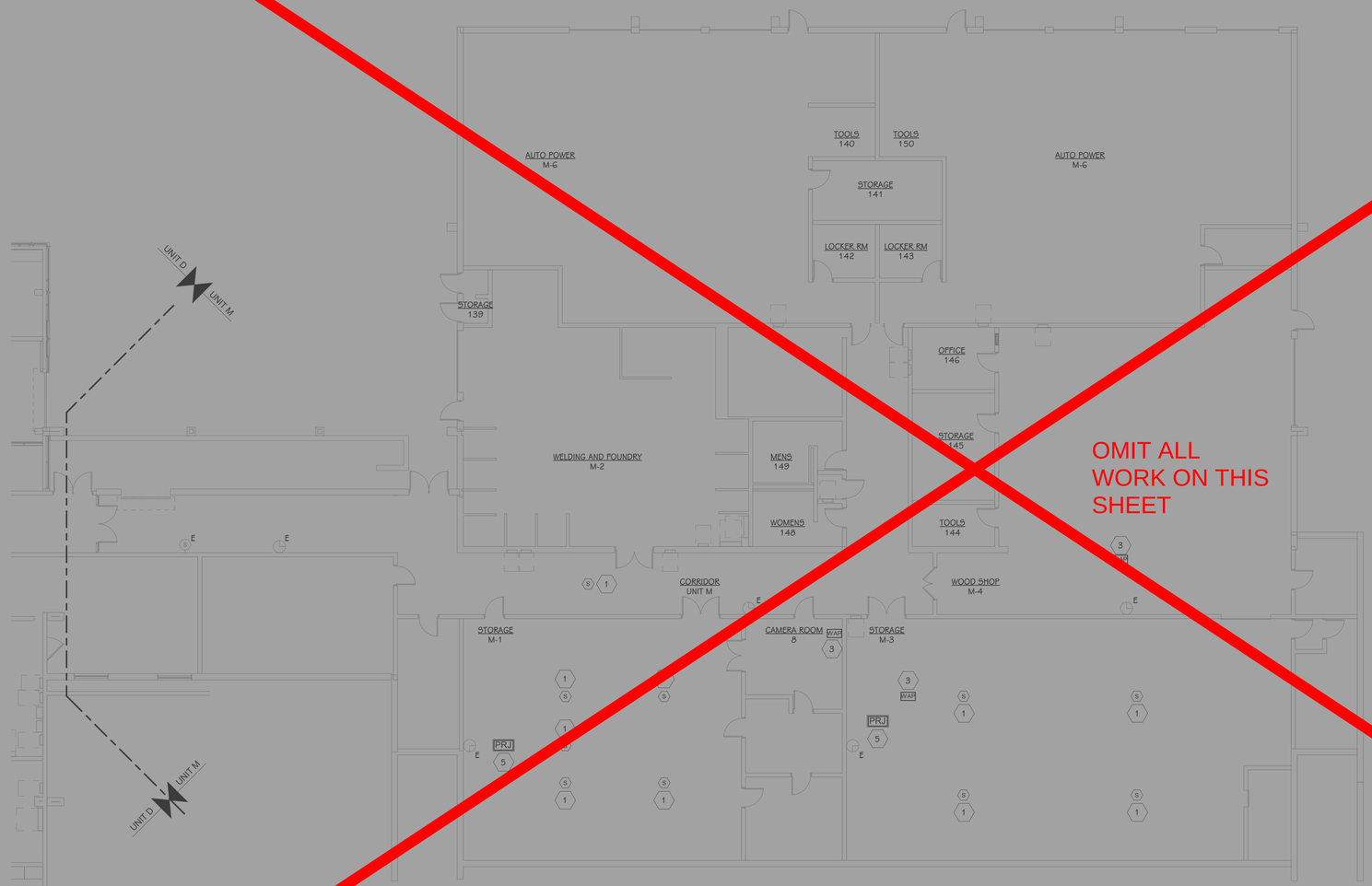
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL TECHNOLOGY PALN - UNIT K

DATE
NOVEMBER 22, 2022

SHEET NUMBER
T 100K

21-807.00



OMIT ALL WORK ON THIS SHEET

LOWER LEVEL FLOOR TECHNOLOGY PLAN - UNIT M
3/32" = 1'-0"

TECHNOLOGY KEYED NOTES

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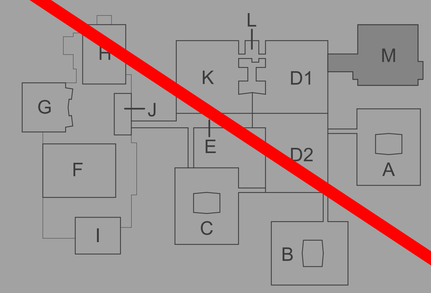
LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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Addendum No. 2 December 16, 2022

ISSUED FOR DATE

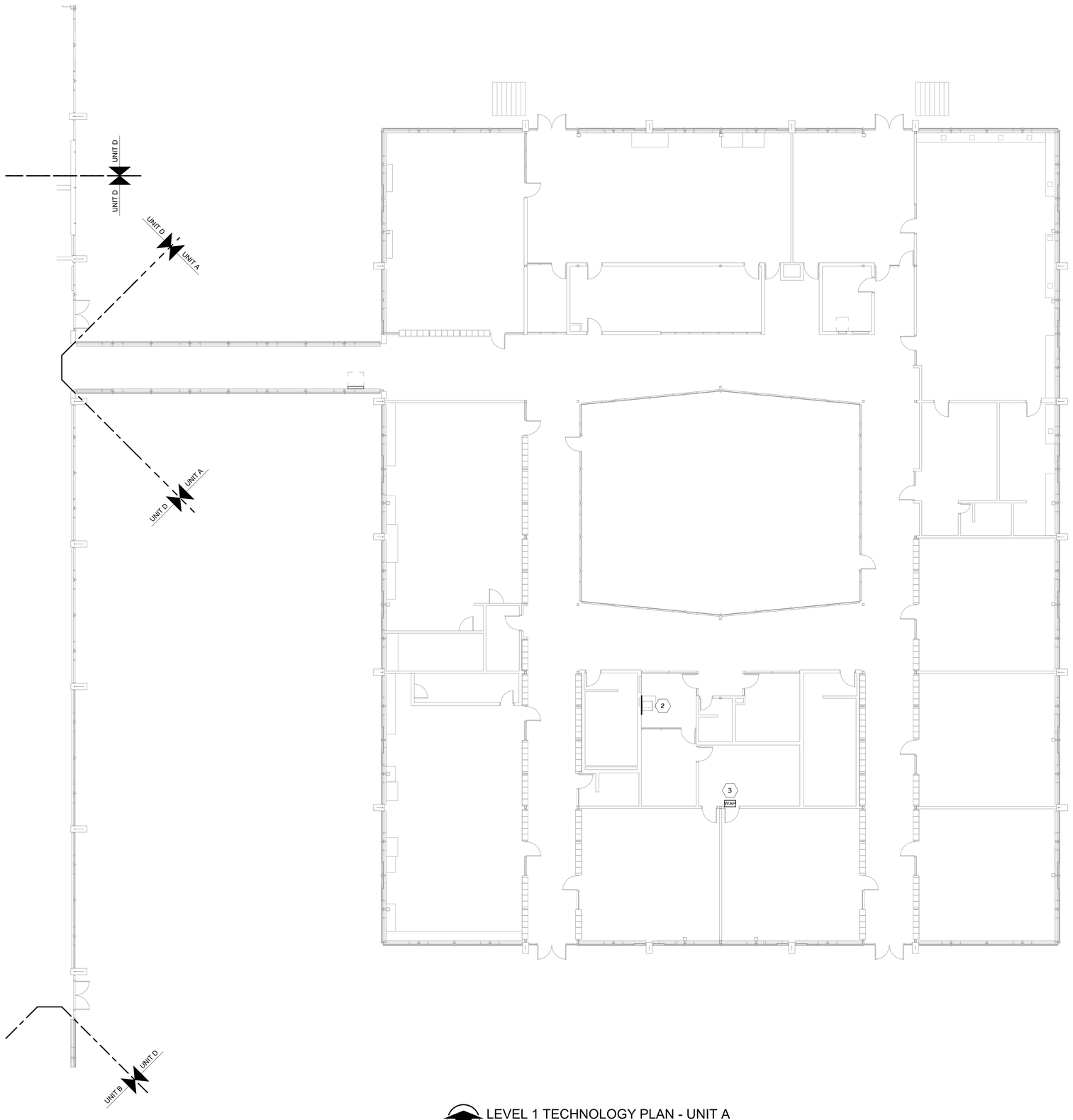
PROJECT TITLE
LOY NORRIX HIGH SCHOOL MECHANICAL IMPROVEMENTS PROJECT

OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LOWER LEVEL TECHNOLOGY PALN - UNIT M

DATE
NOVEMBER 22, 2022

SHEET NUMBER
T 100M
21-807.00



LEVEL 1 TECHNOLOGY PLAN - UNIT A
3/32" = 1'-0"

TECHNOLOGY KEYED NOTES

1 RETRIEVE AV SPEAKERS FROM KPS TECHNOLOGY SERVICES. INSTALL SPEAKERS THAT WERE REMOVED DURING DEMO PHASE. PAGING SYSTEM SPEAKER CENTERED IN SPACE, EQUALLY SPACING AV SPEAKERS IN ROOM FOR BEST STUDENT SEATING COVERAGE.

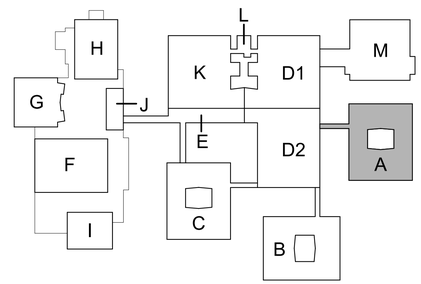
2 REMOVE PLASTIC FROM WALL MOUNTED CABINET, CLEANALL DUST AND DEBRIS FROM CABINET (INSIDE AND OUT) AND NETWORK EQUIPMENT.

3 RETRIEVE WIRELESS ACCESS POINT FROM KPS TECHNOLOGY SERVICES. INSTALL WIRELESS ACCESS POINT BACK WHERE THEY WERE REMOVED FROM CEILING. DOCUMENT MAC ADDRESS, DATA CABLE NUMBER, AND ASSOCIATED ROOM NUMBER.

4 RETREIVE CAMERAS FROM KPS TECHNOLOGY SERVICES. INSTALL SECURITY CAMERAS THAT WERE REMOVED DURING DEMO PHASE. COORDINATE WITH OWNERS FOR CAMERA COVERAGE. PULL NEW DATA CABLE IF CABLE DOES NOT REACH NEW LOCATION.

5 RETREIVE PROJECTORS FROM KPS TECHNOLOGY SERVICES. INSTALL PROJECTORS THAT WERE REMOVED DURING DEMO PHASE. CENTER ON WHITEBOARDS/PROJECTOR SCREENS RECONNECT CABLES THAT WERE DISCONNECTED AND TEST AV SYSTEM FOR COMPLETE FUNCTIONALITY.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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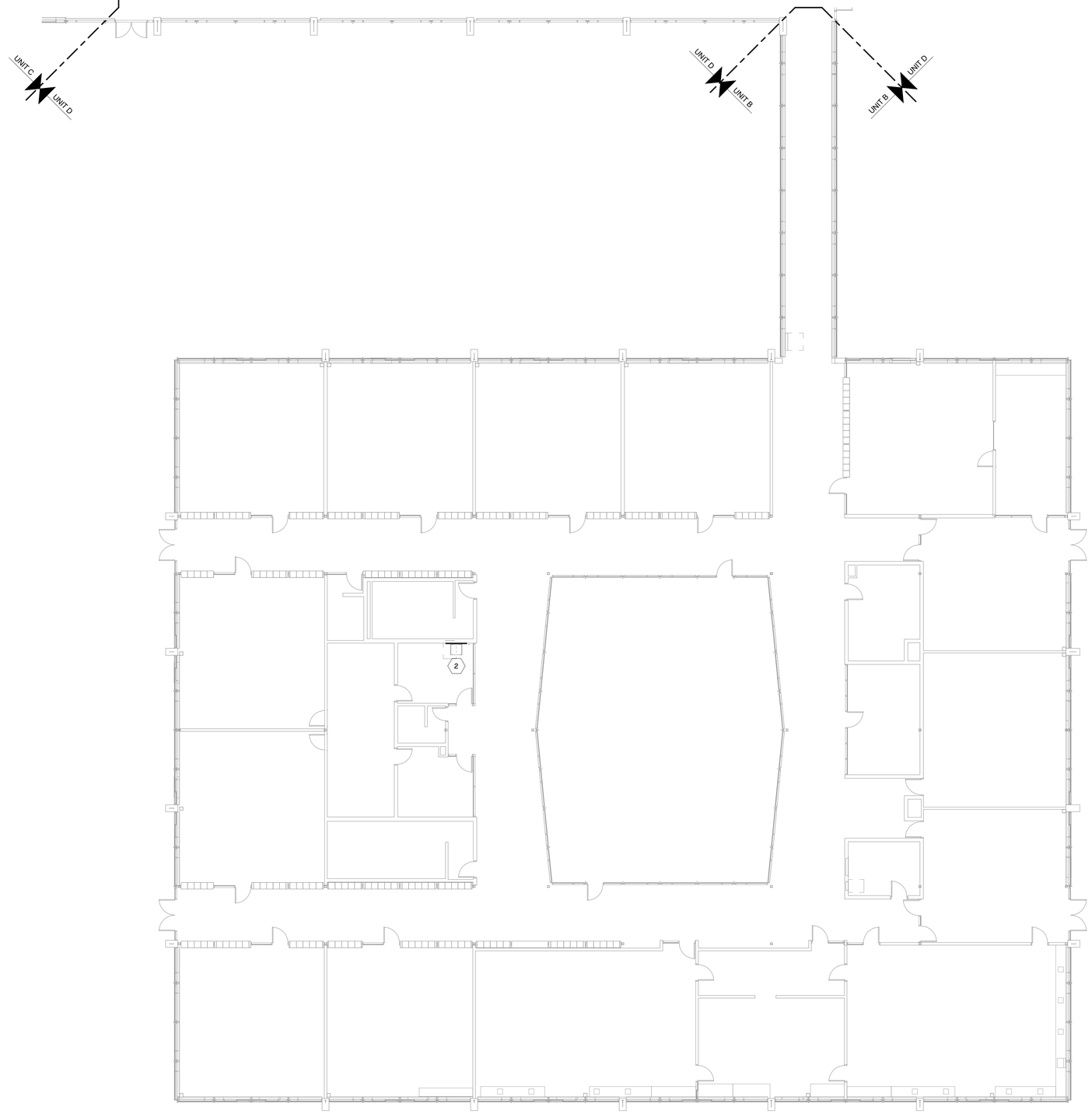
OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 TECHNOLOGY PLAN - UNIT A

DATE
NOVEMBER 22, 2022

SHEET NUMBER
T 101A
21-807.00



LEVEL 1 TECHNOLOGY PLAN - UNIT B
3/32" = 1'-0"

TECHNOLOGY KEYED NOTES

1 RETRIEVE AV SPEAKERS FROM KPS TECHNOLOGY SERVICES. INSTALL SPEAKERS THAT WERE REMOVED DURING DEMO PHASE. PAGING SYSTEM SPEAKER CENTERED IN SPACE, EQUALLY SPACING AV SPEAKERS IN ROOM FOR BEST STUDENT SEATING COVERAGE.

2 REMOVE PLASTIC FROM WALL MOUNTED CABINET, CLEANALL DUST AND DEBRIS FROM CABINET (INSIDE AND OUT) AND NETWORK EQUIPMENT.

3 RETRIEVE WIRELESS ACCESS POINT FROM KPS TECHNOLOGY SERVICES. INSTALL WIRELESS ACCESS POINT BACK WHERE THEY WERE REMOVED FROM CEILING. DOCUMENT MAC ADDRESS, DATA CABLE NUMBER, AND ASSOCIATED ROOM NUMBER.

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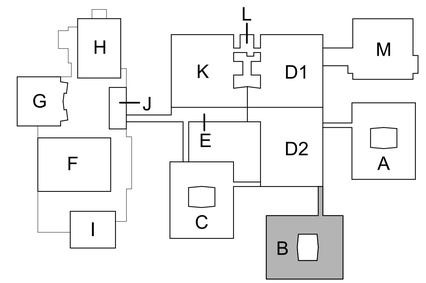
LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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PROJECT TITLE
LOY NORRIX HIGH
SCHOOL MECHANICAL
IMPROVEMENTS
PROJECT

OWNER
KALAMAZOO PUBLIC
SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 TECHNOLOGY PLAN - UNIT B

DATE
NOVEMBER 22, 2022

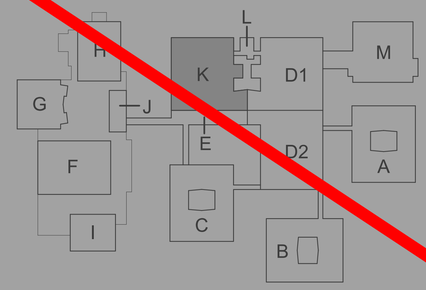
SHEET NUMBER
T 101B
21-807.00

LEVEL 1 TECHNOLOGY PLAN - UNIT K
3/32" = 1'-0"

TECHNOLOGY KEYED NOTES

1. RETRIEVE AV SPEAKERS FROM KPS TECHNOLOGY SERVICES. INSTALL SPEAKERS THAT WERE REMOVED DURING DEMO PHASE. PAGING SYSTEM SPEAKER CENTERED IN SPACE, EQUALLY SPACING AV SPEAKERS IN ROOM FOR BEST STUDENT SEATING COVERAGE.
2. REMOVE PLASTIC FROM WALL MOUNTED CABINET, CLEANALL DUST AND DEBRIS FROM CABINET (INSIDE AND OUT) AND NETWORK EQUIPMENT.
3. RETRIEVE WIRELESS ACCESS POINT FROM KPS TECHNOLOGY SERVICES. INSTALL WIRELESS ACCESS POINT BACK WHERE THEY WERE REMOVED FROM CEILING. DOCUMENT MAC ADDRESS, DATA CABLE NUMBER, AND ASSOCIATED ROOM NUMBER.
4. RETREIVE CAMERAS FROM KPS TECHNOLOGY SERVICES. INSTALL SECURITY CAMERAS THAT WERE REMOVED DURING DEMO PHASE. COORDINATE WITH OWNERS FOR CAMERA COVERAGE. PULL NEW DATA CABLE IF CABLE DOES NOT REACH NEW LOCATION.
5. RETREIVE PROJECTORS FROM KPS TECHNOLOGY SERVICES. INSTALL PROJECTORS THAT WERE REMOVED DURING DEMO PHASE. CENTER ON WHITEBOARDS/PROJECTOR SCREENS RECONNECT CABLES THAT WERE DISCONNECTED AND TEST AV SYSTEM FOR COMPLETE FUNCTIONALITY.

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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PROJECT TITLE
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OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 TECHNOLOGY PLAN - UNIT K

DATE
NOVEMBER 22, 2022

SHEET NUMBER
T101K

21-807.00

TECHNOLOGY KEYED NOTES

1 RETRIEVE AV SPEAKERS FROM KPS TECHNOLOGY SERVICES. INSTALL SPEAKERS THAT WERE REMOVED DURING DEMO PHASE. PAGING SYSTEM SPEAKER CENTERED IN SPACE, EQUALLY SPACING AV SPEAKERS IN ROOM FOR BEST STUDENT SEATING COVERAGE.

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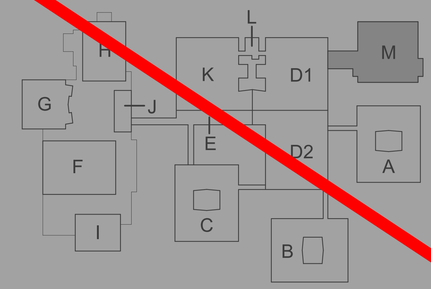
OMIT ALL WORK ON THIS SHEET

LEVEL 1 TECHNOLOGY PLAN - UNIT M
3/32" = 1'-0"

LEVEL 1 - KEY PLAN



KEY PLAN
SCALE: NO SCALE

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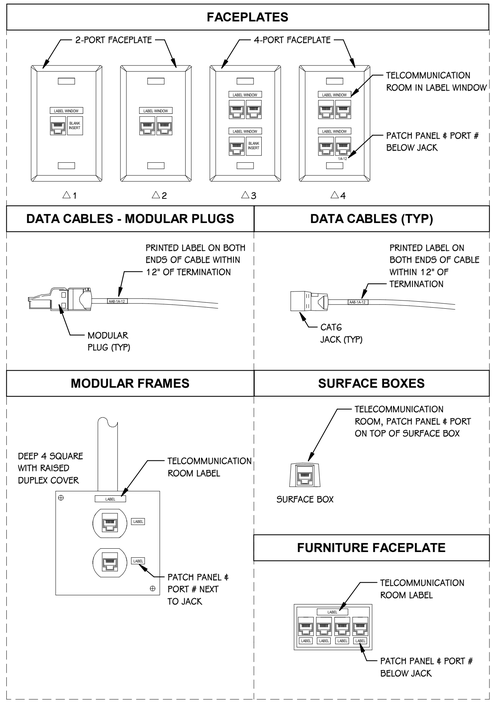
OWNER
KALAMAZOO PUBLIC SCHOOLS
Kalamazoo, Michigan

SHEET TITLE
LEVEL 1 TECHNOLOGY PLAN - UNIT M

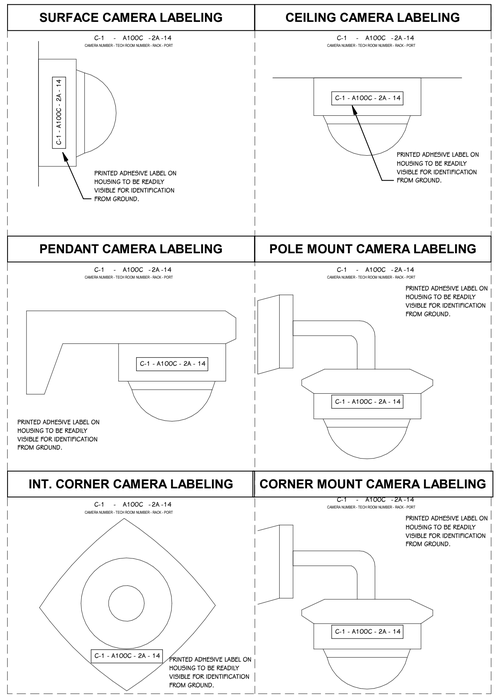
DATE
NOVEMBER 22, 2022

SHEET NUMBER
T 101M

21-807.00



TYPICAL LABELING DETAIL
SCALE: NONE



TYPICAL CAMERA LABELING DETAIL
SCALE: NONE

DATA CABLE SCHEDULE

COLOR	PURPOSE	MFG	PART #
WHITE - PLENUM	PLENUM CAT6 CABLE	GENERAL CABLE	7131801
WHITE - RISER	RISER CAT6 CABLE	GENERAL CABLE	7133801

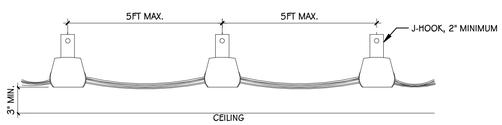
DATA JACK SCHEDULE

COLOR	PURPOSE	MFG	PART #
RED	COPPER BACKBONE	PANDUIT	CJ688TGRD
ORANGE	RESERVED	PANDUIT	CJ688TGOR
YELLOW	WIRELESS ACCESS POINTS	PANDUIT	CJ688TGRD
GREEN	FACILITIES	PANDUIT	CJ688TGGR
BLUE	SPECIAL NETWORK	PANDUIT	CJ688TGBU
VIOLET	SECURITY CAMERAS	PANDUIT	CJ688TGVL
BLACK	RESERVED	PANDUIT	CJ688TGBL
GREY	POTS LINES	PANDUIT	CJ688TGIG
IVORY, WHITE OR OFF-WHITE	GENERAL DATA & IP PHONES	PANDUIT	CJ688TGEI

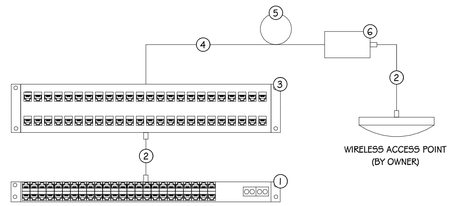
FACEPLATE & SURFACE BOX SCHEDULE

COLOR	TYPE	MFG	PART #
MATCH ELECTRICAL WITHIN SAME ROOM	1-PORT FACEPLATE, SINGLE-GANG	PANDUIT	CFPL1**Y
	2-PORT FACEPLATE, SINGLE-GANG	PANDUIT	CFPL2**Y
	3-PORT FACEPLATE, SINGLE-GANG	PANDUIT	CFPL3**Y
	4-PORT FACEPLATE, SINGLE-GANG	PANDUIT	CFPL4**Y
	6-PORT FACEPLATE, SINGLE-GANG	PANDUIT	CFPL6**Y
	1-PORT SURFACE BOX	PANDUIT	CBX1IW-A
	2-PORT SURFACE BOX	PANDUIT	CBX2IW-AY
MATCH FURNITURE COLOR	4-PORT FURNITURE PLATE	PANDUIT	

CABLE & JACK SCHEDULE
SCALE: NONE

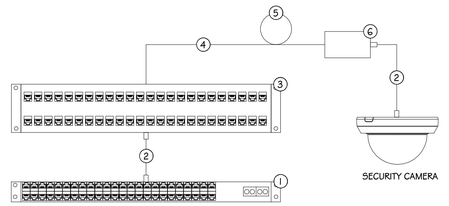


CABLE SUPPORT DETAIL
SCALE: NONE



1	NETWORK SWITCH	PROVIDED BY OWNER
2	CAT6 PATCH CABLE	REFER TO CABLE & JACK LEGEND
3	48 PORT PATCH PANEL	REFER TO RACK ELEVATION
4	CAT6 CABLE	REFER TO CABLE & JACK LEGEND
5	SERVICE LOOP	MINIMUM 15FT SERVICE LOOP
6	SURFACE MOUNT BOX	REFER TO TYPICAL LABELING DETAIL

WIRELESS ACCESS POINT CABLING DETAIL
SCALE: NONE



1	NETWORK SWITCH	PROVIDED BY OWNER
2	CAT6 PATCH CABLE	REFER TO CABLE & JACK LEGEND
3	48 PORT PATCH PANEL	REFER TO RACK ELEVATION
4	CAT6 CABLE	REFER TO CABLE & JACK LEGEND
5	SERVICE LOOP	MINIMUM 15FT SERVICE LOOP
6	SURFACE MOUNT BOX	REFER TO TYPICAL LABELING DETAIL

INTERIOR SECURITY CAMERA CABLING DETAIL
SCALE: NONE

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Kalamazoo, Michigan

SHEET TITLE
TECHNOLOGY DETAILS

DATE
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