

November 1, 2023

**WHITE PLAINS CITY SCHOOL DISTRICT
AC AND VENTILATION UPGRADES AT
MAMARONECK AVENUE ELEMENTARY SCHOOL
SED Control Number: 66-22-00-01-0-010-017**

**CONTRACT H- HVAC WORK
CONTRACT E - ELECTRICAL WORK**

WESTCHESTER COUNTY, NEW YORK

NOTE: *This clarification forms a part of the contract documents for the above project and must be acknowledged in the plans and specifications. Attach it to the inside front cover of each of the specifications.*

GENERAL CLARIFICATION TO PROJECT:

1. The District has previously executed a Board resolution to standardize Daikin equipment for Unit Ventilators and Condensers throughout the District. As such the Base Bid shall include equipment as provided by Daikin. However, the District also reserves it right to entertain alternate manufacturers for this equipment (alternative manufacturers listed with Technical Specifications) and may be listed as Deduct Alternates. Supply Deduct Alternate along with alternative manufacturer within the space(s) provided. Refer to revised SPECIFICATION SECTION PROPOSAL PB-H attached herewith.
2. The District has previously executed a Board resolution to standardize with EMF, Inc. as the equipment Controls Vendor throughout the District. As such the Bid shall include Controls as provided by EMF, Inc..
 - a. Energy Management of Facilities, Inc
Chip Greenwood
914-747-1007
greenwoodw@emfcontrols.com

CLARIFICATION TO SPECIFICATIONS:

1. Insert SPECIFICATION SECTION SPECIAL PROVISIONS, attached herewith.
2. Insert SPECIFICATION SECTION CONSTRUCTION SCHEDULE, attached herewith.
3. Remove SPECIFICATION SECTION 004116.11-PB-H and replace with revised SPECIFICATION SECTION 004116.17-PB-H, attached herewith.
4. Remove SPECIFICATION SECTION 238220.
5. Add SPECIFICATION SECTION 238126.12, attached herewith.
6. Remove SPECIFICATION SECTION 238223 and replace with revised SPECIFICATION SECTION 238223, attached herewith.

CLARIFICATION TO DRAWINGS:

1. REMOVE DRAWING G000.00 COVER SHEET AND REPLACE WITH REVISED DRAWING G000.00 COVER SHEET attached herewith. Please note that this drawing has been revised to clarify the sheet list.
2. REMOVE DRAWING M100.00 MECHANICAL GROUND FLOOR PLAN PART A AND REPLACE WITH REVISED DRAWING M100.00 MECHANICAL GROUND FLOOR PLAN PART A attached herewith. Please note that this drawing has been revised to clarify scope for the chase work, and mechanical work.

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3. REMOVE DRAWING M101.00 MECHANICAL GROUND FLOOR PLAN PART B AND REPLACE WITH REVISED DRAWING M101.00 MECHANICAL GROUND FLOOR PLAN PART B attached herewith. Please note that this drawing has been revised to clarify scope for the chase work, and mechanical work.
4. REMOVE DRAWING M502.00 HVAC DETAILS (3 OF 3) AND REPLACE WITH REVISED DRAWING M502.00 HVAC DETAILS (3 OF 3) attached herewith. Please note that this drawing has been revised to clarify scope for the detailing of mechanical chase work.
5. REMOVE DRAWING M001.00 HVAC LEGENDS, SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES AND REPLACE WITH REVISED DRAWING M001.00 HVAC LEGENDS, SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES. attached herewith. Please note that this drawing has been revised to clarify scope for the chase work, and mechanical work.
6. REMOVE DRAWING MD100.00 MECHANICAL GROUND FLOOR PLAN PART A AND REPLACE WITH REVISED DRAWING MD100.00 MECHANICAL GROUND FLOOR PLAN PART A. attached herewith. Please note that this drawing has been revised to clarify scope for the chase work, and mechanical work.
7. REMOVE DRAWING MD101.00 MECHANICAL GROUND FLOOR PLAN PART B AND REPLACE WITH REVISED DRAWING MD101.00 MECHANICAL GROUND FLOOR PLAN PART B. attached herewith. Please note that this drawing has been revised to clarify scope for the chase work, and mechanical work.
8. REMOVE DRAWING MD110.00 MECHANICAL FIRST FLOOR PLAN PART A AND REPLACE WITH REVISED DRAWING MD110.00 MECHANICAL FIRST FLOOR PLAN PART A. attached herewith. Please note that this drawing has been revised to clarify scope for the chase work, and mechanical work.
9. REMOVE DRAWING MD111.00 MECHANICAL FIRST FLOOR PLAN PART B AND REPLACE WITH REVISED DRAWING MD111.00 MECHANICAL FIRST FLOOR PLAN PART B. attached herewith. Please note that this drawing has been revised to clarify scope for the chase work, and mechanical work.
10. REMOVE DRAWING MD120.00 MECHANICAL SECOND FLOOR PART A AND REPLACE WITH REVISED DRAWING MD120.00 MECHANICAL SECOND FLOOR PART A. attached herewith. Please note that this drawing has been revised to clarify scope for the chase work, and mechanical work.
11. REMOVE DRAWING MD121.00 MECHANICAL SECOND FLOOR PLAN PART B AND REPLACE WITH REVISED DRAWING MD121.00 MECHANICAL SECOND FLOOR PLAN PART B. attached herewith. Please note that this drawing has been revised to clarify scope for the chase work, and mechanical work.
12. REMOVE DRAWING MD140.00 MECHANICAL ROOF PLAN PART A AND REPLACE WITH REVISED DRAWING MD140.00 MECHANICAL ROOF PLAN PART A. attached herewith. Please note that this drawing has been revised to clarify scope for the chase work, and mechanical work.
13. REMOVE DRAWING MD141.00 MECHANICAL ROOF PLAN PART B AND REPLACE WITH REVISED DRAWING MD141.00 MECHANICAL ROOF PLAN PART B. attached herewith. Please note that this drawing has been revised to clarify scope for the chase work, and mechanical work.
14. REMOVE DRAWING M110.00 MECHANICAL FIRST FLOOR PLAN PART A AND REPLACE WITH REVISED DRAWING M110.00 MECHANICAL FIRST FLOOR PLAN PART A. attached herewith. Please note that this drawing has been revised to clarify scope for the chase work, and mechanical work.
15. REMOVE DRAWING M111.00 MECHANICAL FIRST FLOOR PLAN PART B AND REPLACE WITH REVISED DRAWING M111.00 MECHANICAL FIRST FLOOR PLAN PART B. attached herewith. Please note that this drawing has been revised to clarify scope for the chase work, and mechanical work.
16. REMOVE DRAWING M120.00 MECHANICAL SECOND FLOOR PART A AND REPLACE WITH REVISED DRAWING M120.00 MECHANICAL SECOND FLOOR PART A. attached herewith. Please note that this drawing has been revised to clarify scope for the chase work, and mechanical work.

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17. REMOVE DRAWING M121.00 MECHANICAL SECOND FLOOR PLAN PART B AND REPLACE WITH REVISED DRAWING M121.00 MECHANICAL SECOND FLOOR PLAN PART B. attached herewith. Please note that this drawing has been revised to clarify scope for the chase work, and mechanical work.
18. REMOVE DRAWING M140.00 MECHANICAL ROOF PLAN PART A AND REPLACE WITH REVISED DRAWING M140.00 MECHANICAL ROOF PLAN PART A. attached herewith. Please note that this drawing has been revised to clarify scope for the chase work, and mechanical work.
19. REMOVE DRAWING M141.00 MECHANICAL ROOF PLAN PART B AND REPLACE WITH REVISED DRAWING M140.00 MECHANICAL ROOF PLAN PART B. attached herewith. Please note that this drawing has been revised to clarify scope for the chase work, and mechanical work.
20. REMOVE DRAWING M602.00 MECHANICAL SCHEDULES [3 of 4] AND REPLACE WITH REVISED DRAWING M602.00.00 MECHANICAL SCHEDULES [3 of 4]. attached herewith. Please note that this drawing has been revised to clarify schedules of mechanical work.

REQUEST FOR INFORMATION FROM JOSEPH LOMBARDO P&H:

1. For clarification purposes, is all the work under the "Contract G" to be performed under "Contract M"? Please advise.

RFI response: Yes, all work to be done under Contract "H" as indicated in the Contract Documents.

2. Is the existing roof bonded? Please provide roofing contractor if the roof is bonded. Please provide information on the roofing system/materials that are present. Please advise.

RFI response: District Roofing Contractor is Nick DeMatteo with Precision Roofing, Phone 845.351.2009, E-mail nick@precisionroofinginc.com

3. References are made in other specifications to see section 232200. spec section 232200 appears to be missing. Please advise.

RFI response: Section 232200 should not be included.

4. Paragraph A. "STATES" The owner will not be supplying equipment, labor, or tools for the project. I have been advised by my DAIKIN REP that this is a "Pre-Purchased Project" and all equipment is being purchased through "OMNIA" purchasing contracts. Please advise on who is responsible for purchasing the equipment.

RFI response: All mechanical equipment, labor, and tools are all part of Contract 'H'. OMNIA will not be purchasing anything for this contract.

REQUEST FOR INFORMATION FROM SOUTHEAST MECHANICAL CORP.:

1. Dwg M001.00 "Add Alt. #1" states to provide a "new" two stage thermostat in lieu of the "new" single stage thermostat as shown on plans. Dwg MD100.00 "Note #1" states that these thermostats are to remain as part of the base bid. Please clarify how single stage thermostats are to be installed (I'm assuming part of the base bid) if the thermostats are not being removed as part of the base bid? Should there be an additional Add Alt. associated with this work? (1) Alt. to remove and replace with single stage and (1) Alt. to remove and replace with two-stage? Please advise.

RFI response: Base bid: Single stage hot water or steam heating thermostats to remain. Cooling thermostats for new UVs or VRF to be added.

Alt 1: Original heating thermostats to be demolished. New two stage thermostats to be installed controlling existing hot water or steam heat and new UV or VRF cooling.

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2. The above-mentioned spec sections states that the general contractor needs to provide the owner's representative a field office for the duration of the project. Please advise if this is truly applicable to the project and if the MC is responsible for providing this. Please advise.

RFI response: No field office will need to be provided by any contract, omit requirement for field office.

3. 1.) ERU-1 through 5 states to provide a curb adapter with the new units. Please specify the existing curb dimensions.
Please advise.
2.) TX-3 & TX-4 show to be removed and replaced. Are we removing the existing curb or providing an adapter like we are for the ERU's?
3.) The roof mounted exhaust fan detail shows additional steel to be installed. Is this in relation to TX-1 & TX-2 only? Please provide more detailed structural information associated with these units, i.e. length of beams, size of beams, location of existing steel, etc.

**RFI response: 1. Adapter curb only required on ERU-5. ERU-1,2,3,4 shall utilize existing dunnage.
2. All (4) TX fans are to be removed and replaced. Acceptable to use existing curbs.
3. No additional steel is needed.**

4. Can a reflected ceiling plan be provided? Please advise.

RFI response: A reflected ceiling plan will not be provided. Most ceilings in areas of work are 2x2 acoustical ceiling tile system.

REQUEST FOR INFORMATION FROM NABER ELECTRIC CORP.:

1. Excavation and backfill for Electrical Work Naber Electrical Corp. Who is responsible for the excavation and backfill?

RFI response: As per the construction documents Contract 'E' is responsible for all site work, included but not limited to excavation, backfill, and restoration. Refer to 'E' drawings for additional information.

End of Addendum No. 1

SPECIAL PROVISIONS

These Special Provisions are in addition to the Plans, Specifications and the other Contract Documents and shall be part of this Agreement between the Owner and the Contractor. All references to "This Prime Contractor", "This Contractor" or "Contractor" refers to the **Mechanical Prime Contractor** and **Electrical Prime Contractor** per each respective building project and associated SED #. The following provisions shall apply for each individual project and each Prime Contractor associated along with it. In cases of contradictions, the most stringent Provision shall govern.

General Requirements for Each Prime Contractor

I. General

1. All dates, durations, etc. defined herein shall be in business days.
2. Except for the basic building permit, each Prime Contractor's price shall include all fees and other costs for securing and maintaining (by the Prime Contractors or their subcontractors) for the life of the job; all permits, PE licenses, connection fees, inspections, etc., applicable to, or customarily secured for the Work. This provision includes any applications and/or permits to be issued by utility companies in the name of the Prime Contractor, or the Owner, as required for the Work. Originals of all permits are to be issued in the name of the Prime Contractor as required for the Work. Each Prime Contractor shall furnish the Construction Manager with original copies of all permits prior to the commencement of the Work, and, shall prominently display a copy of all permits at a location agreed to with the Construction Manager.
3. One week prior to the start of physical work, each Prime Contractor shall provide two copies of a video taped recording of all existing conditions to the Construction Manager. This taping shall provide a record of all-existing buildings, grounds, exterior conditions and interior conditions. The Contractor shall schedule a representative of both the Owner and the Construction Manager to be present at this taping. In the absence of this record, each Prime Contractor shall be responsible for paying the costs associated with any and all repairs or replacements of existing materials and/ or conditions that were damaged in an area where the Prime Contractor is working or has worked, as may be deemed necessary by the Owner or the Construction Manager.
4. Each Prime Contractor is responsible for providing the required mock-ups defined by the Contract Documents out of sequence as needed by the Architect.
5. Each Prime Contractor is responsible for providing all required Engineered material calculations as defined by the contract documents.
6. Each Prime Contractor shall provide drinking water for his own employees.
7. On Site Communications. Each Prime Contractor shall provide, or otherwise see that, the project manager, or site managers, and/or responsible workers of each Prime Contractor and major subcontractor are equipped with cellular phones for the purpose of staying in contact with the Construction Manager.

8. Each Prime Contractor shall include in his base price the cost of all rigging and equipment required for the performance and installation of the Work.
9. **Each bidder who is awarded a contract must perform its work in compliance with all applicable CDC, OSHA and New York State protocols related to the COVID-19 pandemic, including social distancing, cleaning and disinfection protocols. Each bidder who is awarded a contract must ensure the individuals and entities retained by it to perform work comply with all applicable CDC, OSHA and New York State protocols related to the COVID-19 pandemic. Each bidder who is awarded a contract will be responsible to ensure the safety of those retained by the individuals and entities retained by it to perform its contract obligations and will be responsible for the means and the methods utilized to perform the Work. Each bidder who is awarded a contract will be required to cooperate with other contractors engaged by the School District/Owner in providing access to construction areas at the Project site while maintaining compliance with all applicable CDC, OSHA and New York State protocols related to the COVID-19 pandemic.**

Any fines imposed or incurred for violation(s) of the Executive Orders of the Governor of New York State related to the COVID-19 pandemic as well as for violation(s) of all applicable CDC, OSHA and New York State protocols related to the COVID-19 pandemic will be the sole responsibility of the bidder awarded a contract whose conduct caused the violation(s).

Each bidder awarded a contract must implement and follow all NYS guidelines and regulations regarding COVID-19. Including but not limited to hand washing/sanitizing stations, disinfecting, social distancing, contact tracing logs, etc... COVID-19 protocols, policy and procedures must be detailed and included in each prime contractor's safety manual and logistics plan and is to be submitted to the Construction Manager. This requirement extends to all subcontractors of each prime contractor.

Each bidder awarded a contract will also be required to abide by the School District/ Owner's most recent requirements for COVID protection, which may continue to adjust due to Federal/State and Local government policies. Contractors not willing to abide by the School District/ Owner's requirements will not be able to access the School District/Owner's property to execute their work, and will be neglecting the terms of their contract.

II. Schedule

1. All Contractors are to recognize that the Project Schedule is of critical importance to the Owner. All aspects of construction must reflect a 'time is of the essence' construction strategy. The attached 'Bid Schedules' serves as a guide of critical milestone dates to the Project. Failure to meet intermediate milestone dates will jeopardize the overall Project Schedule. This failure will mandate Contractor(s) to, increase staff, work overtime, or use other means to recover time, at the costs of those Contractor(s) responsible for such delays. In addition, all costs due to delays in completion of the Work, which require additional Custodial Overtime, Construction Management services, Architectural services, and Engineering services beyond the Work duration in the Bid Schedule, shall be borne by Contractor(s) responsible for delays.

2. Each contractor, prior to being awarded the contract shall prepare and submit a Preliminary Master Project Schedule for their Work. **Within (3) weeks of NOA (Notice of Award) all Prime Contractors will provide a coordinated Draft master schedule.** Each Prime's Project Schedule are to reflect all requirements for submittals, material and equipment procurement, material stockpiling, setting up Contractor's staging area and surveying of existing conditions. These Schedules, reflecting the critical milestone dates established by the attached 'Bid Schedule', are to be coordinated and shall be inclusive of other Prime Contractor's activity. The "Final" agreed upon overall schedule of work shall be developed and maintained by the Prime Contractor for Mechanical Construction in conjunction with the Construction Manager utilizing each Prime Contractor's Preliminary and updated Schedule(s). Specific relationships between Contractors, sequencing of activities, phasing, and critical "ties" of coordinated Work must be detailed on the Project Schedule. All Contractors shall utilize "Sure Track Project Manager 3.0-" as produced by Primavera Systems, Inc., -or- equal platform producing Gant Style Scheduling.
3. All Prime Contractors shall review the completed "Final" detailed construction schedule and acknowledge their acceptance of this schedule by signing a copy to be kept on record by the Construction Manager. This agreed upon schedule must incorporate all milestone dates and shall be established within four (4) weeks of Notice of Award.
4. The Prime Contractor for Mechanical Construction shall update the detailed construction schedule with the Construction Manager and issue copies to the other Prime Contractors, the Owner, Construction Manager, and the Architect monthly. Each Prime Contractor shall provide the Prime Contractor for Mechanical Construction with all information necessary to provide these updates.
5. Each Prime Contractor is to submit a schedule of projected fabrication on long lead items (items requiring four weeks and over to fabricate) three weeks after Notice of Award. Progress/Status reports on fabrication to be submitted to the Construction Manager every two weeks. 'Rate of Change' chart and marked up shop drawings to be included in these reports.
6. Each Prime Contractor shall be responsible for coordinating and expediting their fabrication and delivery schedules and keeping the Construction Manager informed as to their progress and their anticipated ability to stay on schedule. Should it become necessary (in the opinion of the Construction Manager) to supplement the Prime Contractor's expediting efforts in order to maintain job progress, the Construction Manager may elect to charge all costs incurred to said Prime Contractor.
7. In the event that Owner makes special arrangements to open a building at the request of a Contractor and the Contractor does not show, the Prime Contractor shall pay the Owner all costs incurred. All parties agree that any action taken to enforce this requirement shall not be construed by any Prime Contractor or its subcontractors/suppliers, as a reason for a claim (for either time or money) for delay to the Work or to the Prime Contractor, its subcontractors, or suppliers.
8. The Owner shall take partial occupancy of the building's renovated spaces in accordance with the dates established by the Bid Schedule and the Special Provisions. The Contractors shall perform all Work necessary to maintain the Owner's move-in and occupancy schedule.
9. The Contractors shall include in their base price, all out of sequence Work and any Work required to be performed during overtime hours or non-working hours necessary to maintain the Master Schedule, the Prime Contractors' project schedule, or, the Owner's move-in schedule.

III. Submittal Milestone Requirements

Submittal Priorities

The following submittal dates (in business days) are critical to allow for proper fabrication timeframes to ensure timely completion of the project to meet the attached bid schedule. A complete listing of all submittal requirements is located in "Section 01 3300 Submissions", which shall be accompanied by each division's specific submittal requirements.

Major Mechanical Construction Submittals

Scaffolding and/or Stair tower-(may require PE Stamp)	15 days from Notice of Award
Bracing/Shoring-(may require PE Stamp)	15 days from Notice of Award
Rebar/Reinforcing Shop Drawings	15 days from Notice of Award
Structural Steel/Decking	15 days from Notice of Award
Masonry Submittals/Shop Drawings	15 days from Notice of Award
Interior Finishes	20 days from Notice of Award
Casework	20 days from Notice of Award
All remaining Submittals with-in	20 days from Notice of Award

Major HVAC Equipment

Duct Work	15 days from Notice of Award
Equipment	15 days from Notice of Award
Controls	20 days from Notice of Award
Hot/Chilled Piping and Enclosures	20 days from Notice of Award
HVAC Shop Drawings	20 days from Notice of Award
All remaining Submittals with-in	20 days from Notice of Award

Major Electrical Equipment

Service Equipment	15 days from Notice of Award
Fire Alarm	15 days from Notice of Award
All remaining Submittal with-in	20 days from Notice of Award

IV. Construction Milestones

All Prime Contractors:

Special consideration should be made to the requirements of the project bid schedule attached in the Specifications. Prime Contractors will be required to man each contract to meet the milestone dates indicated below and/or in the contract bid schedule. All costs should be included in the bid for working multiple shifts, nights, weekends, and holidays to complete each phase of the project.

Time frames indicated show milestone dates required to be met by all Prime Contractors. These areas, once completed, will be punch-listed and given partial occupancy for the Owner to occupy. Occupying

these areas is critical to the Owner. If said dates are not met Liquidated damages may be assessed and back-charged to the responsible Contractor.

KEY MILESTONE DATES:

Mamaroneck Elementary School

Air Conditioning and Ventilation Upgrades: Reference attached schedule for further schedule component breakdown, but key milestones are:

- Submittals & Shop Drawings: **12/12/23 through 1/8/24**
- Fabrication, equipment lead times: **1/9/24 through 6/24/24**
- Mobilization: **6/27/24**
- Equipment Start Up: **8/27/24 through 9/2/24**
- Commissioning: **9/3/24 through 9/30/24**
- Substantial Completion: **9/30/24**

Any work that cannot be completed by the Substantial Completion Dates above, must be completed after-hours. After-hours are defined within section "VI. SCHOOL OPERATIONS & CONTRACTOR WORK HOURS".

V. Summary Overview

Introduction for All Buildings & Projects

Each building must be ready for the **2024-25** school year which will begin shortly after **August 31, 2024** and each Prime Contractor shall reference the dated set forth in the Bid Schedule . This requires all trades to work multiple shifts to execute the work-as needed. After **August 31, 2024**, each classroom that has been-or-is being worked on, must be able to produce fresh air, based on the NYS/Federal/NYCRR 155.5 Codes, Rules and Regulations. Each Unit must be able to supply heat to the room, no later than September 15th 2024- no exceptions taken. If any of the contractors will be unable to meet this requirement, the School District reserves their right to take over the work in accordance with the contract documents.

Commissioning Agent: The District will be obtaining the services of a Commissioning Agent as a Third-Party professional. All contracts associated with the installation of new mechanical equipment, including the Mechanical Equipment Vendor, Controls Contractor, the Prime Mechanical Contractor and the Prime Electrical Contractor agrees to work in harmony with the Commissioning Agent and the data provided, in line with the Contract Documents. This includes any interim punch lists, final punch lists, equipment tagging, testing and balancing, equipment scheduling, daily/weekly oversight and similar. Reference the section 230800 within the contract specifications.

VI. SCHOOL OPERATIONS & CONTRACTOR WORK HOURS

Each project will impact many areas within existing buildings, which in some cases will remain in operation during construction.

All contract work occurring **over the summer recess**, outside of normal school session, may be performed during the hours of 7:00am and 4:00pm, with second-shift work happening continuously until 11:00pm - once approved by the CM & Owner. Any other contract work impacting the operation of the school, at any point over the project schedule, must be performed on an after-hours schedule, weekends or school holidays.

All contract work being performed **before and after the summer recess** – if permitted, during normal school session, will need to be perform after-hours (3:30pm-11:00pm). If approved, the contractor is responsible for abiding by the local sound ordinance for construction activities, and will be responsible for any fines they may incur if not followed. All punch-list work shall be performed after school hours on a second-shift schedule.

Each Prime Contractor may work Saturday & Sundays to make up for lost time (Saturday/Sunday work will be required if necessary to meet deadline) with prior approval from the Owner and after the Contractor has verified allowable working hours by town ordinance. If any Prime Contractor must work on either a Saturday, Sunday or a Holiday, in order to make up time that has been lost due to the same contractor, that Contractor will be responsible to reimburse the District for any custodial overtime costs.

VII. SAFETY / LOGISTICS/STORAGE

1. Two weeks after the receipt of the Notice of Award, each Prime Contractor for Mechanical Construction and Electrical Construction shall provide a Site Safety/Logistics Plan to the Construction Manager. The site logistics plan should minimally include locations of the **eight-foot high temporary fence**, traffic plans for deliveries and removals, refuse container locations, crane locations, pick locations, boom radius, and lift locations. This plan shall also show the location of all staging and storage areas, non-rated and fire-rated partitions used to separate construction and school areas, made with plywood and/or gypsum wallboard, etc. The logistical information represented by the construction documents shall serve as a minimal guide.
2. Each prime contractor is to submit their corporate safety policy (2) weeks after Notice of Award . Plan to minimally meet OSHA standards. Each Prime Contractor shall make the participation of their subcontractors in this program mandatory. These Safety Programs should be a detailed Company Policy defining the specifics as to how a safe work environment shall be maintained
3. Each Prime Contractor and Sub Contractors shall schedule weekly safety meetings (Job Site Safety Talks) and submit meeting minutes indicating attendees and topics to the Construction Manager.
4. Each Prime Contractor is to identify in writing to the Construction Manager their "OSHA Competent Person Regarding Safety" Definition. "Competent person" means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or

dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

5. All flagmen required for deliveries to the site are to be furnished by the Prime Contractor responsible for the delivery. Any and all deliveries crossing the site or student traffic areas shall be escorted by flagmen. All flagmen shall wear orange vests. All deliveries shall be scheduled and coordinated with the Construction Manager and the Owner. Delivery blackout periods for bus traffic interference shall be established with the Construction Manager.
6. Smoking, firearms, alcoholic beverages, and indecent photography are expressly prohibited on all school properties. All persons representing Contractors, subcontractors or suppliers shall wear shirts, long pants and other proper attire while on school property. All persons representing Contractors, subcontractors or suppliers shall conduct themselves in a professional manner consistent with the rules and policies of The School District, and the New York State Education Department while on school property or otherwise representing this project.
7. Each Prime Contractor will ensure that all their employees, while on school property, will wear hard hats, high visibility vests, and ID badges at all times. Anyone on site without this the proper Personal Protection Equipment (PPE) will be escorted off school property.
8. Each Prime Contractor will ensure that every employee working on this project has completed a 10-hour OSHA training course. Any worker that cannot present a 10-hour OSHA safety-training card will be escorted off the property.
9. Food truck vendors for Construction Workers will only be allowed on school property with prior authorization from the School District. The District may allow or discontinue food vendor truck service at any time for any reason.
10. **Identification Badges.** Each Prime Contractor will provide an ID badge for each of their field personnel prior to coming on school property. All workmen shall display the badge on their person while on site, and at all times. Failure to wear identification badge at all times will result in the immediate removal from the jobsite.
11. Each Prime Contractor is responsible for their own storage and personnel trailers at each site. Each Contractor will be required to supply man trailers and storage box trailers as required. All costs related to its delivery, construction, protection, power, etc. is borne by the individual Contractors utilizing space. The Owner WILL NOT PROVIDE STORAGE SPACE. The placement of these trailers will be strictly limited to predetermined locations. Approval of the placement of any trailer or storage box must be received from the Construction Manager.
12. The parking for construction personnel shall be limited to designated parking areas only. Failure to abide by this rule will result in towing of cars at the expense of the Prime Contractor whom employs the individual.
13. All delivery vehicles/trucks/machinery/etc. permitted on site, must be equipped with back-up alarms and enter through the designated access points. Failure to demonstrate this ability will result in cancellation of delivery or stoppage of work. All delays associated with this cancellation will be the responsibility of the Prime Contractor responsible for the Work involved.

14. All temporary construction site fences installed by any Contractor shall be installed with a tightly woven, blind screen mesh. This mesh is to be installed on the "construction" side of the fence. The Mechanical Contractor will maintain all fencing daily and lock gates at the end of the day.
15. All crane picks, material delivery, etc. must be coordinated so as not to lift over any occupied area of the building. If absolutely necessary, this work shall be done on off hours to ensure the safety of the building occupants. Crane location must be carefully chosen to ensure the safety of building occupants. Crane picks must also not be conducted during academic hours within 20' of an occupied building.
16. The Owner or Construction Manager reserve the right to have all hoisting equipment periodically inspected by an independent inspector whose findings will be binding. The Prime Contractor at its own expense must make corrections before continuing work. The Owner or Construction Manager will not assume any responsibility for the safe operation of any hoisting equipment by exercising this right. Each Prime Contractor or Sub Contractor shall cooperate with the inspector by allowing time for the inspection. The Prime Contractor shall be notified 24 hours prior to the time of the inspection. These inspections do not release the Prime Contractor of their responsibility to provide all engineering, permits, and inspections as required by OSHA or the SED prior to use of any hoisting equipment.
17. All vehicular traffic (personal vehicles, trucks, equipment, deliveries, etc.) are to use the designated entrances as outlined on the Logistics Drawings. Access by other routes is to be on exception basis only.

VIII. SUBMITTALS

1. Each copy of each submittal shall have attached as the cover page the specified "Submittal Cover Sheet". All information requested in "Section 01 33 00 Submittal Requirements" shall be provided by the respective Contractor. Submittals will be returned without review if the cover sheet is not accurately completed.
2. Each Prime Contractor shall generate a complete "Submittal Log" within one business week of the Notice of Award. This log is to list all required submittals specific to your trade as detailed in the Project Manual/Specs. See enclosed form for your use. "ROJ" stands for Required on Job to assist your judgment of the time gap between submission, Architect review, fabrication/procurement and on-site need for putting the work item into place.
3. Each Prime Contractor shall review all submissions for completeness. Each Prime Contractor is responsible to stamp all shop drawings prior to submission to the Architect. The Architect will not review any shop drawings unless first reviewed by said Contractor. Bundle similar material submissions for proper review. Use the Architects Submittal cover sheet located in the Specifications
4. **All submissions shall be sent electronically to the Architect. Submittals will be processed and stored electronically, with access available to all Prime Contractors for coordination. The District has elected to use the program NewForma for all project correspondence.**
5. Each Prime Contractor shall provide one transmittal for each submission package identifying each unique submission individually. For each submittal with the submission package, the Prime Contractor shall identify the length of the delivery time and the necessary "last date" an item may be received on site.

Each Prime Contractor shall keep a log of all submissions in a manner prescribed by the Construction Manager and the attached form. Minimally, the Contractor shall update this submittal log biweekly and provide a copy to the Construction Manager for review and information.

6. Each Prime Contractor shall copy the Construction Manager's Project Manager on all transmittals, correspondence, RFI's and any other documents sent to the Architect, his consultants or the Owner
7. At the direction of the Construction Manager, each Prime Contractor shall provide copies of either document and/or data files for any requested document on one of the following programs: Microsoft Word, Microsoft Excel, or Primavera's SureTrack – Project Manager 2.0 scheduling program.

IX. LINE, LEVELS & GRADE

1. Each Prime Contractor for Mechanical Construction shall establish a baseline and benchmark system for each area of renovation or component. This survey work shall be completed by a NYS licensed professional surveyor. The surveyor(s) employed to establish this system or to extend and maintain an existing benchmark system for the work of other trades shall not have less than five years' experience in performing construction surveys similar to the work they will perform for this project. The other Prime Contractors and their subcontractors shall be responsible for extending these lines, levels and grades, and for performing all layouts for their own work. Each Prime Contractor is solely responsible for any damage or loss due to incorrect extension of lines, level or grades in their layout. Each Prime Contractor and their subcontractors shall be responsible for the accuracy with respect to the layout of their work. Any discrepancies or errors in the drawings, perceived by a Prime Contractor or subcontractor, shall be immediately reported to the Construction Manager and Architect. If any corrections are necessary, they shall be executed in accordance with procedures approved by the Construction Manager.
2. Each Prime Contractor and their subcontractors shall be responsible to offset, or to protect, their markings from anything that may disturb them.
3. Each Prime Contractor for Mechanical Construction and all other Contracts will build to existing conditions of the site and joining buildings. To confirm line, level and grade, the Prime Mechanical Construction Contractor will employ a licensed NYS surveyor by the end of the project and produce an 'As-Built' drawing including final elevations and boundaries of any structural or earth modifications.

X. MANAGEMENT OF WORK

1. Each Prime Contractor shall employ (from one week after Notice of Award until punch-list and closeout are complete) at a minimum a full-time Project Manager and a separate dedicated full-time on-site Superintendent. The Project Manager and Site Superintendent shall represent the Prime Contractor. All communications given to the Project Manager or Site Superintendent -either verbal or written- shall be binding. Important communications shall be so confirmed in writing.

If a contractor is awarded multiple contracts, they must include multiple superintendents and foreman per building/contracts. There is no exception to this requirement.

2. Each Prime Contractor shall provide copies of their daily construction reports to the Construction Manager's either through the Submittal Program or Electronically via E-mail. These reports shall be submitted no later than 10:00am the following workday. The daily reports shall provide detailed information concerning the Prime Contractors' activities and operation only. Daily Construction Reports to the Construction Manager shall detail manpower for each subcontractor and direct work-force, weather and work activities on site.
3. Each Prime Contractor shall have responsible representation at the **MANDATORY** weekly job meetings held at the Construction Manager's job office from Notice of Award thru close out. These meetings will be held to arrange for a satisfactory coordination of all building trades so as not to impede job progress. Prime Contractors or subcontractors who fail to attend the meetings will be **back-charged \$500.00 per each occurrence.**
4. Each Prime Contractor shall submit two-week look ahead schedules identifying the anticipated activity, and material needs for all of the work scheduled to be formed by the Prime Contractor and his subcontractors for the identified time period. Each Prime Contractor shall keep this schedule current and provide a biweekly report to the Construction Manager concerning the actual performance and activity compared to the two-week look ahead. The two-week look ahead shall be uploaded to the submittal Program by the End of Business of each weekly meeting.
5. The MEP Coordination shall follow the guidelines stated below:
 - a. Each Prime Contractor shall have sufficient responsible representatives at mechanical/electrical/plumbing coordination meetings held at a location to be determined. These meetings shall be held as frequently as required by the Construction Manager or any other Prime Contractor. The Mechanical Construction Prime Contractor shall also include a representative at these meetings.
 - b. All Contractors are expected to jointly produce coordination drawings. Prime Contractors are to first submit their respective shop drawings for approval, to the Owner's Architect and Engineers in order to make any necessary changes prior to going through the coordination process. The HVAC Contractor shall provide orange line CAD Drawings showing all of the approved ductwork. The HVAC Contractor shall locate on these CAD Drawings all piping in orange pencil/ lines. The Plumbing Contractor shall locate the plumbing lines on these CAD Drawings in blue pencil/ lines. The Electrical Contractor shall indicate conduit runs in green pencil/ lines. The Mechanical Construction Prime will have the last coordination review. As each coordination drawing is completed, Contractors are to meet with the Construction Manager and the Architect to review and resolve all identified conflicts on the coordination drawings.

Note: for areas without HVAC work, the Mechanical Prime shall provide the necessary CAD Drawings with black line. All coordination meetings will be held at the Construction Manager's office.
 - c. It is the responsibility of the Prime Contractor for Mechanical Construction to coordinate all points of entry through the foundations, slab penetrations, sleeves, roof openings and penetrations, wall openings and penetrations etc. with the work of all other Contractors, including but not limited to M. E. P. Primes, kitchen equipment, casework and casework accessories.

- d. It is the responsibility of each Prime Contractor to coordinate with the architectural details and elements, such as soffits, variations in ceiling height and materials, fire/smoke partitions or barriers, folding partition, doors, lockers, and any other Mechanical Construction items that impact the space above the ceiling or otherwise requiring light framing and/or miscellaneous support or bracing.
6. Site cleanliness: If any Prime Contractor fails to keep the site safe and clean within four hours of being notified by the Construction Manager either verbally or in writing, the Construction Manager will have this work performed and back charged to the appropriate Prime Contractor at prevailing overtime rates plus 15%. Notice to field personnel is deemed notice to this Prime Contractor.
7. Dust and fume control is essential to the reduction of health risks to the surrounding personnel. Methods of dust control shall include but not be limited to the following:
 - a. Adequate ventilation.
 - b. Wetting down.
 - c. Keeping bags of insulating materials, cement, etc. closed.
 - d. Controlled mixing of materials under field conditions.
 - e. Special attention should be utilized in sawing of insulation and certain acoustical materials and storage of materials.
 - f. Job housekeeping must be maintained.
 - g. Advising all personnel of hazardous conditions, including supervisors and workmen.
 - h. Installing temporary barriers.
 - i. Each Prime Contractor shall be responsible for instituting the above policies to insure minimal impact to surrounding occupied areas.
8. Each Prime Contractor shall confine operations on the premises to areas designated by the Construction Manager and permitted by law, ordinances, permits and the Contract Documents, and shall not unreasonably encumber the premises with any materials or equipment. Each Prime Contractor shall coordinate all of his operations with, and secure approval from, the Construction Manager before using any portion of the Premises. Field personnel are to be confined to the work area assigned.
9. Where material is specified to be furnished by others or furnished and delivered only, the Prime Contractor installing the material shall be responsible for scheduling the delivery and receiving, unloading, storing, handling, relocating, hoisting, distribution, laying out and installing this material. Upon receipt of material by the Prime Contractor installing the material, any risk of loss and damage of the material shall be the responsibility of that Prime Contractor accepting the material.
10. All Prime Contractors and their subcontractors shall allow sufficient time to inspect and accept the work of the previous Contractors. Should any discrepancies be discovered, The Construction Manager shall be notified sufficiently in advance so that corrective action can be agreed to and taken (by all necessary parties) without affecting the progress of any Contractor or the work.
11. All Prime Contractors are advised to exert the utmost care and diligence when working in or near any existing buildings or site work which is to remain. The absence of protection around such items shall not excuse any of the Prime Contractors from their liability to provide protection. Any damages to the existing buildings, sitework or facilities shall be repaired and expensed to the responsible Prime Contractor.

12. Each Prime Contractor shall be solely responsible to remove and replace the existing ceiling tiles and grid in areas of the existing building where their work is required but new ceilings are not scheduled. In the event that the existing ceilings are damaged and cannot be replaced to the satisfaction of the Owner, the responsible Prime Contractor shall be solely responsible for replacing, in kind, the existing ceilings with new tile and grid. A qualified Contractor, acceptable to the Owner, shall perform all ceiling replacements.
13. All disconnect and/or tie-in work involving any utilities that would interfere with the ongoing operations of the Owner shall be completed on an after-hours basis. The performance of this work shall be projected on the required schedules and the Owners Representative is to be notified at least forty-eight hours in advance of commencing with this work. All overtime and standby personnel necessary to complete these tie-ins shall be the responsibility of the Prime Contractor performing the work.
14. At the same time the Prime Contractor submits their Insurance Certificate they shall also submit to the Construction Manager the labor rates of each category of labor for which he or his subcontractors shall employ (either directly or indirectly). This information shall be itemized in the format shown below.

Contractor's Name					
Contractor's Address					
Contractor's Office Phone					
Contractor's Fax Number					
Contractor's Email Address					
Labor Rate Breakdown					
Worker's Title		Journey man	1.5 Rate	Fore man	1.5 Rate
Base Hourly Rate					
Payroll Tax & Insurance:	% Per Hr				
FICA					
Federal Unemployment					
State					
Workers Compensation					
Disability					
Other (Explanation Required)					
Subtotal					
Benefits:	\$ Per Hr				
Vacation					
Health & Welfare					
Pension					
Annuity					
401K Fund					

Other (Explanation Required)					
Other (Explanation Required)					
Subtotal					
Hourly Labor Rate					

XI. REQUEST FOR INFORMATION (RFIs)

1. Refer to the specifications for a complete explanation of the Request For Information process, and copy of the RFI form. RFIs will be corresponded electronically and will be required for an interpretation needed by the Architect of the Drawings and Specifications. Questions asked within the field to the Architect or Engineer, shall be recorded by the prime contractor asking the question and submitted via RFI for formality.

XII. TESTING/INSPECTIONS

1. If NYSED, the Architect or Owner or determines that any work requires special inspection, testing or approval, the Construction Manager will instruct the Prime Contractor of such special inspection, or testing. If such special inspection or testing reveals a failure of the work to comply with the requirements of the Contract Documents, the Prime Contractor responsible shall bear all costs thereof, including compensation for the Architect's, Construction Manager, and Testing Lab costs.
2. Each Prime Contractor shall furnish incidental labor to:
 - a. Provide access to the work to be tested, sampled and inspected.
 - b. Obtain and handle samples at the project site or at the source of the product to be tested.
 - c. Facilitate inspections, samplings and tests.
 - d. Coordinate with the Owners Rep and testing lab and submit schedule of required tests one week in advance.
 - e. Coordinate inspections
3. As they relate to the timely prosecution of the work, all Prime Contractors shall coordinate independent testing and inspections. If any Prime fails to coordinate such inspections and additional costs are incurred to the Owner, the Prime Contractor will be responsible for that inspection cost.
4. **The following is a list of intended controlled inspections:**
 - a. Soil bearing, sub-grade inspection and/or compaction
 - b. Concrete field and plant testing & rebar placement
 - c. Masonry or stone field inspection, mortar sampling, reinforcement placement inspection
 - d. Structural steel field welding, bolting, connections, and metal deck
 - e. Asphalt and sub-base inspection
 - f. Soil compaction, density and sieve analysis testing, soil bearing
 - g. Water and air infiltration for windows
 - h. Roofing & flashing – **by Contractor performing the work**
 - i. Waterproofing

- j. Under slab plumbing work – **by Contractor performing the work**
 - k. Firestopping
 - l. Fireproofing
 - m. Underwriters/UL inspection – **by Contractor performing the work**
 - n. Asbestos air monitoring
5. The Architect and Construction Manager shall be notified twenty-four hours prior to the need of testing, in the event the Contractor does not give proper notification and the work is done with no test, that Contractor will bear all costs for such tests.
6. **All controlled inspection testing costs will be paid for by the Owner except as noted above.**
7. As part of the two-week look ahead, each Prime Contractor shall provide the Construction Manager with a schedule of all anticipated on-site Owner supplied inspections (if any are required). The Prime Contractor shall submit all requests for Owner-supplied inspection for all items of controlled inspection by 1:30 p.m. of the day previous.

XIII. CHANGES TO THE WORK

1. Refer to Article 7 of the General Conditions for additional information pertaining to this subject.
2. All change proposals for extra work by the Prime Contractors shall be submitted to the Construction Manager, with a complete labor and material breakdown and on the basis of net difference in quantities. The Owner reserves the right to request adequate back up such as invoices, subcontractor quotes, etc., to substantiate the change order cost. Current labor rates for all trades are to be submitted to the Construction Manager by the respective Prime Contractors at the first scheduled job meeting. When both additions and deductions are involved in any one change, the allowance for overhead and profit shall be figured on the basis of net increase or decrease.

All change requests shall follow the cost breakdown found in § 7.2.1 of Article 7 located in the General Conditions.

XIV. SCHEDULE OF VALUES/PAYMENTS

1. Within one week after Notice of Award , the Prime Contractor shall submit a detailed billing breakdown on the AIA G702/ G703 – CM Version form for approval by Construction Manager and Architect. No payments will be made until such billing breakdown is approved. Each Prime Contractor will be required to breakdown the project cost for each building project, by NYSED #.
2. The schedule of values will be reviewed and adjusted if necessary. Once approved, the schedule of values is to be used for the AIA pay application. The schedule of value will take into account and include at minimum the following items:
 - a. Bonds/Insurance based on actual invoice amount
 - b. Labor and material shown per line items greater than \$5,000 in work.
 - c. Submittals - 1% of contract sum
 - d. Punch list - 1% of contract sum
 - e. Close-out documents/warranties - 3% of the contract sum

- f. Meeting Attendance & Meeting Documentation - 2% of the contract sum
- g. Allowances
- h. Approved Alternates
- i. Labor and Material breakdown for each line Item

Note: Punch list value will be dispersed only when the work has been confirmed to be completed 100%. ALL PAYMENT APPLICATIONS SHALL INCLUDE A 5% RETAINAGE FACTOR.

3. The Owner has elected to require the Prime Contractor to submit releases of liens with respect to all Work previously performed and for which payments were made under a preceding application. Beginning with the second payment requisition and with each subsequent payment requisition, each Prime Contractor shall furnish to Owner the following documents:
 - a. Labor and/or Materials Affidavit
 - b. Daily and Weekly Wage Affidavit
 - c. Prime Contractor's-Partial Release and Wavier of Lien
4. Monthly Payment Applications for Payments shall be made as per Article 9 of the General Conditions of the Contract
5. All Payment Applications for Payment are to include certified payroll for each employee working directly under the Prime Contractor, as well as all subcontractors working under agreements with the Prime Contractor.
6. All Payment Applications for Payment are to include 10-Hour (or higher) OSHA cards for all workers listed on the certified payrolls.

XV. PUNCH LIST

1. Upon substantial completion of each phase of work, each Prime Contractor is to submit to the Owner/Architect/Construction Manager a letter declaring the work is substantial complete. Included with said letter is to be the Contractor's punchlist.

Upon the receipt of above, the Construction Manager will schedule with the Owner, Architect, and Contractor a walk through to develop an Owner's punchlist. This Owner's punchlist agreed by all parties shall serve as the only punchlist. Upon failure to complete the Owner's punchlist within four weeks from receipt, the Owner reserves the right to complete same work and backcharge the costs of material, labor, supervision and other incidental costs.

XVI. INSURANCE/INDEMNIFICATION

1. All Prime Contractors must issue a Certificate of Insurance with liability limits as defined in the General Conditions and Division 01, naming Triton Construction Company, The Architect, The Architect's Consultants and the School District as an 'Additional Insured' in addition to all other parties as stipulated in the General Conditions of the Contract in the project manual.

2. All Prime Contractors agree to indemnify and hold harmless Triton Construction Company, The Architect, The Architect's Consultants, the School District, its agents and employees in addition to all other parties as stipulated in the General Conditions of the Contract in the project manual.
3. All Prime Contractors and Sub-Contractors/sub-subcontractor's/vendors/etc. insurance/indemnification shall comply with Article 11 "Insurance" as specified in the General Conditions of the Contract in the project manual.

Specific Scope Requirements for Each Prime Contractor

Each Prime Contractor is to refer to the technical specifications and drawings for further, or more comprehensive requirements.

Prime Contractor for Mechanical Construction (PCM)

1. This Prime Contractor shall provide, for all the building construction work, all necessary site refuse containers and disposal services to maintain the site in a clean and safe condition. This Prime Contractor shall be responsible for emptying and/or replacing all containers on a regular basis or when full. All containers and disposal services shall be provided by a single entity. This Prime Contractor shall provide sufficient labor to keep the site clean on a daily basis and shall be responsible for providing the daily broom cleaning as necessary to maintain site safety.
2. This Prime Contractor shall coordinate with the Electrical Contractor to allow all Contractors unabated access to the building and surrounding work areas.
3. This Prime Contractor shall provide and maintain temporary chemical toilets for the duration of the project. The quantity of these toilets should be as required to properly maintain sanitary facilities and easy access for the personnel on the job. This quantity shall be a minimum of two toilets per major work area. This requirement shall include all necessary paper products, supplies and services, as well as the maintenance of these toilets until all work is complete and the Owner assumes partial occupancy of the completed work areas. As a minimum, this Contractor shall include the pumping and servicing of these toilets twice per week.
4. All Scaffolding or Stair Towers shall be designed and stamped by a licensed NYS PE. When designing this scaffolding consideration should be given to the environment, scaffolding system being used, means of access, means of tying the scaffolding to the structure, location, length of time to be erected, climate conditions, wrapping/containment of building, purpose of use, loadings, etc. all scaffolding and/ or stair tower access points must be secured while not in use. If and when needed, the scaffolding may be used for access by other Prime Contractors during construction- this contractor will not restrict access by others using the scaffold.
5. This Prime Contractor shall provide testing and inspection of the scaffolding on a daily basis and per governing regulation (e.g.,: OSHA). A log of these inspections are to be kept in the PCM's job trailer, along with inspections tags that identify the status of the scaffolding (inspection dates, okay to use, caution, danger). Report to the Construction Manager all corrective work required through the course of the project.

6. As shown on the logistics plan, this Prime Contractor shall include in his bid price, all costs to provide an **8' ht.** rental type chain link construction fencing and gates. All fencing shall have a tightly woven, blind screen mesh installed on the "construction" side of the fence. Mesh to be dark green or black. When directed by the Construction Manager, this Prime Contractor shall remove and dispose of this fencing and all related materials. Gates for man access shall be passive to the exterior of the jobsite during the event of an emergency, but remain closed for un-authorized entry during construction. All gates shall be locked when the site is not active, with a double-keyed system, granting the District access to the site at all times.
7. This Prime Contractor will repair, replace, correct, or finish grade, topsoil, and seed all areas with-in the construction site and staging area that was disturbed by the work of this project.
8. This Prime Contractor shall provide and maintain all temporary plastic barriers, partition walls, doors, hardware and plywood barriers for the duration of the project to separate work areas from public areas and to maintain security, dust, and noise control. Temporary partitions and doors will be painted with 1x coat of primer and 2x coats of paint for esthetics. Where needed, temporary fire-rated systems will need to be installed to maintain the build's existing fire code conformance.
9. Construction Signage. The PCM shall include in his base price all construction signage required by OSHA and the Site Logistics plans. At the site fence, "Construction Area keep out", "Hard Hats Required" and "Authorized personal only" signage shall be posted every 10' on site fencing. This Prime Contractor shall reference the logistics plans for each project to include any other signage designated for entry gates. Signs shall be made of either metal or durable PVC to endure the project duration.

This Prime Contractor shall also include signage for COVID-19 protection, alike the construction signage, stating "Keep Social Distance", "Wear Mask" and "Sanitize Frequently".

10. Final Cleaning: The PCM shall provide a final cleaning service to prepare all areas of interior construction for use and to provide a final cleaning after substantial completion is achieved and after direction to provide such service is received from the Construction Manager. This work shall be completed in cooperation with the building maintenance staff and their respective procedures.
11. Equipment Pads: Unless specifically noted on the contract documents, the associated Prime Contractor for the Equipment (PCM, PCE) will provide all **interior and exterior** concrete equipment pads whether shown on the contract documents or not.

This Prime Contractor will provide any modifications to existing or provide new equipment pads for mechanical equipment, as called out on the drawings.
12. This Prime Contractor is responsible for protection of finished work. Including but not limited to; floors, walls, equipment and ceilings. This Prime Contractor will provide, maintain, and remove the appropriate protection materials necessary to adequately protect his finished product.
13. This Prime Contractor should note there are numerous areas where the existing ceilings are remaining. This Contractor will be required to remove and reinstall any ceilings displaced by installation of this Contractor's Work. If open ceilings are not replaced within a twenty-four hour period after a request by the Construction Manager, either verbal or written, the Construction Manager will have said ceilings reinstalled and all related costs will be back charged to said Contractor.
14. Unless otherwise noted in the construction documents, this Prime Contractor will repair and patch all walls, floors, and ceilings to match adjacent finishes after the removal of interior partitions, ceilings, floors,

Mechanical conduit, piping and ductwork. This includes all walls and ceilings above finished ceilings or spaces. Each Prime Contractor will cut and cap their own work inside finished walls, floors and ceilings.

15. This Prime Contractor shall provide fire extinguishers for the life of the project, the extinguishers are to be hung and identified as per OSHA requirements (1 per 3000 sq ft, or better). These extinguishers are to be re-charged and inspected for the life of the project.
16. If due to location of fabrication plant, a local storage yard is required, all cost associated with this storage yard including receiving, unloading, storing, shake-out, reloading, and delivery to the site shall be this Prime Contractors' cost.
 - a) The Owner may have an Inspector at the plant during the fabrication period. Appropriate access shall be provided at all times for this individual.
17. Abatement Work: If identified in the documents, this Prime Contractor will be responsible to hire a qualified and DOL licensed Abatement Contractor to perform ALL Hazardous Material removal at areas indicated in the drawings. This work will only take place during the summer recess or over an extended break/holiday with the Owner's approval.

In the event buildings will be occupied over the summer recess all abatement activities shall take place after 3:30pm and no later than 7:00am each morning.

18. Under slab MEP Trenching at New & Existing Slabs:

New Slabs: The Prime Contractor for Mechanical Construction (PCM) will be responsible to coordinate with the MEP contractors and Construction Manager through the Contract Documents and the Coordination Drawings, for any under-slab piping. The PCM will be responsible to provide the trenching, bedding, backfill and compaction for such MEP under-slab items. Each MEP Prime Contractor (the PCP, PCM & PCE) will be responsible to provide a final layout to the PCM, prior to trenching. Each MEP Prime contractor will be responsible to level their piping with provided bedding from the PCM, testing the piping prior to back filling.

Existing Slabs: Where existing slabs require new/modified underground MEP piping or conduit; The PCM will be responsible to survey/mark-out, sawcut, trench, lay bedding, backfill, dowel/reinforce and place new concrete level with existing floors. Each MEP Prime Contractor (PCM & PCE) will be responsible to provide a final layout to the PCM, prior to trenching. Each MEP Prime contractor will be responsible to level their piping with provided bedding from the PCM, testing the piping prior to back filling.

19. Openings in Existing Systems: Each respective Prime Contractor will be responsible to provide their own openings through existing wall, floor, and ceiling systems not shown to be removed on the Architectural Drawings. Where openings for MEPs are required in new wall, floor or ceiling systems, the MC shall coordinate with the respective MEP Prime contractor to locate those openings and frame the system to incorporate the new opening.
20. Core Drilling: Each respective Prime Contractor shall provide their own core drilling through existing and new wall, floor, foundation, or slab systems.
21. Roof Systems: In any case, the MC shall make all penetrations through the existing Roofing System with a qualified roofer who is certified on the existing roof system. Openings in the roof deck shall be coordinated by the respective contractor requiring the opening, and the opening shall be made by the PCM, this Prime Contractor.

22. Each Prime Contractor is required to fire stop and/ or smoke stop all walls, floors and ceilings after completion of all their own work.
23. This Prime Contractor will hire the services of an underground utility surveyor to locate and mark all existing underground utilities and services with-in the Area of Work.
24. This Prime Contractor will repair, replace, correct, or finish grade, topsoil, and seed all areas with-in the construction site that was disturbed by the work of this project, including any staging areas for material and equipment.
25. New Mechanical Roof Top Units, Exhaust Fans and Pipe Portals will be furnished and installed by the Mechanical Prime (including roof membrane/insulation cutting and patching), with final Electrical/ Fire-Alarm terminations by the Electrical Prime under separate contracts. Roof Top Curbs and Pipe Portals will be furnished, lifted/picked, and set/installed by the Prime Mechanical Contract. Blocking for curbs, final flashing, roof deck penetrations/openings and structural reinforcing shall be by the Prime Mechanical Contract. Coordination between each trade to install the roof system and new curbs in a seamless matter is required per each Prime's contract. The following sequence clarifies the coordination between the Mechanical Construction Prime (PCM) and Electrical (PCE) trades for New Mechanical RTU/ Exhausts Fan Equipment:
 - A. Roof Top Unit Curbs:
 1. Furnished, coordinated, lifted/picked and installed by Mechanical (PCM) Prime
 2. Deck/Roof Opening, Structural Reinforcing, Blocking, Insulation and Roof Flashing by Mechanical Construction (PCM) Prime
 3. Pipe Portals/ Pitch Pockets Furnished by Mechanical (PCM) Prime
 4. Pipe Portals/ Pitch Pockets Installed and Flashed by Mechanical Construction (PCM) Prime
 - B. Rooftop Dunnage
 1. Furnished, coordinated, lifted/picked and installed by Mechanical Construction (PCM) Prime
 2. Deck/Roof Opening, Structural Reinforcing, Blocking, Insulation and Roof Flashing by Mechanical Construction (PCM) Prime
 - C. Mechanical Equipment (RTUs):
 1. Furnished, hoisted/picked and installed by Mechanical (PCM) Prime
 2. Piping by Mechanical (PCM) Prime
 3. Ductwork by Mechanical (PCM) Prime
 4. Controls by Mechanical (PCM) Prime
 5. Electrical by Electrical (PCE) Prime
 6. Fire Alarm/ Shutdowns by Electrical (PCE) Prime

Temporary protection of open curbs prior to units being installed, will be provided and maintained, by the Mechanical Construction Contractor in cooperation of all other trades. Water infiltration as a result the Mechanical or Electrical Primes not re-protecting open roof curbs, will be the sole responsibility of that trade to reimburse the PCM Prime - to correct the temporary protection. Any damages to the interior finishes of the building, caused by water infiltration, will be the responsibility of that Prime Contractor causing the leak, to correct the damages per the terms of the General Conditions.
26. This Prime Contractor shall coordinate with the Electrician and Mechanical Construction Prime Contractors to allow all Contractors unabated access to the building.

27. Each Prime Contractor is required to fire stop and/ or smoke stop all walls, floors and ceilings after completion of all their own work.
28. This Prime Contractor will include modification to existing casework required to replace existing equipment. Case work will require Shop Drawings to be submitted to the Architect for approval. Casework will need to be installed by the end of the Summer, prior to student arriving for the 2024-25 academic year. In any case that the case work is not available, this Prime Contractor will deploy temporary protection in place of the casework, so that the space is finished and ready for occupancy.
29. Note that this Prime Mechanical Contractor shall furnish approved HVAC equipment (Basis of Design Daikin, with Alternates as identified in the Specifications) and shall equipment controls services as provided by EMF.

Prime Contractor for Electrical (PCE)

1. The PCM shall provide dumpsters for this contractor to use for day-to-day rubbish. Each Prime Contractor is responsible for collecting, moving, placing, breaking down boxes and pallets, and disposing rubbish, on a daily basis, all debris from their activities into a dumpster supplied by the PCM. Each Prime Contractor is responsible to broom clean the areas they worked in at the end of each day.
2. The PCE shall use the dedicated staging areas for the PCE's Construction Field Office. The PCE will be required to remove and reinstall the fencing that surrounds this location for installation of the PCE's construction office. The PCE will be required to install electric, sanitary, water, phone, cable etc. at the PCP's expense. Electric bills to the trailer only will be paid by the Owner.
3. The Prime Contractor for Electrical is to temporarily support existing ceiling mounted equipment/devices (i.e., speakers, fire alarm apparatuses, exit signs, wiring, light fixtures, etc.) as required for demolition of existing ceilings until new equipment/devices are installed or existing equipment/device can be permanently remounted in the new ceiling by this Prime Contractor – whether shown on the plans or not.
4. The Prime Contractor for Electrical shall provide and keep temporary light and power operational for a period from fifteen minutes before the earliest starting time of the earliest trade, to fifteen minutes after the established quitting time of the trade which stops latest in the evening (fifteen foot candles) throughout the entire construction area (normal working hours 7:00 am to 4:00 pm, second-shift 3:00pm-11:00pm).

This applies to all scheduled workdays, Monday through Saturday inclusive, which are established as regular workdays for any trade engaged in the work, including such days that are holidays for Electricians but are regular workdays for other trades. These services are to be kept operational until the CM determines that they are no longer required for the execution of the work. Temporary light shall consist of a minimum of (1) bulb and cage per 10 square feet of floor space in all spaces no matter of size throughout the existing building spaces being renovated.

5. The Prime Contractor for Electrical shall include in his base price all costs associated with providing and maintaining adequate temporary light and power to all areas of work required by the construction documents. Each major area of work shall be provided with an adequate sized distribution panel for temporary light and power.

6. The Prime Contractor for Electrical shall provide temporary power for masonry work, mixers, steel work, or fire proofing work, compressors etc. that may require 220V temporary power. Power is to be provided at each major area of work if required.
7. **Existing Ceilings:** This Prime Contractor (PCE) should note there are numerous areas where the existing ceilings are remaining. **This Contractor will be required to remove and reinstall any ceilings displaced by installation of this Contractor's Work, where ceilings are not being removed on the Architectural Plans.** If open ceilings are not replaced within a twenty-four hour period after a request by the Construction Manager, either verbal or written, the Construction Manager will have said ceilings reinstalled and all related costs will be back charged to said Contractor.

Any damage or dirt from the removal and reinstallation of ceiling systems, caused by this Prime Contractor will be the responsibility of this contractor to replace in kind, or better.
8. The Prime Contractor for Electrical shall replace all burned out light bulbs, within the work areas, when building is turned over to the owner at substantial completion.
9. This Prime Contractor shall coordinate with the General Construction Prime and Mechanical Prime Contractors to allow all Contractors unabated access to the building.
10. **Access to Work within Existing Walls, Ceiling & Floors:** Unless otherwise noted in the construction documents, this Prime Contractor will cut and cap their own work inside finished walls, floors and ceilings. Access for removals, installation and capping within existing chase walls, walls, soffits or hard ceilings that are not indicated on the drawings for the PCM to remove and replace- will be cut and patched by the MEP contractor requiring access. For shared access to the same wall/ceiling systems, the contractor with the most work will be responsible for cutting and patching the shared openings. Patching must be performed by a skilled tradesman of the associated work (carpentry, taping, painting, etc.,).
11. Each Prime Contractor is required to fire stop and/ or smoke stop all walls, floors and ceilings after completion of all their own work.
12. This Prime Contractor is responsible for protection of finished work. This Prime Contractor will provide, maintain, and remove the appropriate protection materials necessary to adequately protect his finished product.
13. This Prime Contractor will modify all existing Fire Alarm devices that are part of the existing building being renovated, maintain the devices throughout construction, and or disconnect as needed. This Prime Contractor will assure that no troubles exist, by hiring a Fire Alarm vendor who is licensed to modify the existing Fire Alarm system to accept any temporary changes through construction.

Surface Mounted Devices: This Prime Contractor shall remove all existing surface-mounted Fire Alarm Devices such as Strobes, Horns, Pull-Station, etc., on walls receiving new finishes, such as Tile, etc., and shall reinstall devices on face of new finish. This includes any type of surface-mounted conduit/ wire-mold.

Recessed Devices: This Prime Contractor shall modify any in-wall/recessed Fire-Alarm boxes for devices such as Strobes, Horns, Pull-Station, etc., with collars or extensions to meet the face of the new wall finish in areas where existing walls are receiving new finishes, such as tile, etc.,.
14. This Prime contractor will modify existing power devices where walls are receiving new finishes, such as Tile, etc.,.

Surface Mounted Devices: This Prime Contractor shall remove all existing surface-mounted Electrical Devices such as light switches, receptacles, junction boxes, etc., on walls receiving new finishes, such as Tile, etc., and shall reinstall devices on face of new finish. This includes any type of surface-mounted conduit/ wire-mold.

Recessed Devices: This Prime Contractor shall modify any in-wall/recessed Electrical Devices such as light switches, receptacles, junction boxes, etc., with collars or extensions to meet the face of the new wall finish in areas where existing walls are receiving new finishes, such as tile, etc.,.

15. This Prime Contractor is to develop a separate site-specific electrical service shutdown/upgrade schedule within four weeks after Notice of Award. This schedule will be developed in conjunction with the Construction Manager and the Owner. No shutdown/transfer will be permitted at any time without prior written notification. The Prime Contractor for Electrical shall provide temporary power for all 'others' work ongoing at the site during any electrical shutdown or transfer period that would otherwise deny other Contractors power. No shutdown or transfer shall be allowed during active school hours. Any and all shutdowns must be scheduled on the Owners off days (weekends, holidays). Any shutdown longer than three days will require this Prime Contractor to supply temporary power for the Owner (i.e., generators). The Electrical Prime Contractor shall provide a minimum of forty-eight hours' notice to the Owner and the Construction Manager or any necessary power shutdown.
16. New Mechanical Roof Top Units, Exhaust Fans and Pipe Portals will be furnished and installed by the Mechanical Prime (including roof membrane/insulation cutting and patching), with final Electrical/ Fire-Alarm terminations by the Electrical Prime under separate contracts. Roof Top Curbs and Pipe Portals will be furnished, lifted/picked, and set/installed by the Prime Mechanical Contract. Blocking for curbs, final flashing, roof deck penetrations/openings and structural reinforcing shall be by the Prime Mechanical Contract. Coordination between each trade to install the roof system and new curbs in a seamless matter is required per each Prime's contract. The following sequence clarifies the coordination between the Mechanical Construction Prime (PCM), Mechanical (PCM) and Electrical (PCE) trades for New Mechanical RTU/ Exhausts Fan Equipment:
 - D. Roof Top Unit Curbs:
 1. Furnished, coordinated, lifted/picked and installed by Mechanical (PCM) Prime
 2. Deck/Roof Opening, Structural Reinforcing, Blocking, Insulation and Roof Flashing by Mechanical Construction (PCM) Prime
 3. Pipe Portals/ Pitch Pockets Furnished by Mechanical (PCM) Prime
 4. Pipe Portals/ Pitch Pockets Installed and Flashed by Mechanical Construction (PCM) Prime
 - E. Rooftop Dunnage
 1. Furnished, coordinated, lifted/picked and installed by Mechanical Construction (PCM) Prime
 2. Deck/Roof Opening, Structural Reinforcing, Blocking, Insulation and Roof Flashing by Mechanical Construction (PCM) Prime
 - F. Mechanical Equipment (RTUs):
 1. Furnished, hoisted/picked and installed by Mechanical (PCM) Prime
 2. Piping by Mechanical (PCM) Prime
 3. Ductwork by Mechanical (PCM) Prime
 4. Controls by Mechanical (PCM) Prime
 5. Electrical by Electrical (PCE) Prime

6. Fire Alarm/ Shutdowns by Electrical (PCE) Prime

Temporary protection of open curbs prior to units being installed, will be provided and maintained, by the Mechanical Construction Contractor in cooperation of all other trades. Water infiltration as a result the Mechanical or Electrical Primes not re-protecting open roof curbs, will be the sole responsibility of that trade to reimburse the PCM Prime - to correct the temporary protection. Any damages to the interior finishes of the building, caused by water infiltration, will be the responsibility of that Prime Contractor causing the leak, to correct the damages per the terms of the General Conditions.

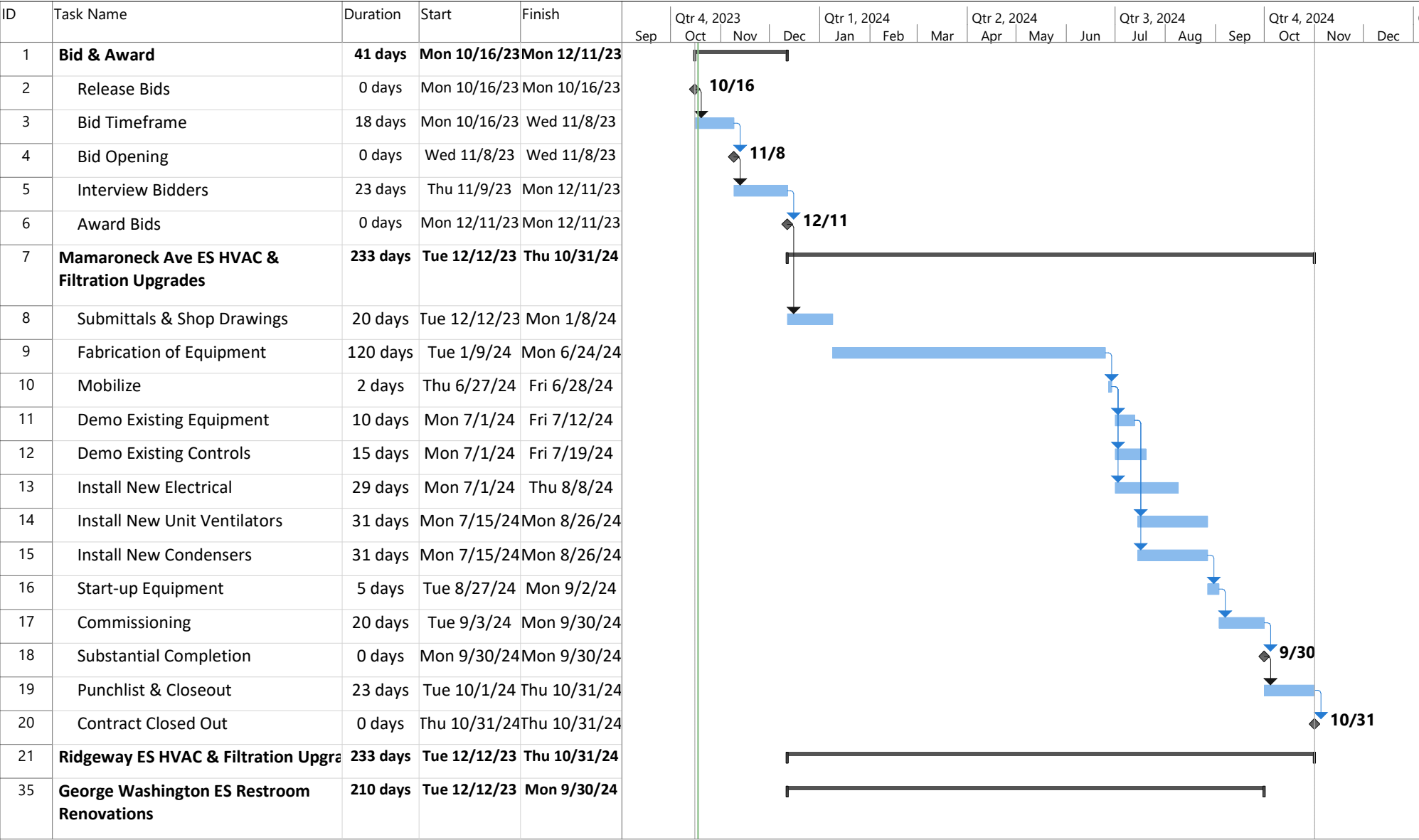
17. Under slab MEP Trenching at New & Existing Slabs:

New Slabs: This Prime contractor will be responsible to coordinate with the PCM contractor and Construction Manager through the Contract Documents and the Coordination Drawings, for any under-slab piping. The Prime Contractor for Mechanical Construction (PCM) will be responsible to provide the trenching, bedding, backfill and compaction for such MEP under-slab items. Each MEP Prime Contractor (the PCP, PCM & PCE) will be responsible to provide a final layout to the PCM, prior to trenching. Each MEP Prime contractor will be responsible to level their piping with provided bedding from the PCM, testing the piping prior to back filling.

Existing Slabs: Where existing slabs require new/modified underground MEP piping or conduit; The PCM will be responsible to survey/mark-out, sawcut, trench, lay bedding, backfill, dowel/reinforce and place new concrete level with existing floors. Each MEP Prime Contractor (the PCP, PCM & PCE) will be responsible to provide a final layout to the PCM, prior to trenching. Each MEP Prime contractor will be responsible to level their piping with provided bedding from the PCM, testing the piping prior to back filling.

1. Openings in Existing Systems: Each respective Prime Contractor will be responsible to provide their own openings through existing wall, floor, and ceiling systems not shown to be removed on the Architectural Drawings. Where openings for MEPs are required in new wall, floor or ceiling systems, the MC shall coordinate with the respective MEP Prime contractor to locate those openings and frame the system to incorporate the new opening.
2. Core Drilling: Each respective Prime Contractor shall provide their own core drilling through existing and new wall, floor/slab or foundation systems.
3. Roof Systems: In any case, the PCM shall make all penetrations through the existing Roofing System with a qualified roofer who is certified on the existing roof system. Openings in the roof deck shall be coordinated by the respective contractor requiring the opening, and the opening shall be made by the PCM.
4. Existing Fire Alarm: This Prime Contractor (PCE) shall include in their base price all costs associated to temporarily maintain the existing fire alarm during construction, through a qualified vendor certified to work on the building's FA system. In the case that the fire alarm needs to be taken off-line, the EC is to provide a dedicated Firewatch per NFPA and NYSED's requirements.

Any work which modifies the existing Fire Alarm shall take place after-hours in buildings that are occupied with Students and Faculty. This includes Student and Faculty occupancy over the Summer academic-recess months.



Project: WPCSD_Mamaroneck Ave Unit Ventilators_Bid Schedule_10-18-2
Run Date: Wed 10/18/23
Company: Triton Construction Co.

Task

Split

Milestone

Summary

Project Summary

Inactive Task

Inactive Milestone

Inactive Summary

Manual Task

Duration-only

Manual Summary Rollup

Manual Summary

Start-only

Finish-only

External Tasks

External Milestone

Deadline

Progress

Manual Progress

Note: The bidder is asked to use either black ink or typewriter (black ribbon) in completing this proposal form. Each line item amount must be completed. Failure to do so will be grounds for disqualification of the bidder.

BASE BID: Contract H – HVAC Construction Work
--

ITEM 1 – BONDS and INSURANCES

(written in words) _____ (\$)

ITEM 2 – DIVISION 1 – GENERAL REQUIREMENTS

(written in words) _____ (\$)

ITEM 3 – DIVISION 1 – PROJECT SUPERVISION

(written in words) _____ (\$)

ITEM 4 – DIVISION 2 – EXISTING CONDITIONS & DEMOLITION WORK

(written in words) _____ (\$)

ITEM 5 – DIVISION 7 – FIRE STOPPING

(written in words) _____ (\$)

ITEM 6 – DIVISION 23 – PIPE, VALVES, FITTINGS, PIPE HANGERS AND SUPPORTS

(written in words) _____ (\$)

ITEM 7 – DIVISION 23 – MECHANICAL SYSTEM IDENTIFICATION

(written in words) _____ (\$)

ITEM 8 – DIVISION 23 – BALANCING OF AIR SYSTEMS

(written in words) _____ (\$)

ITEM 9 – DIVISION 23 – PIPING & DUCTWORK INSULATION

(written in words) _____ (\$)

ITEM 10 – DIVISION 23 – CONTROLS

(written in words) _____ (\$)

ITEM 11 – DIVISION 23 – STEAM SPECIALTIES

(written in words) _____ (\$)

ITEM 12 – DIVISION 23 – SHEET METAL WORK

(written in words) _____ (\$)

ITEM 13 – DIVISION 23 – DIFFUSERS, REGISTERS AND GRILLES

(written in words) _____ (\$)

ITEM 14 – DIVISION 23 – BOILERS

(written in words) _____ (\$)

ITEM 15 – DIVISION 23 – AIR COOLED CONDENSING UNITS

(written in words) _____ (\$)

ITEM 16 – DIVISION 23 – UNIT VENTILATOR

(written in words) _____ (\$)

ITEM 17 – DIVISION 23 – FINNED-TUBE RADIATION HEATERS

(written in words) _____ (\$)

ITEM 18 – AS-BUILT DRAWINGS

(written in words) _____ (\$)

ITEM 19 – PROJECT CLOSEOUT

(written in words) _____ (\$)

ALLOWANCE H1 – ALLOWANCE FOR GENERAL CONTINGENCY

(written in words) Seventy Thousand Dollars and 00 Cents (\$70,000.00)

TOTAL BASE BID (ITEMS 1 –19 INCLUSIVE, PLUS ALLOWANCE H1)

(written in words) _____ (\$)

ALTERNATES

The contractor shall clearly state whether cost indicated is to be added to or deducted from the base bid cost. Failure to clearly state same will be grounds for disqualification of the bidder.

All work included under this heading shall be subject to the general conditions of the project. All construction, workmanship and finishes required by the alternates shall be as specified in the applicable sections of the specifications manual.

The undersigned proposes and agrees that should the following alternates be accepted and included in the contract, the amount of the TOTAL BASE BID will be revised as follows. The undersigned further agrees that should the following Alternates be accepted, the alternate bid prices indicated shall be held and honored for a period of one year from the date of contract signing.

NUMBER	DESCRIPTION	COST
ALT-H1 (Add)	Contractor to provide all general construction and demolition work associated with the removal and disposal of existing radiator control valves, and associated items where indicated in drawings. Contractor to provide and install new DDC ready radiator control valves and associated items where indicated in drawings. New control valves shall be integrated with existing BMS and local thermostats. See drawings for more details. This alternate shall include all material and labor for this work.	(\$)

ALT-H2 (Deduct)	Contractor to provide and install all equipment for Unit Ventilators and Condensers from an alternate manufacturer in lieu of Daikin. This alternate shall include all material and labor for this work.	(\$)
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Note: The WHITE PLAINS CITY SCHOOL DISTRICT is exempt from Federal, New York State and local taxes. TOTAL AMOUNT BID shall be exclusive of all taxes.

EACH BIDDER SHALL SUBMIT WITH IT'S BID A SEPARATE SEALED LIST THAT NAMES THE SUBCONTRACTORS THAT THE BIDDER WILL USE TO PERFORM WORK AND THE AGREED UPON AMOUNT TO BE PAID FOR A.) HEATING, VENTILATION AND AIR-CONDITIONING WORK, B.) PLUMBING WORK AND C.) ELECTRICAL WORK. AFTER THE LOW BID IS ANNOUNCED, THE SEALED LIST OF SUBCONTRACTORS SUBMITTED BY THE APPARENT LOW BIDDER SHALL BE OPENED AND THE NAMES OF THE SUBCONTRACTORS ANNOUNCED. ANY CHANGE OF SUBCONTRACTOR OR AGREED UPON AMOUNT TO BE PAID SHALL REQUIRE THE APPROVAL OF THE PUBLIC OWNER, UPON A SHOWING OF "LEGITIMATE CONSTRUCTION NEED" FOR SUCH CHANGE.

"LEGITIMATE CONSTRUCTION NEED" SHALL INCLUDE, BUT NOT BE LIMITED TO:

A CHANGE IN PROJECT SPECIFICATIONS,
A CHANGE IN CONSTRUCTION MATERIAL COSTS,
A CHANGE IN SUBCONTRACTOR STATUS, OR
THE SUBCONTRACTOR HAS BECOME UNWILLING, UNABLE OR UNAVAILABLE TO PERFORM THE SUBCONTRACT.

THE SEALED LISTS OF SUBCONTRACTORS SUBMITTED BY ALL OTHER BIDDERS SHALL BE RETURNED TO THEM UNOPENED AFTER THE CONTRACT AWARD.

PAYMENTS TO SUBCONTRACTORS AND MATERIAL MEN MUST BE MADE WITHIN 7 CALENDAR DAYS AS OPPOSED TO 15 CALENDAR DAYS OF THE RECEIPT OF PAYMENT FROM THE PUBLIC OWNER. FAILURE TO PAY WITHIN 7 CALENDAR DAYS WILL RESULT IN INTEREST DUE FOR ALL CALENDAR DAYS SUBSEQUENT TO THE SEVENTH DAY THROUGH THE DATE THAT PAYMENT IS MADE.

THE BIDDER UNDERSTANDS THAT THE OWNER RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS AND TO WAIVE ANY INFORMALITIES IN THE BIDDING.

THE BIDDER AGREES THAT THE BID SHALL BE GOOD AND MAY NOT BE WITHDRAWN FOR A PERIOD OF **FORTY-FIVE (45)** CALENDAR DAYS AFTER THE SCHEDULED CLOSING TIME FOR RECEIVING BIDS.

THE BIDDER HAS SUBMITTED ALL REQUESTS FOR OTHER BRAND NAMES OR PRODUCTS NOT LISTED IN THE SPECIFICATIONS IN ACCORDANCE WITH ARTICLE 6(W) OF THE GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION.

SITE SUPERVISION

THE SUCCESSFUL CONTRACTOR IS TO PROVIDE FULL TIME SITE SUPERVISION FOR HIS OR HER STAFF, SUBCONTRACTORS AND SUPPLIERS FOR THE DURATION OF THIS PROJECT. A COMPETENT SUPERINTENDENT SHALL BE IN ATTENDANCE AT THE JOB SITE AT ALL TIMES WHEN WORK IS BEING PERFORMED UNDER THEIR CONTRACT. THE SUPERINTENDENT IS RESPONSIBLE TO VISIT THE JOB SITE DAILY WHEN WORK IS NOT BEING PERFORMED UNDER THEIR CONTRACT AND TO MONITOR THE OVERALL CONSTRUCTION PROGRESS. A QUALIFIED SITE SUPERINTENDENT MUST HAVE THE AUTHORITY TO REPRESENT AND MAKE DECISIONS FOR HIS OR HER COMPANY WITH REGARDS TO THE SUBJECT JOB, MUST BE ABLE TO GIVE GUIDANCE AND DIRECTION TO EMPLOYEES, SUBCONTRACTORS AND SUPPLIERS, AND MUST BE KNOWLEDGEABLE ABOUT THE WORK TO BE PROVIDED. FAILURE TO PROVIDE A QUALIFIED SITE SUPERINTENDENT AT THE JOB SITE SHALL SUBJECT SAID PRIME CONTRACTOR TO A PENALTY OF \$1,000 PER DAY FOR EVERY OCCURRENCE.

TIME OF COMPLETION

ALL WORK UNDER THIS CONTRACT SHALL BE COMPLETED BETWEEN THE FOLLOWING HOURS, IN ACCORDANCE WITH THE FOLLOWING DATES:

WORK DAYS: Monday – Friday
WORK HOURS: 7:00 AM - 4:00 PM
CONSTRUCTION START DATE: June 26, 2024
SUBSTANTIAL COMPLETION: August 30, 2024
FINAL COMPLETION: September 13, 2024

IF NECESSARY, WEEKEND, HOLIDAY AND EVENING WORK SHALL BE PROVIDED TO ENSURE THE COMPLETION DATES LISTED ABOVE, AT THE SOLE COST AND EXPENSE OF THE BIDDER.

FAILURE OF THE CONTRACTOR TO COMPLETE WORK BY THE SPECIFIED TIME SHALL SUBJECT HIM/HER TO LIQUIDATED DAMAGES AS SET FORTH IN ARTICLE 13 OF THE GENERAL CONDITIONS.

THE ARCHITECT/ENGINEER SHALL ACT AS THE RECORD KEEPER OF CONTRACT DAYS; HE WILL BE THE SOLE JUDGE OF DELAYS CAUSED BY WEATHER. ONLY WEATHER DELAYS, AS ADJUDGED BY THE ARCHITECT/ENGINEER, WILL BE CONSIDERED FOR EXTENSIONS OF THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL SUBMIT A BI-WEEKLY REQUEST FOR DELAYS DUE TO WEATHER TO THE ARCHITECT/ENGINEER FOR APPROVAL. NO OTHER DELAY CLAIMS WILL BE ACCEPTED, FOR CREDIT TOWARDS THE PROJECT COMPLETION SCHEDULE, REGARDLESS OF THE SOURCE OF THE DELAY.

FAILURE OF THE CONTRACTOR TO COMPLETE ALL WORK SHOWN AND SPECIFIED IN THE CONTRACT DOCUMENTS, BY ALL OF THE SPECIFIED TIME FRAMES, SHALL SUBJECT THE CONTRACTOR TO LIQUIDATED DAMAGES, AS SET FORTH IN ARTICLE 13 OF THE GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, IN THE SUM OF ONE THOUSAND DOLLARS (\$1,000.00) PER CALENDAR DAY. SUCH DAMAGES WILL COMMENCE ON THE DAY AFTER THE COMPLETION DATE OR THE DAY AFTER ANY LISTED MILESTONE DATE IN THE NOTICE TO PROCEED.

WITHIN TEN (10) CONSECUTIVE CALENDAR DAYS AFTER THE DATE OF THE NOTICE OF AWARD, THE BIDDER SHALL EXECUTE THE CONTRACT AND FURNISH THE REQUIRED PERFORMANCE BOND, PAYMENT BOND AND INSURANCES.

THE BOARD OF EDUCATION OF THE DISTRICT RESERVES THE RIGHT TO AWARD THIS CONTRACT TO OTHER THAN THE LOW BIDDER IF THE LAW SO PERMITS.

THE UNDERSIGNED HEREBY ACKNOWLEDGES RECEIPT OF THE FOLLOWING ADDENDA (IF ANY):

ADDENDUM NO.

DATED

SPECIFIC DAMAGES WILL BE ASSESSED AND DEDUCTED FROM AMOUNTS OTHERWISE DUE THE CONTRACTOR FOR ADDITIONAL INSPECTION (FIELD) AND CONTRACT ADMINISTRATION (OFFICE) TIME EXPENDED BY THE ARCHITECT/ENGINEER AND/OR OTHER CONSTRUCTION EMPLOYEE(S) HIRED TO ADMINISTER OR OBSERVE THE CONTRACT, SHOULD THE CONTRACTOR COMPLETE THE CONTRACT BEYOND THE CONTRACT COMPLETION PERIOD SPECIFIED ABOVE.

SUCH DEDUCTION SHALL BE IN ACCORDANCE WITH THE ARCHITECT, ENGINEER'S, AND/OR OTHER CONSTRUCTION EMPLOYEE(S) STANDARD HOURLY BILLING RATES IN EFFECT AT THE TIME FOR THE SCHOOL DISTRICT.

THE REQUIREMENTS OF THE PROPOSAL HAVE BEEN COMPLETELY READ, UNDERSTOOD AND ACKNOWLEDGED BY THE BIDDER.

BIDDER: _____

BIDDER'S ADDRESS: _____

SIGNED BY: _____ TITLE: _____

DATE: _____

Telephone number where the contractor or a competent representative can accept a telephone message and provide a reasonable reply as soon as possible, but not later than twenty-four (24) hours:

DAY: () _____ NIGHT: () _____

FAX: () _____

FEDERAL I.D. NO. OR SOCIAL SECURITY NO.: _____

PART 1 - GENERAL

1.01 SYSTEM DESCRIPTION

- A. The variable capacity, heat pump air conditioning system shall consist of multiple evaporators, refrigerant pipe joints and headers, a two-pipe refrigeration distribution system using PID control, and an air-cooled condensing unit. The condensing unit shall be a direct expansion (DX), air-cooled heat pump, multi-zone air-conditioning system with variable speed inverter driven compressors using R-410A refrigerant. The condensing unit shall be capable of connection to an indoor evaporator capacity up to 200% of the condensing unit capacity. All zones shall each be capable of operating separately with individual temperature control.
- B. The condensing unit shall be interconnected to indoor unit models in accordance with the manufacturer's recommendations. The indoor units shall be connected to the condensing unit utilizing manufacturer approved piping joints and headers to ensure correct refrigerant flow and balancing. T- style joints are not acceptable.
- C. Operation of the system shall permit either cooling or heating of all of the indoor units simultaneously. Each indoor unit or group of indoor units shall be able to provide set temperature independently via a local remote controller, an Intelligent Controller, an Intelligent Manager or a BMS interface.
- D. An outdoor air shall be delivered to the system via an energy recovery ventilator. The energy recovery ventilator shall incorporate a high-efficiency paper, cross-flow heat exchanger core in order to provide both sensible and latent heat recovery.

1.02 SYSTEM DESCRIPTION

- A. Advanced Zoning - A single system shall provide for up to 62 zones.
- B. Autocharging - Each system shall have a refrigerant auto-charging function.
- C. Oil Return Heating - Each system shall maintain continuous heating during oil return operation. Reverse cycle (cooling mode) oil return during heating operation shall not be permitted due to the potential reduction in space temperature.
- D. Independent Control - Each indoor unit shall use a dedicated electronic expansion valve for independent control.
- E. VFD Inverter Control - Each condensing unit shall use a high efficiency, variable speed "inverter" compressor coupled with inverter fan motors for superior part load performance.
- F. Compressor capacity shall be modulated automatically to maintain constant suction and condensing pressures while varying the refrigerant volume for the needs of the cooling or heating loads.
- G. Indoor units shall use PID to control superheat to deliver a comfortable room temperature condition and optimize efficiency.
- H. Flexible Design
 - 1. Systems shall be capable of up to 540 ft. (640 ft. equivalent) of linear piping between the condensing unit and furthest located indoor unit.

WHITE PLAINS CITY SCHOOL DISTRICT
AC & VENTILATION AT MAMARONECK ELEMENTARY SCHOOL
MAMARONECK ELEMENTARY SCHOOL
SED No.: 66-22-00-01-0-010-017

2. Systems shall be capable of up to 3,280 ft. total "one-way" piping in the piping network.
 3. Systems shall have a vertical (height) separation of up to 295 ft. between the condensing unit and the indoor units.
 4. Systems shall be capable of up to 295 ft. from the first branch point.
 5. The condensing unit shall have the ability to connect an indoor unit evaporator capacity of up to 200% of the condensing unit capacity.
 6. Systems shall be capable of 49 ft. between indoor units.
 7. Condensing units shall be supported with a fan motor ESP up to 0.32" WG as standard to allow connection of discharge ductwork and to prevent discharge air short circuiting.
- I. Simple Wiring - Systems shall use 16/18 AWG, 2 wire, multi-stranded, non-shielded and non-polarized daisy chain control wiring.
- J. Advanced Diagnostics - Systems shall include a self diagnostic, auto-check function to detect a malfunction and display the type and location.
- K. Each condensing unit shall incorporate contacts for electrical demand shedding.
- L. Advanced Controls - Each system shall have at least one remote controller capable of controlling up to 16 indoor units.
- M. Each system shall be capable of integrating with open protocol BACnet and LonWorks building management systems.

1.03 QUALITY ASSURANCE

- A. The units shall be tested by a Nationally Recognized Testing Laboratory (NRTL), in accordance with ANSI/UL 1995 - Heating and Cooling Equipment, and shall bear the Listed Mark.
- B. All wiring shall be in accordance with the National Electrical Code (N.E.C.).
- C. The units shall be rated in accordance with Air-conditioning Refrigeration Institute's (ARI) Standard 210 and bear the ARI Certification label.
- D. The system shall be manufactured in an ISO 9001 and ISO 14001 facility, which are standards set by the International Standard Organization (ISO). The system shall be factory tested for safety and function.
- E. The condensing unit shall be factory charged with R410A refrigerant.
- F. The energy recovery ventilator shall be certified in accordance with Air Conditioning, Heating, and Refrigeration Institute's (AHRI) Standard 1060 and bear the AHRI Certified label.
- G. The energy recovery heat exchanger core shall be tested in accordance with Underwriters Laboratories (UL) 723 and shall have a flame spread rating of not more than 25, and a smoke developed rating of not more than 50.
- H. The energy recover system efficiency shall meet or exceed 65% thermal efficiency and 40% enthalpy recovery efficiency.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Equipment shall be stored and handled according to the manufacturer's recommendations.

1.05 WARRANTY

- A. Condensing Unit

1. The manufacturer shall warrant to the customer who is the original owner and user of the products specified above ("Customer") that under normal use and maintenance for comfort cooling and conditioning applications such products (the "Products") will be free from defects in material or workmanship. This warranty shall apply to parts only and is limited in duration to one (1) year from the earlier to occur of (a) the date of original installation, whether or not actual use begins on that date, or (b) eighteen (18) months from the date of shipment. Customer must present proof of the original date of receipt and of installation of the Product in order to establish the effective date of this warranty. Otherwise the effective date will be deemed to be the date of manufacture plus sixty (60) days. Repaired or replacement parts shall be warranted for the balance of the warranty period applicable to the original part following the date on which the repaired or replacement part is provided to the Customer.
2. For its compressors only, the manufacturer shall provide the above warranty (which is applicable to parts only) for a seven (7) year period. This extended warranty for compressors shall be limited in duration to seven (7) years from the earlier to occur of (a) the date of original installation, whether or not actual use begins on that date, or (b) eighteen (18) months from the date of shipment, and applies to the compressor and compressor parts only. The effective date of this extended warranty shall be established as above.

- B. Indoor Unit

1. The units shall have a manufacturer's warranty for a period of one (1) year from date of installation. The units shall have a limited labor warranty for a period of one (1) year from date of installation. The compressors shall have a warranty of seven (7) years from date of installation. During the stated period, should any part fail due to defects in material and workmanship, it shall be repaired or replaced at the discretion of the manufacturer according to their terms and conditions. All warranty service work shall be performed by a manufacturer factory trained service professional.

- C. Energy Recovery Unit

1. The manufacturer shall warrant to the customer who is the original owner and user of the products specified above ("Customer") that under normal use and maintenance for comfort cooling and conditioning applications such products (the "Products") will be free from defects in material or workmanship. This warranty applies to parts only and is limited in duration to one (1) year from the earlier to occur of (a) the date of original installation, whether or not actual use begins on that date, or (b) eighteen (18) months from the date of shipment. Customer must present proof of the original date of receipt and of installation of the Product in order to establish the effective date of this warranty. Otherwise the effective date will be deemed to be the date of manufacture plus sixty (60) days. Repaired or replacement parts are warranted for the balance of the warranty period applicable to the original part following the date on which the repaired or replacement part is provided to the Customer.
2. For the core only, the manufacturer shall provide the above warranty for a six (6) year period. This extended warranty for the core is limited in duration to six (6) years from the

earlier to occur of (a) the date of original installation, whether or not actual use begins on that date, or (b) twenty-four (24) months from the date of shipment. The effective date of this extended warranty shall be established as above.

D. System Installation Requirements

1. The system must be installed by a factory trained contractor/dealer. The bidders shall be required to submit training certification proof with bid documents. The mechanical contractor's installation price shall be based on the systems installation requirements. The mechanical contractor bids with complete knowledge of the HVAC system requirements. Untrained contractors who wish to bid this project shall contact the manufacturer to arrange training prior to bid day.

1.06 SUBMITTALS

- A. Submit manufacturer's product data including capacity of unit, electrical requirements, airflow, sound pressure data, indoor and outdoor unit measurements, weight, control schematics, and wiring diagrams.

PART 2 - PRODUCTS

2.01 DESIGN BASIS

- A. The basis of design is Daikin AC. All bidders shall furnish the minimum system standards as defined by the base bid model numbers, model families or as otherwise specified herein. In any event, the contractor shall be responsible for all specified items and intents of this document without further compensation.
- B. Alternates:
 1. Daikin VRF
 2. Approved alternate
 - a. The District has previously executed a Board Resolution to standardize Daikin equipment for Unit Ventilators and Condensers throughout the District. As such the Base Bid shall include equipment as provided by Daikin. However, the District also reserves it right to entertain alternate manufacturers for this equipment and may be listed as Deduct Alternates. Supply Deduct Alternate along with alternative manufacturer within the space(s) provided. Acceptable alternate manufacturers include LG or others deemed equal by the design Engineer.

2.02 CONDENSING UNIT

- A. General: The condensing unit shall be designed specifically for use with a variable refrigerant volume system.
 1. The condensing unit shall be factory assembled and pre-wired with all necessary electronic and refrigerant controls. The refrigeration circuit of the condensing unit shall consist of scroll compressors, motors, fans, condenser coil, electronic expansion valves, solenoid valves, 4-way valve, distribution headers, capillaries, filters, shut off valves, oil separators, service ports and refrigerant regulator.
 2. Liquid and suction lines shall be individually insulated between the condensing and indoor units.
 3. The connection ratio of indoor units to condensing unit shall be permitted up to 200%.
 4. The condensing unit shall be able to support the connection of multiple indoor units.

5. The system shall automatically restart operation after a power failure. System settings shall be saved in the event of a power loss without the need for reprogramming.
 6. The unit shall incorporate an auto-charging feature.
 7. The condensing unit shall be modular in design and should allow for side-by-side installation with minimum spacing.
 8. The following safety devices shall be included on the condensing unit: high pressure sensor and switch, low pressure switch, control circuit fuses, crankcase heaters, fusible plug, overload relay, inverter overload protector, thermal protectors for compressor and fan motors, over current protection for the inverter and anti-recycling timers.
 9. To ensure the liquid refrigerant does not flash when supplying to the various indoor units, the circuit shall be provided with a sub-cooling feature.
 10. Oil recovery cycle shall be automatic occurring 2 hours after start of operation and then every 8 hours of operation. Each system shall maintain continuous heating during oil return operation. Reverse cycle (cooling mode) oil return during heating operation shall not be permitted due to the potential reduction in space temperature.
 11. The condensing unit shall be capable of heating operation at 0°F dry bulb ambient temperature without additional low ambient controls or an auxiliary heat source.
- B. Unit Cabinet:
1. The condensing unit shall be completely weatherproof and corrosion resistant. The unit shall be constructed from rust-proofed mild steel panels coated with a baked enamel finish.
- C. Fan:
1. The condensing unit shall consist of propeller type, direct-drive fan motor(s) that have multiple speed operation via a DC (digitally commutating) inverter.
 2. The condensing unit fan motor shall have multiple speed operation of the DC (digitally commutating) inverter type.
 3. The fan shall be a vertical discharge configuration.
 4. The fan motor shall have inherent protection and permanently lubricated bearings and be mounted.
 5. The fan motor shall be provided with a fan guard to prevent contact with moving parts.
 6. Night setback control of the fan motor for low noise operation by way of automatically limiting the maximum speed shall be a standard feature.
- D. Condenser Coil:
1. The condenser coil shall be manufactured from copper tubes expanded into aluminum fins to form a mechanical bond.
 2. The heat exchanger coil shall be of a waffle louver fin and rifled bore tube design to ensure high efficiency performance.
 3. The heat exchanger on the condensing units shall be manufactured from Hi-X seamless copper tube with N-shape internal grooves mechanically bonded on to aluminum fins to an e-Pass Design.
 4. The fins shall be covered with an anti-corrosion acrylic resin and hydrophilic film type E1.
 5. The pipe plates shall be treated with powdered polyester resin for corrosion prevention. The thickness of the coating must be between 2.0 to 3.0 microns.
- E. Compressor:
1. The inverter scroll compressors shall be variable speed (PVM inverter) controlled and capable of changing the speed to follow the variations in total cooling and heating load as determined by the suction gas pressure as measured in the condensing unit. In addition,

sampleings of evaporator and condenser temperatures shall be made so that the high/low pressures detected are read every 20 seconds and calculated. With each reading, the compressor capacity (INV frequency or STD ON/OFF) shall be controlled to eliminate deviation from target value.

2. The inverter driven compressor in each condensing unit shall be of highly efficient reluctance DC (digitally commutating), hermetically sealed scroll "G2-type" with a maximum speed of 7,980 rpm.
3. Neodymium magnets shall be adopted in the rotor construction to yield a higher torque and efficiency in the compressor instead of the normal ferrite magnet type. At complete stop of the compressor, the neodymium magnets will position the rotor into the optimum position for a low torque start.
4. The capacity control range shall be as low as 4% to 100%.
5. Each non-inverter compressor shall also be of the hermetically sealed scroll type.
6. Each compressor shall be equipped with a crankcase heater, high pressure safety switch, and internal thermal overload protector.
7. Oil separators shall be standard with the equipment together with an intelligent oil management system.
8. The compressor shall be spring mounted to avoid the transmission of vibration.
9. In the event of compressor failure in a system with multiple compressors, the remaining compressors shall continue to operate and provide heating or cooling as required at a proportionally reduced capacity. The microprocessor and associated controls shall be designed to specifically address this condition.
10. In the case of multiple condenser modules, conjoined operation hours of the compressors shall be balanced by means of the Duty Cycling Function, ensuring sequential starting of each module at each start/stop cycle, completion of oil return, completion of defrost or every 8 hours.

F. Electrical:

1. Refer to equipment schedules located on drawings for power requirements.
2. The control voltage between the indoor and condensing unit shall be 16VDC non-shielded, stranded 2 conductor cable.
3. The control wiring shall be a two-wire multiplex transmission system, making it possible to connect multiple indoor units to one condensing unit with one 2-cable wire, thus simplifying the wiring installation.
4. The control wiring lengths shall be as shown below.

G. Operating Range:

1. The operating range in cooling shall be 23°F DB ~ 122°F DB.
2. The operating range in heating shall be 0°F DB - 77°F DB / -4°F WB - 60°F WB.

2.03 4-WAY CEILING CASSETTE INDOOR UNITS (3'X3')

- A. General: Indoor unit shall be a round flow ceiling cassette fan coil unit, operable with R-410A refrigerant, equipped with an electronic expansion valve, for installation into the ceiling cavity equipped with an air panel grill. Unit to be connected to outdoor unit heat pump or heat recovery model. It shall be a round flow air distribution type, fresh white, impact resistant with a washable decoration panel. The supply air shall be distributed via motorized louvers which can be horizontally and vertically adjusted from 0° to 90°. Computerized PID control shall be used to control superheat for temperature control. The unit shall be equipped with a programmed drying mechanism that dehumidifies while limiting changes in room temperature.

- B. Performance: Refer to equipment schedules on drawings.

C. Indoor Unit:

1. The indoor unit shall be completely factory assembled and tested. Included in the unit is factory wiring, piping, electronic proportional expansion valve, control circuit board, fan motor thermal protector, flare connections, condensate drain pan, condensate drain pump, condensate safety shutoff and alarm, self-diagnostics, auto-restart function, 3-minute fused time delay, and test run switch.
2. Indoor unit and refrigerant pipes shall be charged with dehydrated air prior to shipment from the factory.
3. Both refrigerant lines shall be insulated from the outdoor unit.
4. The round flow supply air flow shall be adjustable to different airflow patterns to accommodate various installation configurations including corner installations.
5. Return air shall be through the concentric panel, which includes a resin net, mold resistant, antibacterial filter.
6. The indoor units shall be equipped with a condensate pan with antibacterial treatment and condensate pump. The condensate pump shall provide up to 33-1/2" of lift and have a built in safety shutoff and alarm.
7. The indoor units shall be equipped with a return air thermistor.
8. The indoor unit shall be separately powered. Refer to equipment schedule on drawings for power requirements.

D. Unit Cabinet:

1. The cabinet shall be space saving and shall be located into the ceiling.
2. The unit shall consist of multiple auto-swing positions.
3. The airflow of the unit shall have the ability to shut down outlets with multiple patterns allowing for simpler installation in irregular spaces.
4. Fresh air intake shall be possible via an optional fresh air intake kit. Refer to equipment schedule on drawings for options selected.
5. A branch duct knockout shall exist for branch ducting of supply air.
6. The cabinet shall be constructed with sound absorbing foamed polystyrene and polyethylene insulation.
7. High efficiency MERV 13 air filters shall be available for each model unit. Refer to equipment schedule on drawings for options selected.

E. Fan:

1. The fan shall be direct-drive turbo fan type with statically and dynamically balanced impeller with three fan speeds available.
2. The airflow rate shall be available in three settings.
3. The fan motor shall be equipped as standard with adjustable external static pressure (ESP) settings to allow operation with a MERV 13 filter as necessary.
4. The fan motor shall be thermally protected.

F. Filter:

1. The return air shall be filtered by means of a washable long-life filter with mildew proof resin and antibacterial treatment.
2. Optional high efficiency disposable MERV 13 filters shall be available.

G. Coil:

1. Coils shall be of the direct expansion type constructed from copper tubes expanded into aluminum fins to form a mechanical bond.

2. The coil shall be of a waffle louver fin and high heat exchange, rifled bore tube design to ensure highly efficient performance.
3. The coil shall be a 2-row cross fin copper evaporator coil with 17 FPI design completely factory tested.
4. The refrigerant connections shall be flare connections.
5. A condensate pan with antibacterial treatment shall be located under the coil.
6. A condensate pump shall be located below the coil in the condensate pan with a built in safety alarm.
7. A thermistor will be located on the liquid and gas line.

H. Electrical:

1. A separate power supply will be required. Refer to equipment schedule on drawings for electrical requirements.
2. Transmission (control) wiring between the indoor and outdoor unit shall be a maximum of 3,280 feet (total 6,560 feet).
3. Transmission (control) wiring between the indoor unit and remote controller shall be a maximum distance of 1,640 feet.

I. Control:

1. The unit shall have controls provided by the manufacturer to perform input functions necessary to operate the system.
2. The unit shall be compatible with interfacing with a BMS system via optional LonWorks or BACnet gateways. Refer to equipment schedule on drawings for options selected.

2.04 REFRIGERANT PIPING

- A. The system shall be capable of refrigerant piping up to 540 actual feet or 620 equivalent feet from the condensing unit to the furthest indoor unit, a total combined liquid line length of 3,280 feet of piping between the condensing and indoor units with 295 feet maximum vertical difference, without any oil traps.
- B. Piping joints and headers shall be used to ensure proper refrigerant balance and flow for optimum system capacity and performance. T style joints shall not be acceptable as this will negatively impact proper refrigerant balance and flow for optimum system capacity and performance.

PART 3 - EXECUTION

3.01 GENERAL

- A. Install all equipment, piping, and controls in accordance with manufacturer's installation instructions.
- B. Install refrigerant piping as per manufacturer's instructions and specification.
- C. Mount the outdoor condensing unit on a concrete equipment pad or equipment support rails.
- D. Support the indoor unit as per the manufacturer's instructions.
- E. Mount the controller. Coordinate exact location with the owner.
- F. Install the drain line. Pitch drain line in the direction of flow.

MULTIPLE EVAPORATOR, DIRECT EXPANSION, AIR-COOLED, VARIABLE CAPACITY, SPLIT
SYSTEMS

H2M

WHITE PLAINS CITY SCHOOL DISTRICT
AC & VENTILATION AT MAMARONECK ELEMENTARY SCHOOL
MAMARONECK ELEMENTARY SCHOOL
SED No.: 66-22-00-01-0-010-017

G. Install new filter on indoor unit.

H. Clean all equipment after installation.

END OF SECTION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF WORK

- A. Power supply wiring from power source to power connection on terminal unit. Include starters, disconnects, and required electrical devices, except where specified as furnished, or factory-installed, by manufacturer.
- B. Provide interlock wiring between electrically-operated terminal units; and between terminal units and field-installed control devices.
- C. Interlock wiring specified, as factory-installed is work of this section.
- D. Provide the following electrical work as work of this section:
 - 1. Control wiring between field-installed controls, indicating devices, and terminal unit control panels.
 - 2. Control wiring specified, as work of Division 23 for HVAC controls is work of that section.

1.03 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Firms regularly engaged in manufacture of terminal units, of types and sizes required, whose products have been in satisfactory use in similar service for not less than 5 years.
- B. Units shall be tested and certified in accordance with ARI Standard 840.
- C. Unit insulation and adhesive shall meet the requirements for flame spread rating of lower than 25 per ASTM E84 and smoke generation rating of lower than 50 per ASTM E84. Only closed cell insulation shall be used. The use of fiberglass insulation is not acceptable.
- D. Each coil shall be factory tested for leakage at 350 psig air pressure with coil submerged in water.

1.04 SUBMITTALS

- A. Product Data: Submit manufacturer's specifications for terminal units showing dimensions, capacities, ratings, performance characteristics, gages and finishes of materials, and installation instructions.
- B. Shop Drawings: Submit assembly-type shop drawings showing unit dimensions, construction details, and field connection details.
- C. Wiring Diagrams: Submit manufacturer's electrical requirements for power supply wiring to terminal units. Submit manufacturer's ladder-type wiring diagrams for interlock and control wiring. Clearly differentiate between portions of wiring that are factory-installed and portions to be field-installed.
- D. Samples: Submit 3 samples of each type of cabinet finish and color furnished.

- E. Maintenance Data: Submit maintenance instructions, including lubrication instructions, filter replacement, motor and drive replacement, and spare parts lists. Include this data, product data, and shop drawings in maintenance manuals; in accordance with requirements of Division 1.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Handle terminal units and components carefully to prevent damage, breaking, denting and scoring. Do not install damaged terminal units or components; replace with new.
- B. Store terminal units and components in clean dry place. Protect from weather, dirt, fumes, water, construction debris, and physical damage.
- C. Comply with Manufacturer's rigging and installation instructions for unloading terminal units, and moving them to final location.

PART 2 - PRODUCTS

2.01 UNIT VENTILATORS

- A. General: Provide unit ventilators having cabinet sizes, and in locations indicated, and of capacities, style, and having accessories as scheduled. Unit ventilators shall be designed for floor (vertical) mounting. Units shall incorporate hot water heat as specified. Include in basic unit cabinets, dampers, fan board assembly, motors, and coils. The unit shall be a factory-assembled bolt-together unit ventilator. Contained within the unit enclosure shall be a factory-installed motor, wiring, blowers, coil(s), bearing, and outdoor/return air dampers. Units shall be of draw-thru design. Blow-thru design is not acceptable.
- B. Unit Construction:
 - 1. Unit frame shall be constructed of heavy gage galvanized steel components that form a rigid foundation and resist corrosion.
 - 2. Unit shall be 21 7/8 inches deep and include a false back to allow alignment of unit outside air passage with existing outside air louver connection.
 - 3. Unit composed of three main sub-assembled modules: Blower Module, Coil Module and Damper Module. Modules shall be removable without disassembling the unit.
 - 4. Modules shall be externally insulated using closed cell insulation.
 - 5. Unit back shall be insulated using closed cell insulation.
 - 6. Exterior access panels shall be constructed of heavy gage galvanized steel that has been cleaned and pretreated before painting to maximize corrosion resistance. Exterior service access panels shall be retained by tamper-resistant fasteners. Panels shall be electrostatically coated with polyester powder baked on textured paint.
- C. Vertical Unit:
 - 1. Cabinet shall be provided with three 16-gage exposed front panels, service access panels with tamper-resistant hex socket head threaded fasteners and retainer chains for safety and ease of service.
 - 2. Cabinet models shall have standard textured baked powder finished panels. Cabinet tops shall be charcoal bronze with a steel bar-stock discharge grille. Cabinet top shall have textured charcoal finish.
 - 3. External access panels shall be easily removed from outside of the unit for easy access to filters and routine maintenance. Unit top shall be easily removed for routine maintenance.
 - 4. Unit shall include leveling legs to compensate for floor irregularities.

D. Coils:

1. Hot water coils shall be constructed of mechanically expanded copper tubing minimum wall .016" inside, aluminum fins, minimum thickness .025". The fin surface shall be enhanced to the maximum degree by incorporating a raised lance design. Coils shall be pressure tested at no less than 350 psig at the factory to ensure they are leak tight. Hot water coils shall be constructed of mechanically expanded copper tubing minimum wall .016", inside aluminum fins minimum thickness .045". The coil performance shall be maximized by incorporation of a waffle design of the fin surface. Coils shall be pressure tested at no less than 350 psig at the factory to ensure they are leak tight. A coil low limit shall be factory mounted on the leaving side of the heating coil. If the capillary device senses a temperature less than 38°F along any 6" the device will actuate, device shall be SPDT, auto reset.
2. Direct expansion (DX) coils shall be furnished and capped for future connection.
3. Steam coils shall be the freeze resistant double tube, distribution type utilizing a tube-in-tube design with a long copper header. Non-distributing type coils are not acceptable. Ferrous materials in the header are also not acceptable.

E. Pipe Tunnel:

1. Units rated 500 to 1500 CFM vertical units shall have an integral pipe tunnel that can be used for piping across the unit. This tunnel shall be insulated, with closed cell insulation, from the unit and accessible from each end compartments to allow maximum flexibility of crossover piping installation.

F. Drain Pans:

1. Unit drain pan shall be double sloped welded galvanized steel to prevent standing water.
2. Drain pan will be coated to prevent external condensation during cooling.
3. Drain connections (7/8 in. OD) shall be supplied on both ends of pan for field conversion of slope and drain hand connection if required.
4. Drain pan slope shall be field convertible without removing the coil module.
5. Heating only units shall come equipped with a double sloped drain pan for future cooling needs.

G. Fan and Motor:

1. Fan and motor assembly shall be direct driven. One end of drive shaft shall be mounted in a sleeve-type or ball bearing, with other end of shaft supported by motor bearings.
2. Fan wheels shall be double-width, double-inlet with forward-curved blades, and shall operate at low speed. Fan wheels shall be mounted on a hollow one piece steel shaft.
3. Fan wheels shall be statically and dynamically balanced.
4. Fan (blower) housings shall be constructed from heavy-gage steel and mounted to a heavy-gage galvanized steel fan deck.
5. To prevent vibration transmission to the unit frame, motor and shaft bearing shall be resiliently mounted. The drive shaft shall be connected to motor with a flexible coupling.
6. Fan motors shall be mounted outside of the airstream on a heavy-gage steel partition and removable without removing the blower module.
7. Units shall be supplied with permanently split capacitor (PSC) multi-tap transformer motors. All motors shall have integral high temperature reset and shall be protected with cartridge-type fuse(s).

H. Filters:

UNIT VENTILATOR
WHITE PLAINS CITY SCHOOL DISTRICT
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H2M

1. Unit shall be supplied with 1-in. throwaway filter. The unit shall be capable of incorporating a 2 in. filter. For even loading, filter shall be positioned to filter mixed outdoor and return air.
 2. Filter track shall be field adjustable to accept 1-in. or 2-in. permanent or renewable media replacement filters.
- I. Dampers:
1. Unit shall contain a single outdoor-air/return-air damper with multiple sealing points. Damper shall be constructed of extruded aluminum with external closed cell insulation. The damper assembly shall include an anti-draft plate to prohibit outdoor air from penetrating the classrooms through the damper assembly.
- J. Accessories:
1. Exterior wall louver
- K. Manufacturer: Subject to compliance with requirements. Provide unit ventilators of one of the following:
1. Daikin
 2. Acceptable Alternates
 - a. The District has previously executed a Board Resolution to standardize Daikin equipment for Unit Ventilators and Condensers throughout the District. As such the Base Bid shall include equipment as provided by Daikin. However, the District also reserves it right to entertain alternate manufacturers for this equipment and may be listed as Deduct Alternates. Supply Deduct Alternate along with alternative manufacturer within the space(s) provided. Acceptable alternate manufacturers include Magicaire or others deemed equal by the design Engineer.
- L. Provide finished side panels and matching filler sections by the same manufacturer, where new unit ventilators are smaller than the existing unit ventilators being replaced, or where the unit ventilator is larger than the existing and no new cabinetry is specified. No unfinished wall surfaces shall be exposed after installation.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Examine areas and conditions under which terminal units are to be installed. Do not proceed with work until unsatisfactory conditions have been corrected in manner acceptable to Installer.

3.02 INSTALLATION OF UNIT VENTILATORS

- A. General: Install unit ventilators as indicated, and in accordance with manufacturer's installation instructions.
- B. Locate unit ventilators as indicated, level and shim units, anchor to substrate.
- C. Provide all blocking, weather stripping, insulation boards, fire rated marine grade plywood, etc. to provide a level, plumb, and air and weather tight seal of unit ventilators to existing exterior wall/OA louver.
- D. Adjust and level unit ventilators to within $\pm 1/8$ " of adjacent cabinetry surfaces. Bring to the attention of the construction manager any conditions which prevent the ability to meet this requirement as soon as they are found.

- E. Install piping as indicated.
- F. Protect units with protective covers during balance of construction.
- G. Coordinate all demolition of existing equipment and adjacent cabinetry with the Owner prior to the start of any work.
- H. In no case shall there be any exposed sharp corners or edges which can lead to cuts or abrasions by the normal activity of the occupants.

3.03 ELECTRICAL WIRING

- A. General: Install electrical devices furnished by manufacturer not specified to be factory-mounted. Furnish copy of manufacturer's wiring diagram.
- B. Verify that electrical wiring installation is in accordance with manufacturer's submittal. Do not proceed with equipment start-up until wiring installation is acceptable to equipment installer.

3.04 ADJUSTMENT AND CLEANING

- A. General: After construction is completed, including painting, clean unit exposed surfaces, vacuum clean terminal coils and inside of cabinets.
- B. Retouch any marred or scratched surfaces of factory-finished cabinets, using finish materials furnished by manufacturer. Provide extra touch up paint to owner.
- C. Install new filter units for terminals requiring the same.
- D. Test, adjusting, and balancing is specified in other Division 23 sections; not work of this section.

END OF SECTION

WHITE PLAINS CITY SCHOOL DISTRICT

AC AND VENTILATION UPGRADES AT

MAMARONECK AVENUE ELEMENTARY SCHOOL

7 NOSBAND AVENUE, WHITE PLAINS, NEW YORK 10605

SED PROJECT CONTROL NUMBER 66-22 - 00 -01 - 0 - 010 - 017

CONTRACT E - ELECTRICAL CONSTRUCTION WORK

CONTRACT H - HEATING VENTILATION AND AIR CONDITIONING











ABBREVIATIONS

AB	Anchor Bolt	FIN	Finish
A/C	Air Conditioning	FR	Fire Retardant
ACI	American Concrete Institute	FTG	Footings
ACST	Acoustic	GA	Gauge
ACT	Acoustical Ceiling Tile	GWB	Gypsum Wall Board
ACU	Air Conditioning Unit	GYP	Gypsum
AD	Access Door	GYP. BD.	Gypsum Board
ADJ	Adjustable	HC	Handicapped
A/E	Architect/Engineer	HM	Hollow Metal
A/F	Above Finish Floor	HOR	Horizontal
ALUM	Aluminum	HW	Hot Water
ANCH	Anchor	INSUL	Insulation/Insulating
ANSI	American National Standards Institute	INT	Interior
APA	Access Panel	LAV	Lavatory
APPROX	Approximately	LDR	Leader
ASPH	Asphalt	LT	Light
ASTM	American Society for Testing & Materials	LT	Maximum
		MECH	Mechanical
		MISC	Miscellaneous
		MO	Masonry Opening
		MR	Moisture Resistant
		NIC	Not in Contact
		NTS	Not to Scale
		OC	On Center
		OD	Outside Diameter
		PYYWD	Plywood
		PSF	Pounds per Square Foot
		PSI	Pounds per Square Inch
		PTD	Painted
		PVC	Polyvinyl Chloride
		R	Radius or Riser
		RCP	Reflected Ceiling Plan
		RD	Roof Drain
		REINF	Reinforced
		RM	Room
		RO	Rough Opening
		SIM	Similar
		SPEC	Specifications
		SQ	Square
		SS	Stainless Steel
		STL	Steel
		TEMP	Temperature
		TER	Terrazzo
		THK	Thickness
		TYP	Typical
		UTIL	Utility
		VB	Vapor Barrier
		VCT	Vinyl Composition Tile
		VERT	Vertical
		VTR	Vent Thru Roof
		WC	Water Closet
		WH	Water Heater
		WWF	Welded Wire Fabric

LOCATION MAPS




SYMBOLS LEGEND

GYMNASIUM	ROOM DESIGNATION		
-			GYPSUM
	CONCRETE		AGGREGATE SUB-BASE
	EARTH		BATT INSULATION
	PLYWOOD		RIGID INSULATION
	STEEL		WOOD
	WOOD BLOCKING		

UNIFORM SAFETY STANDARDS - FOR SCHOOL CONSTRUCTION AND MAINTENANCE PROJECTS

- | | | | | |
|---|--|--|---|---|
| <p>THE OCCUPIED PORTION OF ANY SCHOOL BUILDING SHALL ALWAYS COMPLY WITH THE MINIMUM REQUIREMENTS NECESSARY TO MAINTAIN A CERTIFICATE OF OCCUPANCY."</p> <p>2. SPECIFIC AREAS HAVE BEEN TESTED AND FOUND NOT TO CONTAIN ASBESTOS AS DESCRIBED IN THE PROJECT MANUAL. A COPY OF THE REPORT CAN BE VIEWED AT THE DISTRICT OFFICE LOCATED AT 5 HOMESIDE LANE, WHITE PLAINS, NY 10605</p> <p>"GENERAL SAFETY AND SECURITY STANDARDS FOR CONSTRUCTION PROJECTS:</p> | <p>4. "SEPARATION OF CONSTRUCTION AREAS FROM OCCUPIED SPACES: CONSTRUCTION AREAS WHICH ARE UNDER THE CONTROL OF A CONTRACTOR AND THEREFORE NOT OCCUPIED BY DISTRICT STAFF OR STUDENTS SHALL BE SEPARATED FROM OCCUPIED AREAS. PROVISIONS SHALL BE MADE TO PREVENT THE PASSAGE OF DUST AND CONTAMINANTS INTO OCCUPIED PARTS OF THE BUILDING. PERIODIC INSPECTION AND REPAIRS OF THE CONTAINMENT BARRIERS MUST BE MADE TO PREVENT EXPOSURE TO DUST OR CONTAMINANTS. GYPSUM BOARD MUST BE USED IN EXITWAYS OR OTHER AREAS THAT REQUIRE FIRE RATED SEPARATION. HEAVY DUTY PLASTIC SHEETING MAY BE USED ONLY FOR A VAPOR, FINE DUST OR AIR INFILTRATION BARRIER, AND SHALL NOT BE USED TO SEPARATE OCCUPIED SPACES FROM CONSTRUCTION AREAS.</p> | <p>6. WORK UNDER THIS CONTRACT WILL BE CONDUCTED DURING THE SUMMER RECESS WHEN THE BUILDING IS UNOCCUPIED. IF THE BUILDING BECOMES OCCUPIED THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN ALL EXISTING MEANS OF EGRESS IN A CLEAR AND FREE MANNER, INCLUDING THE STORAGE OF MATERIALS AND STAGING OF EQUIPMENT ON THE SITE. IF ANY PORTION OF THE BUILDING DOES BECOME OCCUPIED THE ARCHITECT WILL PROVIDE A DETAILED PLAN FOR EXITING, OVERHEAD PROTECTION AND EGRESS IN ACCORDANCE WITH APPLICABLE BUILDING CODES.</p> <p>7. A PLAN DETAILING HOW ADEQUATE VENTILATION WILL BE MAINTAINED DURING CONSTRUCTION.</p> | <p>9. "THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ACTIVITIES AND MATERIALS WHICH RESULT IN "OFF-GASSING" OF VOLATILE ORGANIC COMPOUNDS SUCH AS GLUES, PAINTS, FURNITURE, CARPETING, WALL COVERING, DRAPERY, ETC. ARE SCHEDULED, CURED OR VENTILATED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS BEFORE A SPACE CAN BE OCCUPIED."</p> <p>10. "LARGE AND SMALL ASBESTOS ABATEMENT PROJECTS AS DEFINED BY 12NYCRR56 SHALL NOT BE PERFORMED WHILE THE BUILDING IS OCCUPIED." IT IS OUR INTERPRETATION THAT THE TERM "BUILDING," AS REFERENCED IN THIS SECTION, MEANS A WING OR MAJOR SECTION OF A BUILDING THAT CAN BE COMPLETELY ISOLATED FROM THE REST OF THE BUILDING WITH SEALED NON COMBUSTIBLE CONSTRUCTION. THE ISOLATED PORTION OF THE BUILDING MUST CONTAIN EXITS THAT DO NOT PASS THROUGH THE OCCUPIED PORTION AND VENTILATION SYSTEMS MUST BE PHYSICALLY SEPARATED AND SEALED AT THE ISOLATION BARRIER.</p> | <p>12. UNDER NEW YORK STATE LAW SMOKING IS PROHIBITED ON SCHOOL GROUNDS. EMPLOYEES FOUND TO BE SMOKING ON SCHOOL GROUNDS SHALL BE ORDERED OFF SITE AND A SECOND OFFENSE WILL BE GROUNDS FOR PERMANENT REMOVAL FROM PROJECT. LEGAL PENALTIES MAY ALSO BE APPLIED.</p> <p>ALL CONTRACTORS SHALL TAKE EVERY PRECAUTION AND SHALL PROVIDE SUCH EQUIPMENT AND FACILITIES AS ARE NECESSARY OR REQUIRED FOR THE SAFETY OF ITS EMPLOYEES. IN CASE OF AN ACCIDENT, FIRST AID SHALL BE ADMINISTERED TO ANY WHO MAY BE INJURED IN THE PROGRESS OF THE WORK. IN ADDITION, THE CONTRACTOR SHALL BE PREPARED FOR THE REMOVAL TO THE HOSPITAL FOR TREATMENT OF ANY EMPLOYEE EITHER SERIOUSLY INJURED OR ILL.</p> <p>THE CONTRACTOR FOR GENERAL CONSTRUCTION SHALL PROVIDE TEMPORARY WEATHER-TIGHT AND INSULATED ENCLOSURES AS MAY BE REQUIRED BY THE SCOPE OF WORK FOR ALL EXTERIOR OPENINGS SO AS TO PROTECT ALL WORK FROM THE WEATHER, AND TO PROVIDE SECURITY AGAINST UNAUTHORIZED ENTRY. ENCLOSURES SHALL NOT CREATE DEAD END CONDITIONS. REQUIRED EXITS SHALL BE MAINTAINED FREE AND CLEAR.</p> |
| <p>ALL CONSTRUCTION MATERIALS SHALL BE STORED IN A SAFE AND SECURE MANNER.</p> <p>(1) FENCES AROUND CONSTRUCTION SUPPLIES OR DEBRIS SHALL BE MAINTAINED.</p> <p>(2) GATES SHALL ALWAYS BE LOCKED UNLESS A WORKER IS IN ATTENDANCE TO PREVENT UNAUTHORIZED ENTRY.</p> <p>(3) DURING EXTERIOR RENOVATION WORK, OVERHEAD PROTECTION SHALL BE PROVIDED FOR ANY SIDEWALKS OR AREAS IMMEDIATELY BENEATH THE WORK SITE OR SUCH AREAS SHALL BE FENCED OFF AND PROVIDED WITH WARNING SIGNS TO PREVENT ENTRY.</p> <p>(4) WORKERS SHALL BE REQUIRED TO WEAR PHOTO-IDENTIFICATION BADGES AT ALL TIMES FOR IDENTIFICATION AND SECURITY PURPOSES WHILE WORKING AT OCCUPIED SITES."</p> <p>(5)</p> | <p>(1) A SPECIFIC STAIRWELL AND/OR ELEVATOR SHALL BE ASSIGNED OR CONSTRUCTION WORKER USE DURING WORK HOURS. IN GENERAL, WORKERS MAY NOT USE CORRIDORS, STAIRS OR ELEVATORS DESIGNATED FOR STUDENTS OR SCHOOL STAFF. WHERE NO STAIRWELL AND OR ELEVATOR IS ASSIGNED, WORKERS MUST ENTER THE CONSTRUCTION SPACES DIRECTLY FROM THE BUILDING EXTERIOR.</p> <p>(2) LARGE AMOUNTS OF DEBRIS MUST BE REMOVED BY USING ENCLOSED CHUTES OR A SIMILAR SEALED SYSTEM. THERE SHALL BE NO MOVEMENT OF DEBRIS THROUGH HALLS OF OCCUPIED SPACES OF THE BUILDING. NO MATERIAL SHALL BE DROPPED OR THROWN OUTSIDE THE WALLS OF THE BUILDING.</p> <p>(3) ALL OCCUPIED PARTS OF THE BUILDING AFFECTED BY RENOVATION ACTIVITY SHALL BE CLEANED AT THE CLOSE OF EACH WORKDAY. SCHOOL BUILDINGS OCCUPIED DURING A CONSTRUCTION PROJECT SHALL MAINTAIN REQUIRED HEALTH, SAFETY AND EDUCATIONAL CAPABILITIES AT ALL TIMES THAT CLASSES ARE IN SESSION."</p> | <p>8. WORK UNDER THIS PROJECT WILL BE COMPLETED DURING THE SUMMER RECESS WHEN THE BUILDING WILL NOT BE OCCUPIED BY FACULTY, STAFF OR STUDENTS. IF A PORTION OF THE BUILDING IS TO BECOME OCCUPIED DURING THE CONSTRUCTION PROCESS THE CONTRACTOR SHALL CLOSE OFF ALL INTAKES, OPENINGS, AND MECHANICAL VENTILATION SYSTEMS ADJACENT TO THE WORK AREA. THE ARCHITECT SHALL ASSIST THE CONTRACTOR IN DEVELOPING A PLAN TO PROVIDE ALTERNATE MEANS OF FRESH AIR TO ALL OCCUPIED SPACES.</p> <p>"CONSTRUCTION AND MAINTENANCE OPERATIONS SHALL NOT PRODUCE NOISE IN EXCESS OF 60 DBA IN OCCUPIED SPACES OR SHALL BE SCHEDULED FOR TIMES WHEN THE BUILDING OR AFFECTED BUILDING SPACES ARE NOT OCCUPIED OR ACOUSTICAL ABATEMENT MEASURES SHALL BE TAKEN "</p> <p>"THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF CHEMICAL FUMES, GASES, AND OTHER CONTAMINANTS PRODUCED BY WELDING, GASOLINE OR DIESEL ENGINES, ROOFING, PAINTING, ETC. TO ENSURE THEY DO NOT ENTER OCCUPIED PORTIONS OF THE BUILDING OR AIR INTAKES." ALL VENTS SHALL BE SEALED TO PREVENT CONTAMINANTS FROM THE CONSTRUCTION AREA FROM ENTERING THE OCCUPIED AREAS OF THE BUILDING.</p> | <p>11. EXTERIOR WORK SUCH AS ROOFING, CLADDING, SIDING, OR SOFFIT WORK MAY BE PERFORMED ON OCCUPIED BUILDINGS PROVIDED PROPER VARIANCES ARE IN PLACE AS REQUIRED, AND COMPLETE ISOLATION OF VENTILATION SYSTEMS AND AT WINDOWS IS PROVIDED. CARE MUST BE TAKEN TO SCHEDULE WORK SO THAT CLASSES ARE NOT DISRUPTED BY NOISE OR VISUAL DISTRACTION.</p> <p>MINOR ASBESTOS PROJECTS DEFINED BY 12NYCRR56 AS AN ASBESTOS PROJECT INVOLVING THE REMOVAL, DISTURBANCE, REPAIR, ENCAPSULATION, ENCLOSURE OR HANDLING OF 10 SQUARE FEET OF ASBESTOS OR ASBESTOS MATERIAL MAY BE PERFORMED IN UNOCCUPIED AREAS OF AN OCCUPIED BUILDING IN ACCORDANCE WITH 12NYCRR56.</p> <p>SPECIFIC AREAS HAVE BEEN TESTED AND FOUND TO CONTAIN LEAD AS DESCRIBED IN THE PROJECT MANUAL. THESE AREAS WILL BE ABATED IN ACCORDANCE WITH SPECIFICATION SECTION 02600.</p> | |



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[illegible]

ALTERATION OF THIS DOCUMENT EXCEPT BY A LICENSED PROFESSIONAL IS ILLEGAL			
DESIGNED BY:	DRAWN BY:	CHECKED BY:	REVIEWED BY: QAQC
PROJECT No.: WPSD 2205	DATE: OCTOBER 2023		SCALE:

CLIENT

**White Plains City
School District**

AC and Ventilation Upgrades at Mamaroneck Elementary School



**7 Nosband Ave.
White Plains, NY 10605**

**SED PROJECT CONTROL
NO. 66-22-00-01-0-010-017**

CONTRACT

ALL CONTRACTS

STATUS

FINAL BID DOCUMENT

SHEET TITLE

GENERAL NOTES, MAPS, DRAWINGS LIST AND LEGENDS

DRAWING No.

G000.00

X:\WPSP\White Plains Central School District - 1001\HPSD 2205 - AC & Ventilation at Mamaroneck Elem. School\02-BM-CADD\Contractor\hvac\M001.DWG HVAC General Notes and Legend.dwg, Nov 01, 2023, 4:38pm, Plotted on: Nov 01, 2023, 4:38pm By: M001.dwg

ABBREVIATIONS	
AFF	ABOVE FINISHED FLOOR
BCU	BUILDING CONTROL UNIT
BTU	BRITISH THERMAL UNIT
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CLG	CEILING
COMM.	COMMUNICATION
CV	CONTROL VALVE
(D)	DEMOLISH
DB	DRY BULB
DCV	DEMAND CONTROLLED VENTILATION
DEG. F	DEGREES FAHRENHEIT
DIA	DIAMETER
DX	DIRECT EXPANSION
'E'	ELECTRICAL CONTRACTOR
(E)	EXISTING
EA	EACH
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENCY RATING
ESP	EXTERNAL STATIC PRESSURE
FAI	FRESH AIR INTAKE
FD	FLOOR DRAIN
FLA	FULL LOAD AMPS
FT. H2O	FEET OF WATER
FTR	FIN TUBE RADIATOR
'G'	GENERAL CONSTRUCTION CONTRACTOR
GPM	GALLONS PER MINUTE
GPH	GALLONS PER HOUR
H	HEIGHT
'H'	HVAC CONTRACTOR
HP	HORSEPOWER
IN.	INCHES
IN. W.C. (W.G.)	INCHES WATER COLUMN (WATER GAUGE)
KW	KILOWATTS
L	LENGTH
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LCD	LIQUID CRYSTAL DISPLAY
LDB	LEAVING DRY BULB TEMPERATURE
LWB	LEAVING WET BULB TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
M	METER
MAX	MAXIMUM
MBH	1,000 BTU PER HOUR
MCA	MINIMUM CIRCUIT AMPACITY
MIN	MINIMUM
MNF	MANUFACTURER
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
OAI	OUTDOOR AIR INTAKE
OD	OUTER DIAMETER
OED	OPEN ENDED DUCT
'P'	PLUMBING CONTRACTOR
PD	PRESSURE DROP
PSIG	LBS / SQUARE INCH (GAUGE PRESSURE)
RA	RETURN AIR
RD	ROOF DRAIN
RPM	REVOLUTIONS PER MINUTE
RPZ	REDUCED PRESSURE ZONE
SA	SUPPLY AIR
SAT	SUPPLY AIR TEMPERATURE
SEER	SEASONAL ENERGY EFFICIENCY RATING
TEMP	TEMPERATURE
TG	TRANSFER GRILLE
TYP	TYPICAL
VFD	VARIABLE FREQUENCY DRIVE
W	WIDTH
WB	WET BULB
WMS	WIRE MESH SCREEN

SYMBOL	ABBREV	DESCRIPTION
		DUCTWORK BRANCH CONNECTION
	VD	VOLUME DAMPER
	CD	ROUND FACE SUPPLY DIFFUSER
	SEE AIR DEVICE SCHEDULE	SIDEWALL SUPPLY, RETURN OR EXHAUST GRILLE/REGISTER
	SEE AIR DEVICE SCHEDULE	SQUARE FACE SUPPLY DIFFUSER
	SEE AIR DEVICE SCHEDULE	BOTTOM RETURN OR EXHAUST GRILLE/REGISTER
	FC	FLEXIBLE CONNECTION
		TURNING VANES
		RECTANGULAR TO ROUND TRANSITION
	AL	ACOUSTICAL LINING
		END CAP
	SEE AIR DEVICE SCHEDULE	SUPPLY DIFFUSER WITH DIRECTIONAL FLOW (SOLID HATCH INDICATES BLANK OFF PANEL)
		SUPPLY DUCT DROP (TURN DOWN)
		RETURN/EXHAUST DUCT DROP (TURN DOWN)
		SUPPLY DUCT RISE
		RETURN/EXHAUST DUCT RISE
	DSD	DUCT SMOKE DETECTOR
	MD	MOTORIZED DAMPER WITH ACTUATOR
	AD	ACCESS DOOR
	FD/AD	FIRE DAMPER WITH ACCESS DOOR
	FSD/AD	FIRE SMOKE DAMPER WITH ACCESS DOOR
	FAN	FAN
		WORK TO BE REMOVED
		POINT OF DISCONNECTION FROM EXISTING
		POINT OF CONNECTION TO EXISTING

SYMBOL	ABBREV	DESCRIPTION
	C	CARBON MONOXIDE SENSOR
	T	THERMOSTAT
	S	DIGITAL TEMPERATURE SENSOR
	H	HUMIDITY SENSOR
	CO2	CARBON DIOXIDE SENSOR
	P	PRESSURE SENSOR

SYMBOL	ABBREV	DESCRIPTION
		NEW WORK
		PIPING DOWN/ PIPING UP
		BALL VALVE WITH HOSE END CONNECTION
	TH	THERMOMETER
	U	UNION
	FPC	FLEXIBLE PIPE CONNECTION
		DIRECTION OF FLOW
	PSR	PRESSURE SAFETY AND RELIEF VALVE
	PRV	PRESSURE REDUCING VALVE
	BV	BALL VALVE
	BA	BALANCING VALVE
	BFV	BUTTERFLY VALVE
		TEMPERATURE SENSOR WITH THERMOWELL
	GA	GATE VALVE
	GB	GLOBE VALVE
	AV	AUTOMATIC AIR VENT
	CV	2-WAY ELECTRONIC CONTROL VALVE
	CV	3-WAY ELECTRONIC CONTROL VALVE
	CV	2-WAY PNEUMATIC CONTROL VALVE
	CV	3-WAY PNEUMATIC CONTROL VALVE
	STR	STRAINER WITH BLOW OFF VALVE WITH HOSE END CONNECTION
	FD	FLOOR DRAIN
		AIR SEPARATOR
	F&T	STEAM TRAPS (INDICATE TYPE)
	CH	CHECK VALVE
	PG	PRESSURE GAUGE WITH GAUGE COCK
	RED	REDUCER
	CO	CLEANOUT END CAP
		PIPE GUIDE
		PIPE ANCHOR
		CAPPED PIPE
		PUMP
		WORK TO BE REMOVED
		POINT OF DISCONNECTION FROM EXISTING
		POINT OF CONNECTION TO EXISTING
	TDV	TRIPLE DUTY VALVE

SYSTEM COMMISSIONING NOTES (NYS):

- COMMISSION ALL NEW BUILDING MECHANICAL SYSTEMS IN ACCORDANCE WITH THE REQUIREMENTS OF THE 2020 NEW YORK STATE (NYS) ENERGY CONSERVATION CODE (ECC) SECTION C408. COMMISSIONING SHALL BE PERFORMED BY AN APPROVED THIRD-PARTY COMMISSIONING AGENCY HIRED BY THE OWNER. REFER TO SPECIFICATION SECTION 230800 - COMMISSIONING OF MECHANICAL SYSTEMS FOR MORE INFORMATION.
- PROVIDE DRAWINGS, OPERATION & MAINTENANCE (O&M) MANUALS, AND SYSTEM BALANCING REPORTS TO BUILDING OWNER OR OWNERS AUTHORIZED AGENT WITHIN 90 DAYS OF THE DATE OF RECEIPT OF THE CERTIFICATE OF OCCUPANCY OR LETTER OF COMPLETION IN ACCORDANCE WITH THE 2020 NYS ECC SECTION C408.2.5.
- PROVIDE FINAL COMMISSIONING REPORT TO THE BUILDING OWNER OR OWNER'S AUTHORIZED AGENT WITHIN 90 DAYS OF THE RECEIPT OF THE CERTIFICATE OF OCCUPANCY OR LETTER OF COMPLETION IN ACCORDANCE WITH THE REQUIREMENTS OF THE 2020 NYS ECC SECTION C408.2.5.4.

GENERAL NOTES

- PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE MECHANICAL SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.
- THE CONTRACTOR, BY PRESENTING THEIR BID FOR THE WORK, REPRESENTS THAT HE/SHE HAS INSPECTED THE SITE AND IS COMPLETELY FAMILIAR WITH THE SCOPE OF WORK AND ALL FIELD CONDITIONS RELATED TO, AND AFFECTING THE WORK AND ITS PERFORMANCE. EXCEPTIONS AFFECTING THE WORK AND ITS PERFORMANCE, OR CONFLICTS BETWEEN FIELD CONDITIONS, SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO THE SUBMISSION OF BIDS.
- PERFORM ALL WORK IN ACCORDANCE WITH THE PLUMBING CODE, FIRE CODE, MECHANICAL CODE, ENERGY CONSERVATION CONSTRUCTION CODE, AND FUEL GAS CODE OF NEW YORK STATE AND THE REQUIREMENTS OF THE LOCAL AUTHORITIES HAVING JURISDICTION.
- COMPLY WITH THE NATIONAL ELECTRIC CODE AND THE REQUIREMENTS OF DIVISION 26 FOR ALL ELECTRICAL INSTALLATIONS.
- FIRE STOP ALL OPENINGS IN FIRE RATED CONSTRUCTION FOR PIPING, DUCTWORK, CONDUIT, ETC. PROVIDE FIRE DAMPERS AND ACCESS DOORS IN ALL OPENINGS IN FIRE RATED FLOORS, PARTITIONS, AND WALLS FOR DUCTWORK AS PER THE MECHANICAL CODE OF NEW YORK STATE. (SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF FIRE RATED CONSTRUCTION.)
- DO NOT SCALE DRAWINGS. DRAWINGS FOR HVAC WORK ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS THAT ARE NOT DEFINITELY FIXED BY DIMENSIONS ARE APPROXIMATE. COORDINATE CONTRACT DOCUMENTS, PROJECT REQUIREMENTS, WORK OF OTHERS, AND EQUIPMENT AND MATERIALS PURCHASED WITH FIELD DIMENSIONS. INSTALL ALL EQUIPMENT AS PER MANUFACTURER'S REQUIREMENTS TO PROVIDE PROPER CLEARANCE FOR INSTALLATION, OPERATION, AND MAINTENANCE. CONTRACTOR'S INTENDED MEANS AND METHODS OF INSTALLATION AND CONTRACTOR'S FABRICATED ITEMS SHALL ENSURE A PROPER 'FIT' AND INSTALLATION. BRING ANY CONFLICTS TO THE ATTENTION OF THE ARCHITECT/ENGINEER DURING THE SUBMITTAL PHASE FOR RESOLUTION PRIOR TO PURCHASING ANY EQUIPMENT.
- MAINTAIN MAXIMUM HEADROOM AND SPACE CONDITIONS AT ALL POINTS. WHERE HEADROOM AND SPACE CONDITIONS APPEAR INADEQUATE, NOTIFY THE ARCHITECT/ENGINEER PRIOR TO PROCEEDING WITH INSTALLATION. MAINTAIN A MINIMUM OF 6'-8" CLEARANCE FROM FINISHED FLOOR TO UNDERSIDE OF PIPES, DUCTS, CONDUITS, SUSPENDED EQUIPMENT, ETC., THROUGHOUT ACCESS ROUTES IN MECHANICAL ROOMS.
- FIELD VERIFY AND COORDINATE ALL DUCT AND PIPING DIMENSIONS BEFORE FABRICATION. MAKE MODIFICATIONS IN THE LAYOUT AS NEEDED TO PREVENT CONFLICT WITH WORK OF OTHER TRADES OR FOR PROPER EXECUTION OF THE WORK. OBTAIN THE APPROVAL OF THE ARCHITECT/ENGINEER FOR MODIFICATIONS.
- PROVIDE PRODUCTS OF ONE MANUFACTURER WHERE TWO OR MORE ITEMS OF THE SAME TYPE OF MATERIAL OR EQUIPMENT IS REQUIRED.
- INSTALL ALL EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, CONTRACT DOCUMENTS, AND APPLICABLE CODES AND REGULATIONS. REFER TO DETAILS FOR ADDITIONAL PIPING AND EQUIPMENT INSTALLATION REQUIREMENTS.
- LOCATE ALL TEMPERATURE, PRESSURE, AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS WITH STRAIGHT SECTION OF PIPE OR DUCT UP- AND DOWNSTREAM AS RECOMMENDED BY THE MANUFACTURER TO ENSURE MANUFACTURER CERTIFIED ACCURACY.
- COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. COORDINATE AND PROVIDE ALL PIPING AND DUCT TRANSITIONS REQUIRED FOR FINAL CONNECTIONS TO EQUIPMENT.
- COORDINATE LOCATIONS AND SIZES OF ALL FLOOR, WALL, AND ROOF OPENINGS WITH ALL OTHER TRADES. COORDINATE ALL PIPING AND EQUIPMENT SUPPORTED FROM STRUCTURE WITH GENERAL CONSTRUCTION WORK.
- COORDINATE INSTALLATION OF SUPPLY AND RETURN GRILLES WITH INSTALLATION OF FINISHED CEILINGS.
- COMPLETE ALL PRESSURE TESTS BEFORE ANY MECHANICAL EQUIPMENT, DUCTWORK, OR PIPING INSULATION IS APPLIED.
- TESTING, ADJUSTING, AND BALANCING AGENCY SHALL BE A MEMBER OF THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB). PERFORM ALL TESTING, ADJUSTING, AND BALANCING IN ACCORDANCE WITH THE SPECIFICATIONS.
- MAKE ALL ATTACHMENTS TO JOISTS, TRUSSES, OR JOIST GIRDERS AT PANEL POINTS. PROVIDE BEAM CLAMPS MEETING MSS STANDARDS. THE USE OF C-CLAMPS IS NOT PERMITTED.
- PROVIDE CONCRETE PADS A MINIMUM OF 6 INCHES HIGH FOR ALL FLOOR MOUNTED EQUIPMENT. EXTEND PAD 4 INCHES BEYOND THE EQUIPMENT ON ALL SIDES.
- INTERNALLY LINE ALL SUPPLY AND RETURN DUCTWORK WITHIN 20 FEET UPSTREAM AND DOWNSTREAM OF FANS WITH 1" THICK INSULATION. INTERNALLY LINED DUCTWORK MEETING THIS REQUIREMENT SHALL ALSO BE PROVIDED WITH EXTERNALLY APPLIED INSULATION AS REQUIRED BY THE SPECIFICATIONS. SEE SPECIFICATION SECTION 230719 FOR ADDITIONAL REQUIREMENTS.
- PROVIDE TRAPPED DRAIN PIPING FROM DRAIN PANS OF ALL COOLING COILS, FANS, AND OTHER ACTIVE DRAINS EXPOSED TO SYSTEM AIR STREAM. PROVIDE TRAP AT CONNECTION. WATER SEAL DEPTH 1 INCH GREATER THAN UNIT OPERATING PRESSURE. DIRECT DRAINS TO NEAREST FLOOR DRAIN, MOP SINK, OR OTHER LOCATION APPROVED BY THE ARCHITECT/ENGINEER.
- INSTALL PIPING, DUCTWORK, AND CONDUIT CONCEALED IN AREAS HAVING HUNG CEILINGS AND/OR FURRED SPACES UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

WORK IN EXISTING AREAS

- EXISTING CONDITIONS, INCLUDING EQUIPMENT, DUCT AND PIPE SIZES AND LOCATIONS, INDICATED ON THE DRAWINGS ARE DIAGRAMMATIC. CONFIRM ALL EXISTING CONDITIONS PRIOR TO PROCEEDING WITH THE WORK.
- CUT AND ROUGH PATCH EXISTING CONSTRUCTION AS REQUIRED FOR THE PERFORMANCE OF THE WORK. FINISH PATCHING AND FLASHING REQUIREMENTS ARE SHOWN ON THE ARCHITECTURAL DRAWINGS. PERFORM ALL CUTTING AND PATCHING WORK IN A MANNER SUCH THAT ANY EXISTING WARRANTIES/GUARANTEES ARE NOT VOIDED. USE QUALIFIED PERSONNEL IN PERFORMANCE OF THE WORK.

SCOPE NOTES

- PROVIDE ALL LOUVERS FOR INSTALLATION. SUBMIT LOUVER COLOR AND CONFIGURATION TO THE ARCHITECT/ENGINEER FOR APPROVAL.
- INSTALL SMOKE DETECTORS IN DUCTWORK FOR AIR HANDLING UNITS RATED AT 2,000 CFM OR GREATER AND AT FSD/SD. SMOKE DETECTOR SUPPLY AND WIRING IS PART OF CONTRACT 'E'.
- FURNISH AND INSTALL ALL NECESSARY CONTROL WIRING, CONDUIT, AND ACCESSORIES AS REQUIRED TO PROVIDE FULLY FUNCTIONING SYSTEMS AND SEQUENCES OF OPERATION.
- FURNISH ALL LINTELS FOR DUCT AND PIPE PENETRATIONS IN MASONRY WALLS FOR INSTALLATION.
- FURNISH ALL SLEEVES FOR PIPE AND CONDUIT FLOOR, WALL, PARTITION, AND ROOF PENETRATIONS FOR INSTALLATION.
- FURNISH ALL CURBS FOR ALL ROOF MOUNTED EQUIPMENT AND DUCT PENETRATIONS FOR INSTALLATION.
- REMOVE CHASE ENCLOSURE COVER WHEN PERFORMING WORK IN ANY CHASE, AND REINSTALL THE CHASE ENCLOSURE COVER WHEN WORK IS COMPLETE.
- PERFORM ALL CUTTING, ROUGH PATCHING, FINISH PATCHING, AND FLASHING AS REQUIRED IN THE EXECUTION OF THE WORK.
- ALL NEW EQUIPMENT TO BE INTEGRATED WITH EXISTING SCHNEIDER ELECTRIC EMF BMS.

LEGENDS/ABBREVIATIONS NOTES

- ABBREVIATIONS AND SYMBOLS ON THIS SHEET DO NOT DEFINE THE SCOPE OF WORK.

ADD ALTERNATE 1

- PROVIDE PRICING FOR REMOVAL OF PNEUMATIC RADIATOR CONTROL VALVES AND ASSOCIATED THERMOSTATS. SEE MD DRAWINGS FOR FURTHER INFORMATION.
- PROVIDE PRICING FOR FURNISH AND INSTALL OF NEW DDC RADIATOR CONTROL VALVES (CV-1) SEE DRAWINGS FOR FURTHER INFORMATION.
- PROVIDE NEW TWO STAGE THERMOSTATS IN PLACE OF NEW SINGLE STAGE THERMOSTATS ON PLAN. STAGE ONE: HEAT PUMP HEATING, STAGE TWO: HOT WATER RADIATOR HEATING. INTEGRATE WITH EXISTING BUILDING MANAGEMENT SYSTEM.

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M

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CONSULTANTS:

MARK	DATE	DESCRIPTION
	10-16-23	FINAL BID DOCUMENT
1	11-01-23	ADDENDUM #1

STATE OF NEW YORK
JOHN LARAY
LICENSED PROFESSIONAL ENGINEER
101303

DESIGNED BY: MJV
PROJECT NO.: WPSD 2205

DRAWN BY: KCM
DATE: OCTOBER 2023

CHECKED BY: MJV
SCALE:

REVIEWED BY: QAQC

CLIENT

White Plains City
School District

AC and Ventilation Upgrades
at Mamaroneck
Elementary School

White Plains Public Schools
WP
REAL LIFE LEARNING

7 Nosband Ave.
White Plains, NY 10605

SED PROJECT CONTROL
NO. 66-22-00-01-0-010-017

CONTRACT

CONTRACT H
HEATING VENTILATION AND AIR
CONDITIONING

STATUS

FINAL BID DOCUMENT

SHEET TITLE

HVAC LEGENDS, SYMBOLS,
ABBREVIATIONS, AND
GENERAL NOTES

DRAWING No.

M001.00



**SED PROJECT CONTROL
NO. 66-22-00-01-0-010-017**

STATUS	FINAL BID DOCUMENT
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DRAWING No. **MD100.00**

Ground Floor Plan Part A

SCALE: 1/8"=1'-0"

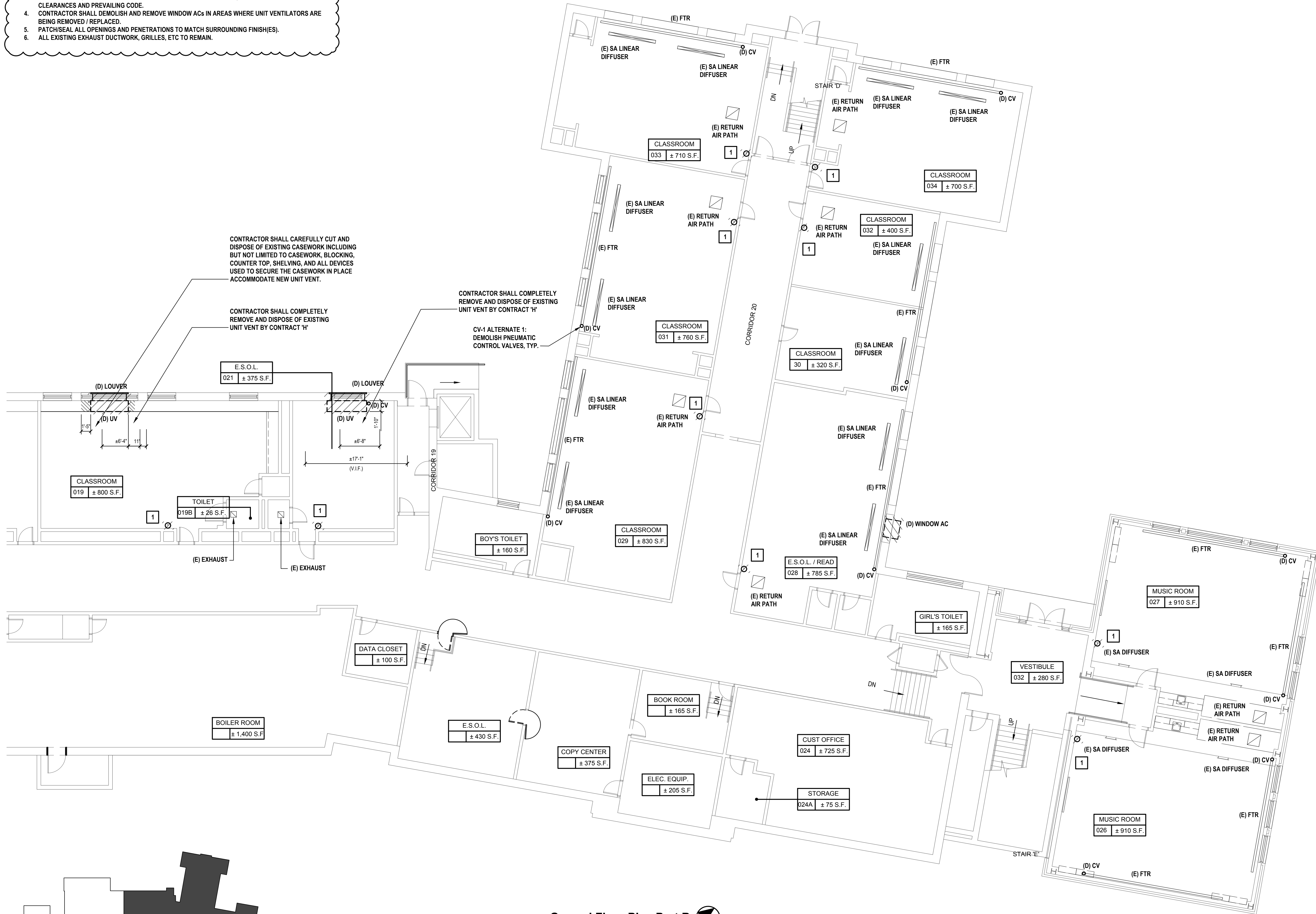
1 THERMOSTAT TO BE DEMOLISHED AS PART OF ADD ALT 1. SEE SHEET M001.
THERMOSTAT TO REMAIN AS PART OF BASE SCOPE

GENERAL NOTES:

- EXISTING CONDITIONS ARE BASED ON A LIMITED FIELD SURVEY. CONTRACT IS RESPONSIBLE FOR VERIFICATION OF EXISTING CONDITIONS FOR ALL CONFLICTS AND SHALL ALERT ENGINEER PRIOR TO COMMENCEMENT OF NEW WORK AND PURCHASE OF EQUIPMENT.
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- PATCH/SEAL ALL OPENINGS AND PENETRATIONS TO MATCH SURROUNDING FINISH(ES).
- ALL EXISTING EXHAUST DUCTWORK, GRILLES, ETC TO REMAIN.

KEYED NOTES:

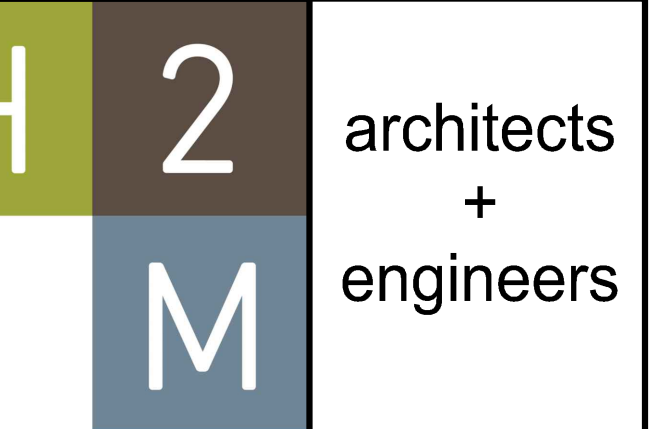
- THERMOSTAT TO BE DEMOLISHED AS PART OF ADD ALT 1. SEE SHEET M001.
- THERMOSTAT TO REMAIN AS PART OF BASE SCOPE



Ground Floor Plan Part B

SCALE: 1/8"=1'-0"

Key Plan



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CONSULTANTS:

MARK	DATE	DESCRIPTION
	10-16-23	FINAL BID DOCUMENT
1	11-01-23	ADDENDUM #1



DESIGNED BY:	DRAWN BY:	CHECKED BY:	REVIEWED BY:
MJV	KCM	MJV	QAQC
PROJECT NO:	DATE:	SCALE:	
WPSD 2205	OCTOBER 2023		

CLIENT
White Plains City School District

**AC and Ventilation Upgrades
at Mamaroneck
Elementary School**



7 Nosband Ave.
White Plains, NY 10605

SED PROJECT CONTROL
NO. 66-22-00-01-0-010-017

CONTRACT
**CONTRACT H
HEATING VENTILATION AND AIR
CONDITIONING**

STATUS
FINAL BID DOCUMENT

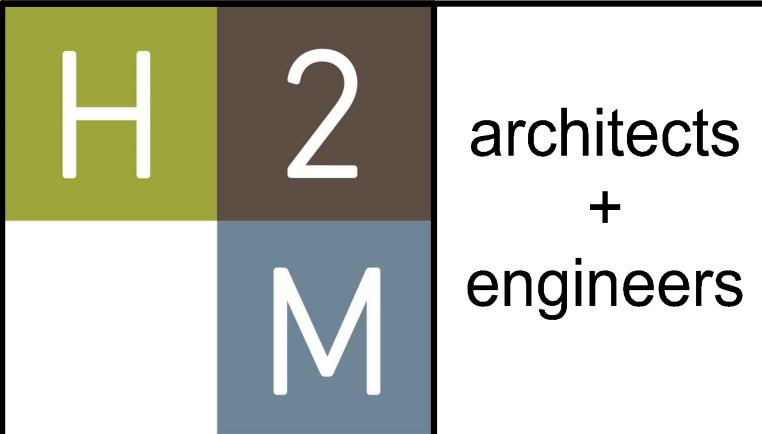
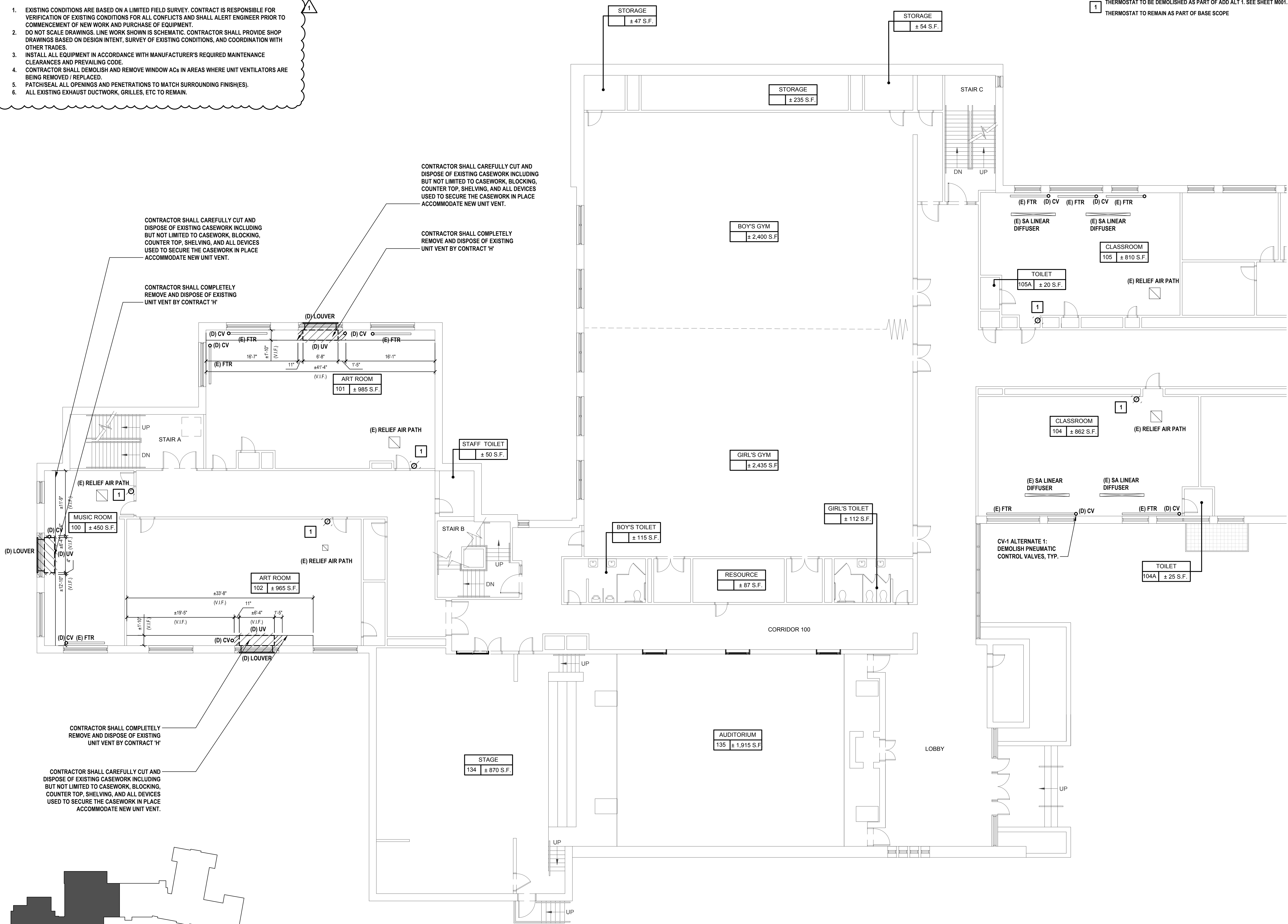
SHEET TITLE
**MECHANICAL GROUND FLOOR
PLAN PART B**

DRAWING No.
MD101.00

X:\PSD\White Plains Central School District - 1081\WPSD 2205 - AC & Ventilation at Mamaroneck Elem. School\02-BIM\CADD\Construction\MD110.00 Mechanical First Floor Plan Part A.dwg Last Modified: No 01, 2023, 2:23pm Plotted on: No 01, 2023, 3:49pm By: Matarand

- GENERAL NOTES:
- EXISTING CONDITIONS ARE BASED ON A LIMITED FIELD SURVEY. CONTRACT IS RESPONSIBLE FOR VERIFICATION OF EXISTING CONDITIONS FOR ALL CONFLICTS AND SHALL ALERT ENGINEER PRIOR TO COMMENCEMENT OF NEW WORK AND PURCHASE OF EQUIPMENT.
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 - ALL EXISTING EXHAUST DUCTWORK, GRILLES, ETC TO REMAIN.

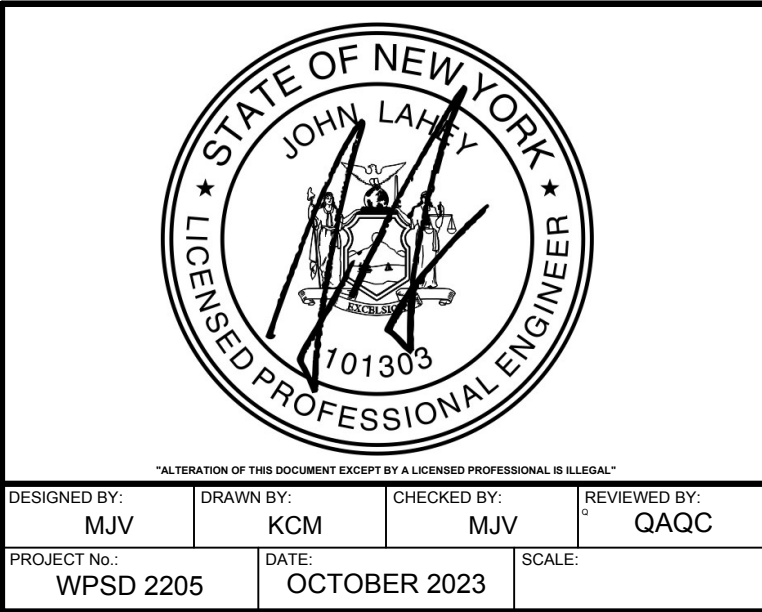
- KEYED NOTES:
- 1 THERMOSTAT TO BE DEMOLISHED AS PART OF ADD ALT 1. SEE SHEET M001.
THERMOSTAT TO REMAIN AS PART OF BASE SCOPE



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CONSULTANTS:

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1	11-01-23	ADDENDUM #1



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White Plains City School District

**AC and Ventilation Upgrades
at Mamaroneck
Elementary School**



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White Plains, NY 10605

SED PROJECT CONTROL
NO. 66-22-00-01-0-010-017

CONTRACT
**CONTRACT H
HEATING VENTILATION AND AIR
CONDITIONING**

STATUS
FINAL BID DOCUMENT

SHEET TITLE
**MECHANICAL FIRST FLOOR
PLAN PART A**

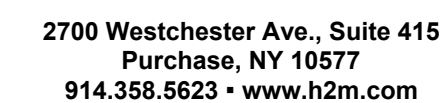
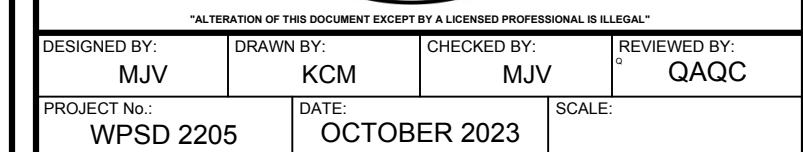
DRAWING No.
MD110.00



First Floor Plan Part A
SCALE: 1/8"=1'-0"

1. EXISTING CONDITIONS ARE BASED ON A LIMITED FIELD SURVEY. CONTRACT IS RESPONSIBLE FOR VERIFICATION OF EXISTING CONDITIONS FOR ALL CONFLICTS AND SHALL ALERT ENGINEER PRIOR TO COMMENCEMENT OF NEW WORK AND PURCHASE OF EQUIPMENT.
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1 THERMOSTAT TO BE DEMOLISHED AS PART OF ADD ALT 1. SEE SHEET M001.
THERMOSTAT TO REMAIN AS PART OF BASE SCOPE

[illegible]

AC and Ventilation Upgrades at Mamaroneck Elementary School



CONTRACT

CONTRACT H

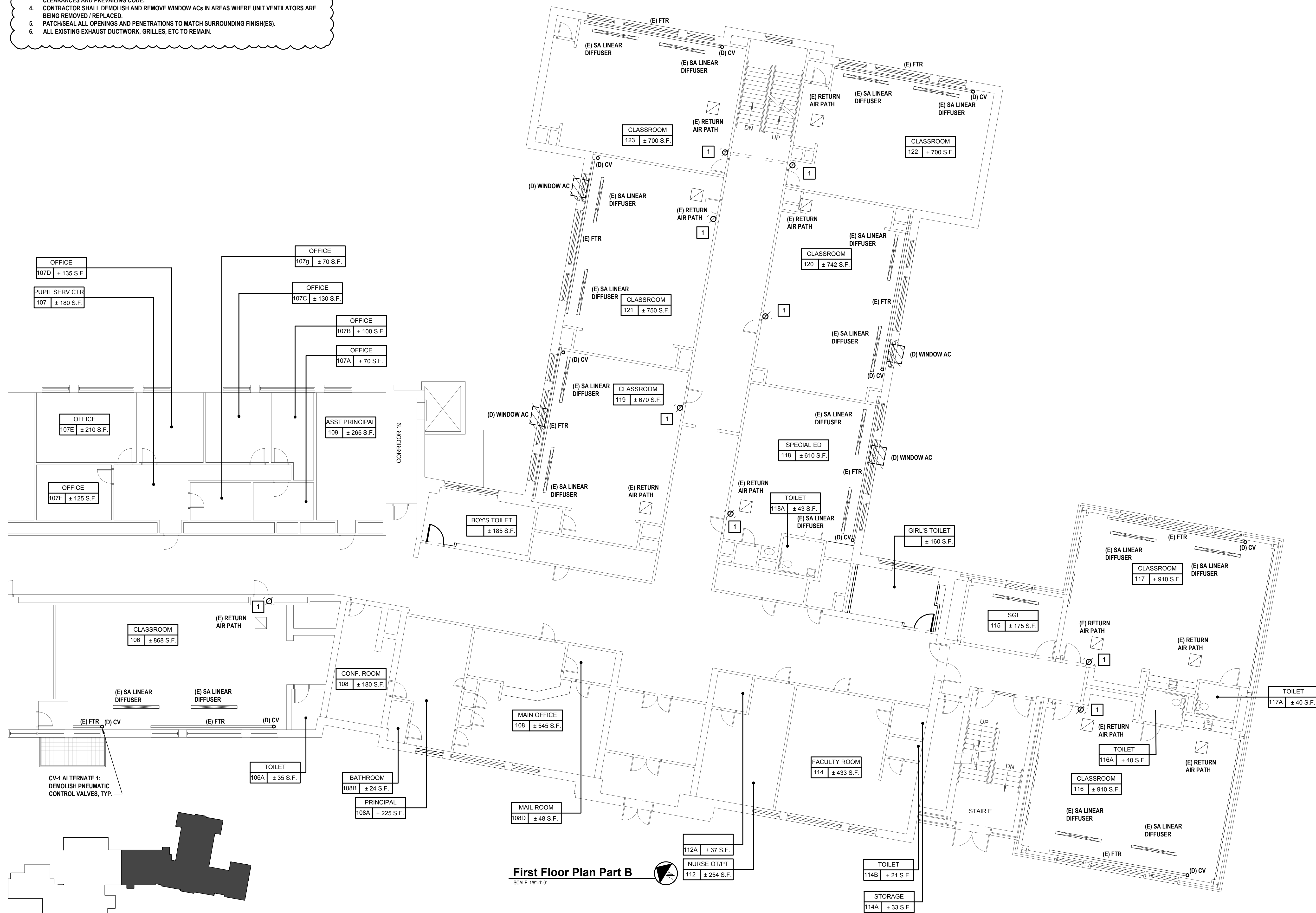
**HEATING VENTILATION AND AIR
CONDITIONING**

STATUS **FINAL BID DOCUMENT**

SHEET TITLE

**MECHANICAL FIRST FLOOR
PLAN PART B**

DRAWING No. **MD111.00**



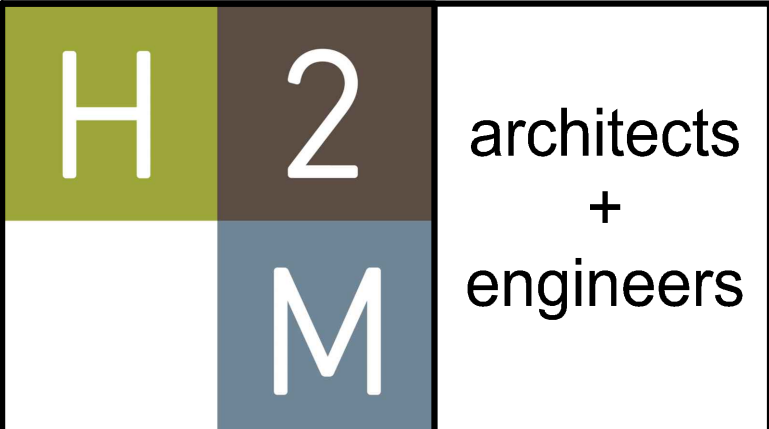
Key Plan 

X:\PSD\White Plains Central School District - 1081\WPSD 2205 - AC & Ventilation at Mamaroneck Elem School\102-BM-CADD\Condsch\w\120.00 Mechanical Second Floor Plan Part A.dwg Last Modified: Nov 01, 2023 3:20pm Plotted on Nov 01, 2023 3:34pm By: Mdelaney

- GENERAL NOTES:
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KEYED NOTES:

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THERMOSTAT TO REMAIN AS PART OF BASE SCOPE



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CONSULTANTS:

MARK	DATE	DESCRIPTION
	10-16-23	FINAL BID DOCUMENT
1	11-01-23	ADDENDUM #1




DESIGNED BY:	DRAWN BY:	CHECKED BY:	REVIEWED BY:
MJV	KCM	MJV	QAQC
PROJECT NO:	DATE:	OCTOBER 2023	SCALE:
WPSD 2205			

CLIENT

White Plains City School District

AC and Ventilation Upgrades
at Mamaroneck Elementary School



7 Nosband Ave.
White Plains, NY 10605

SED PROJECT CONTROL
NO. 66-22-00-01-0-010-017

CONTRACT

CONTRACT H
HEATING VENTILATION AND AIR
CONDITIONING

STATUS

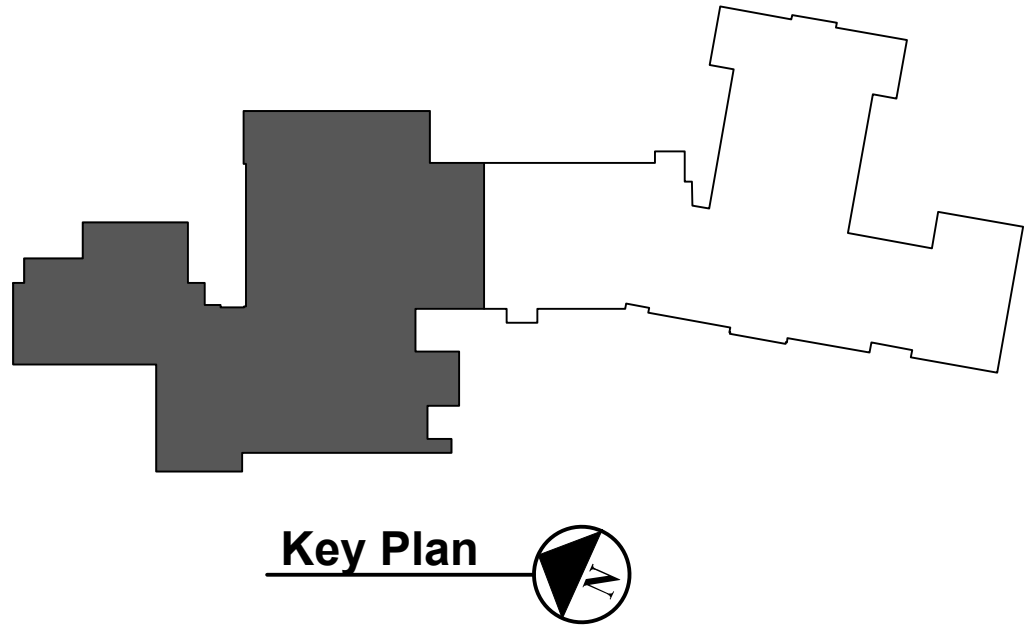
FINAL BID DOCUMENT

SHEET TITLE

MECHANICAL SECOND FLOOR
PART A

DRAWING No.

MD120.00



Second Floor Plan Part A

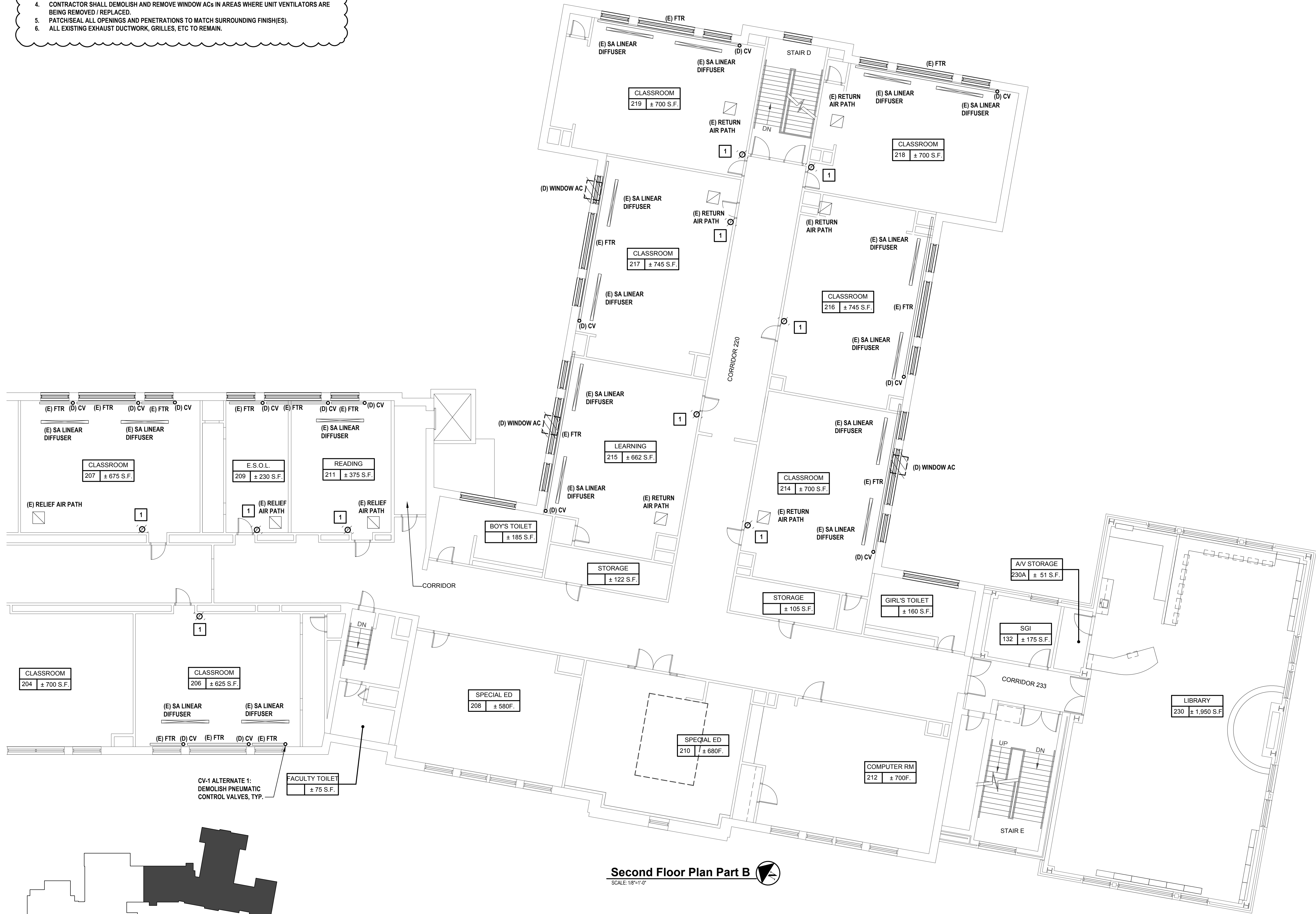
SCALE: 1/8"=1'-0"

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KEYED NOTES:

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THERMOSTAT TO REMAIN AS PART OF BASE SCOPE



Second Floor Plan Part B

SCALE: 1/8"=1'-0"

Key Plan

CONSULTANTS:

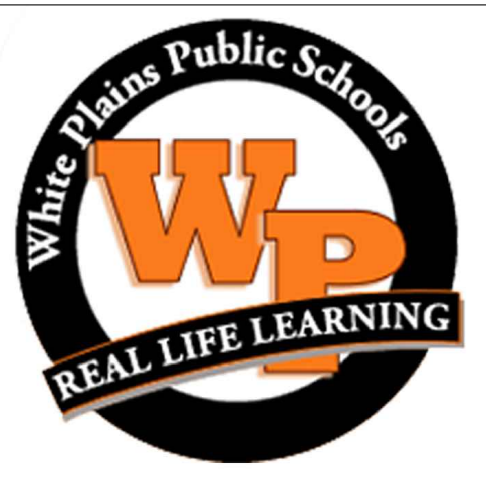
MARK	DATE	DESCRIPTION
	10-16-23	FINAL BID DOCUMENT
1	11-01-23	ADDENDUM #1



DESIGNED BY:	DRAWN BY:	CHECKED BY:	REVIEWED BY:
MJV	KCM	MJV	QAQC
PROJECT No:	DATE:	SCALE:	
WPSD 2205	OCTOBER 2023		

White Plains City School District

AC and Ventilation Upgrades at Mamaroneck Elementary School



7 Nosband Ave.
White Plains, NY 10605

SED PROJECT CONTROL
NO. 66-22-00-01-0-010-017

CONTRACT
CONTRACT H
HEATING VENTILATION AND AIR
CONDITIONING

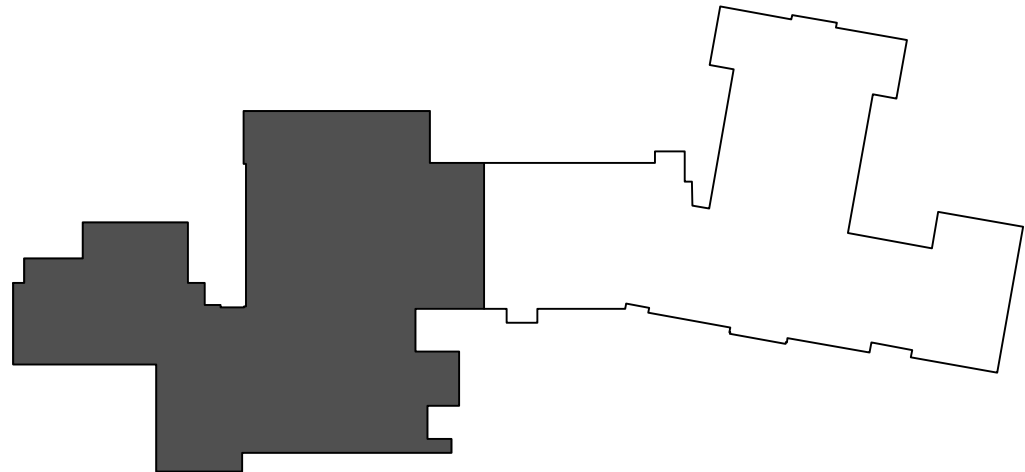
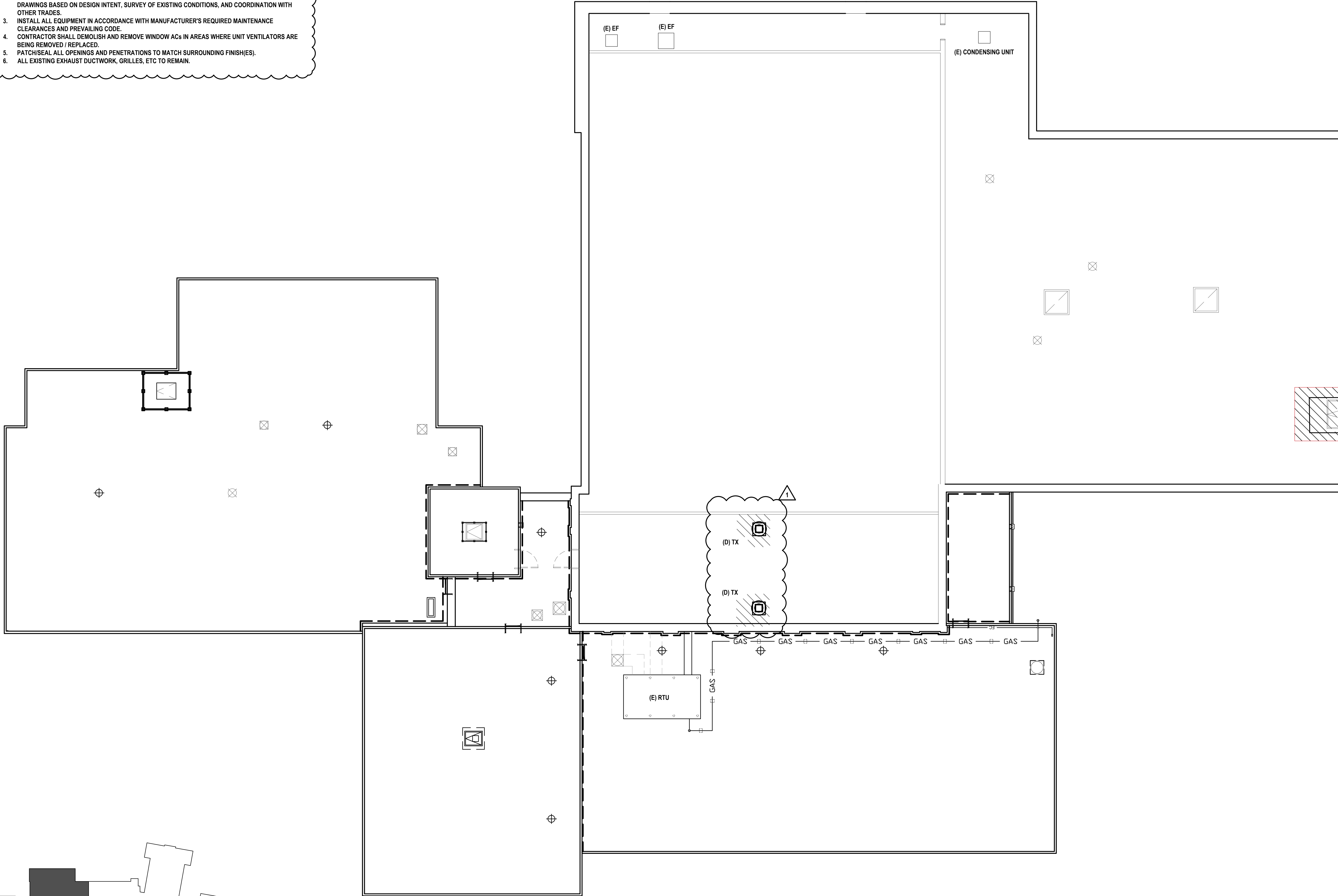
STATUS
FINAL BID DOCUMENT

SHEET TITLE
MECHANICAL SECOND FLOOR
PLAN PART B

DRAWING No.
MD121.00

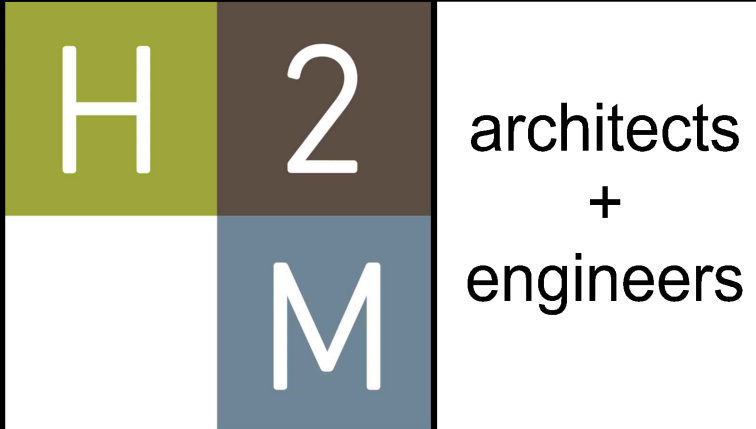
X:\PSD\White Plains Central School District - 10811\PSD 2205 - AC & Ventilation at Mamaroneck Elem School\02-BIM\CADD\Construction\MD 140.00 Mechanical Roof Plan Part A.dwg Last Modified: Nov 01, 2023 - 2:24pm Plotted on: Nov 01, 2023 - 3:24pm By: Mazarand

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Key Plan

Roof Plan Part A
SCALE: 1/8"=1'-0"



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CONSULTANTS:

MARK	DATE	DESCRIPTION
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1	11-01-23	ADDENDUM #1

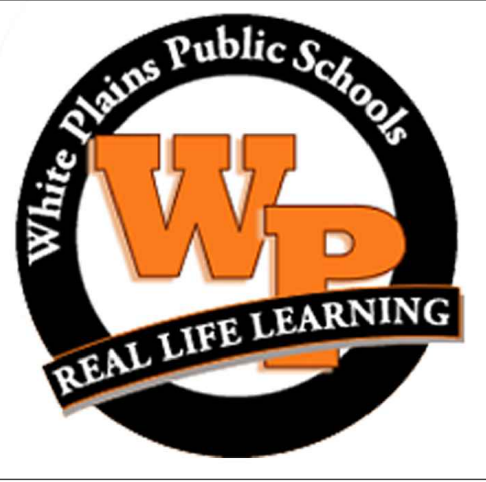


DESIGNED BY:	DRAWN BY:	CHECKED BY:	REVIEWED BY:
MJV	KCM	MJV	QAQC
PROJECT No:	DATE:	SCALE:	
WPSD 2205	OCTOBER 2023		

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White Plains City School District

**AC and Ventilation Upgrades
at Mamaroneck
Elementary School**



**7 Nosband Ave.
White Plains, NY 10605**

**SED PROJECT CONTROL
NO. 66-22-00-01-0-010-017**

CONTRACT

**CONTRACT H
HEATING VENTILATION AND AIR
CONDITIONING**

STATUS

FINAL BID DOCUMENT

SHEET TITLE

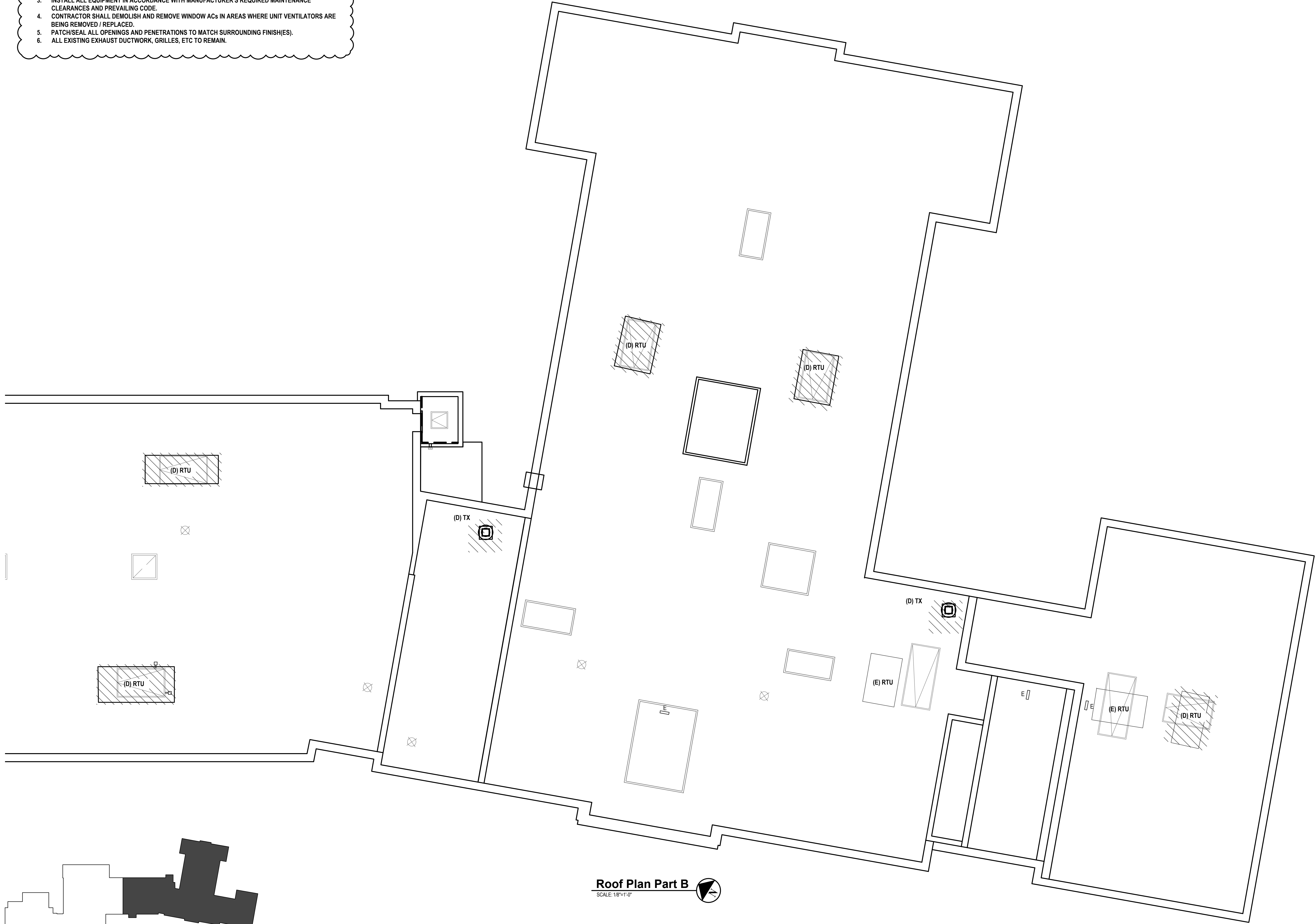
**MECHANICAL ROOF PLAN
PART A**

DRAWING No.

MD140.00

X:\PSD\White Plains Central School District - 1081\WPSD 2205 - AC & Ventilation at Mamaroneck Elem School\02-BIM\CADD\Construction\MD141.00 Mechanical Roof Plan Part B.dwg Last Modified: Nov 01, 2023 - 3:24pm Printed on: Nov 01, 2023 - 3:24pm By: Mdsawad

- GENERAL NOTES:
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Roof Plan Part B
SCALE: 1/8"=1'-0"



H2M

architects
+
engineers

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CONSULTANTS:		

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	10-16-23	FINAL BID DOCUMENT
1	11-01-23	ADDENDUM #1



DESIGNED BY:	DRAWN BY:	CHECKED BY:	REVIEWED BY:
MJV	KCM	MJV	QAQC
PROJECT NO:	DATE:	SCALE:	
WPSD 2205	OCTOBER 2023		

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AC and Ventilation Upgrades
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NO. 66-22-00-01-0-010-017

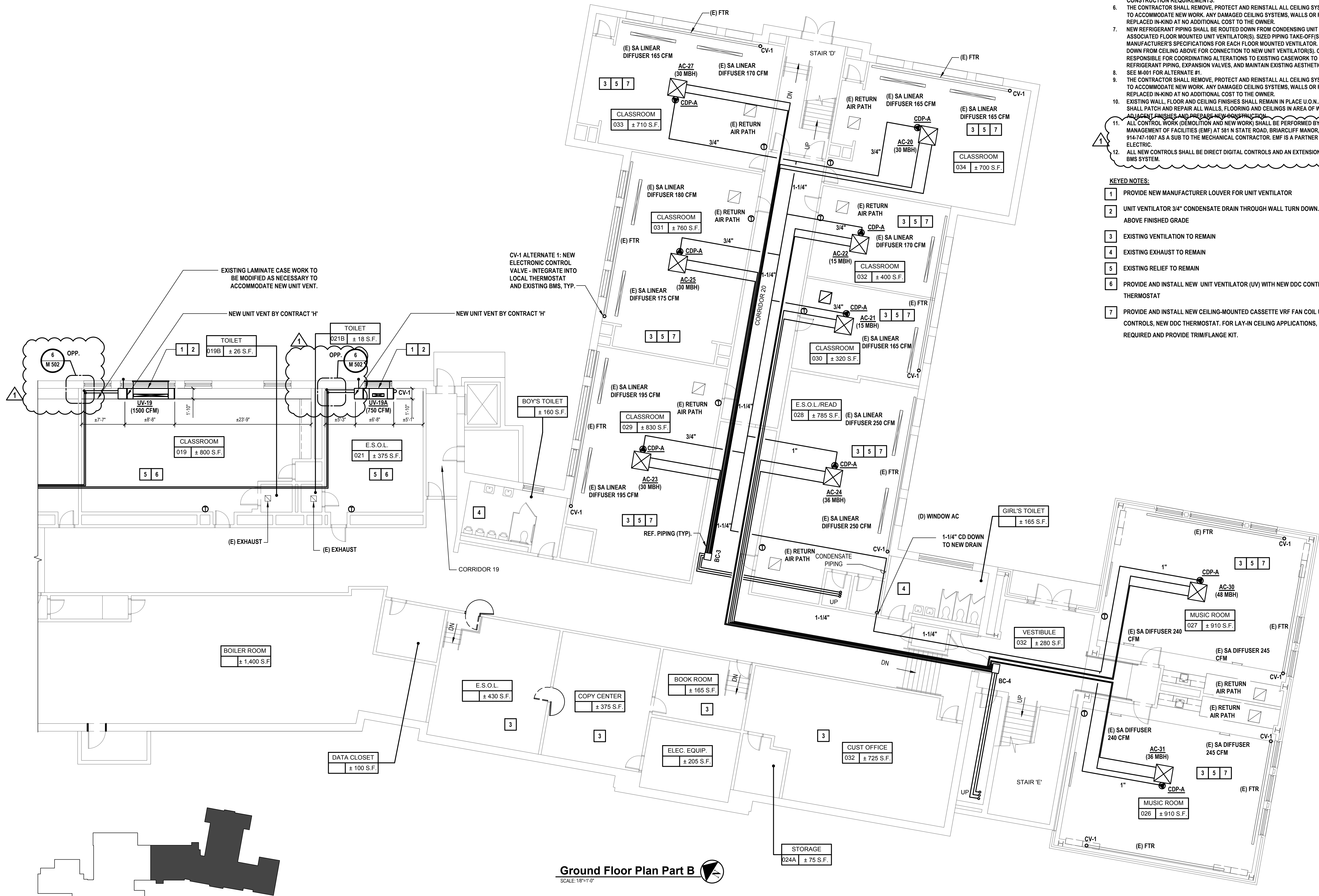
CONTRACT	CONTRACT H HEATING VENTILATION AND AIR CONDITIONING
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STATUS	FINAL BID DOCUMENT
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SHEET TITLE	MECHANICAL ROOF PLAN PART B
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DRAWING No.	MD141.00
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X:\WP50\White Plains Central School District - 1081\WP50 2205 - AC & Ventilation at Mamaroneck Elem School\02-BIM-CADD\Conc\dwg\101-00 Mechanical Ground Floor Plan Part B.dwg, Last Modified: Nov 10, 2023, 3:42pm By KMcDonald



Ground Floor Plan Part B

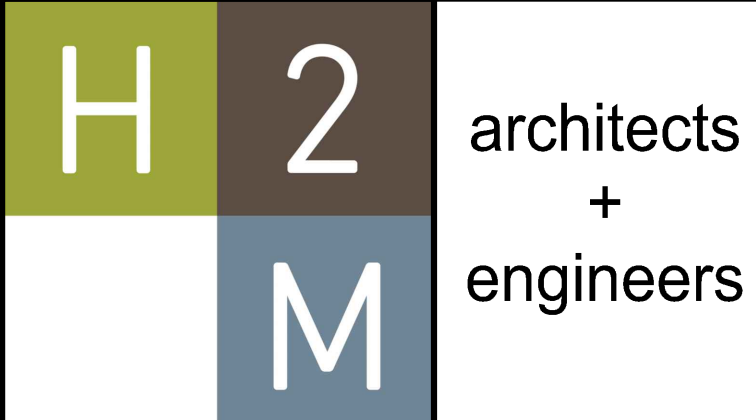
SCALE: 1/8"=1'-0"

GENERAL NOTES:

- REFRIGERANT PIPING IS SCHEMATIC FINAL PIPE LAYOUT AND SIZING TO BE PROVIDED AND VERIFIED THROUGH MANUFACTURER SOFTWARE AND SUBMITTED FOR ENGINEER APPROVAL. RETURN AIR PATHS ARE EXISTING TO REMAIN.
- ALL CONDENSATE PIPES TO BE PITCHED 1/8" PER FOOT. DRAIN INDIRECTLY IN LOCATIONS SHOWN.
- COORDINATE WITH STRUCTURE AND EXISTING DUCTWORK, OFFSET AS REQUIRED.
- ALL DUCT SIZES ARE CLEAR INSIDE DIMENSIONS. REFER TO SPECIFICATIONS FOR ALL DUCT CONSTRUCTION REQUIREMENTS.
- THE CONTRACTOR SHALL REMOVE, PROTECT AND REINSTALL ALL CEILING SYSTEMS AS REQUIRED TO ACCOMMODATE NEW WORK. ANY DAMAGED CEILING SYSTEMS, WALLS OR FLOORS SHALL BE REPLACED IN-KIND AT NO ADDITIONAL COST TO THE OWNER.
- NEW REFRIGERANT PIPING SHALL BE ROUTED DOWN FROM CONDENSING UNIT ON ROOFTOP TO THE ASSOCIATED FLOOR MOUNTED UNIT VENTILATOR(S). SIZED PIPING TAKE-OFF(S) AS PER MANUFACTURER'S SPECIFICATIONS FOR EACH FLOOR MOUNTED UNIT VENTILATOR(S). CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALTERATIONS TO EXISTING CASEWORK TO PROPERLY HIDE REFRIGERANT PIPING, EXPANSION VALVES, AND MAINTAIN EXISTING AESTHETIC.
- SEE M-001 FOR ALTERNATE #1.
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- ALL CONTROL WORK (DEMOLITION AND NEW WORK) SHALL BE PERFORMED BY ENERGY MANAGEMENT OF FACILITIES (EMF) AT 581 N STATE ROAD, BRIARCLIFF MANOR, NY 10510 - PHONE 914-747-1007 AS A SUB TO THE MECHANICAL CONTRACTOR. EMF IS A PARTNER OF SCHNEIDER ELECTRIC.
- ALL NEW CONTROLS SHALL BE DIRECT DIGITAL CONTROLS AND AN EXTENSION OF EMP'S EXISTING BMS SYSTEM.

KEYED NOTES:

- PROVIDE NEW MANUFACTURER LOUVER FOR UNIT VENTILATOR
- UNIT VENTILATOR 3/4" CONDENSATE DRAIN THROUGH WALL TURN DOWN. TERMINATE +/- 24" ABOVE FINISHED GRADE
- EXISTING VENTILATION TO REMAIN
- EXISTING EXHAUST TO REMAIN
- EXISTING RELIEF TO REMAIN
- PROVIDE AND INSTALL NEW UNIT VENTILATOR (UV) WITH NEW DDC CONTROLS, NEW DDC THERMOSTAT
- PROVIDE AND INSTALL NEW CEILING-MOUNTED CASSETTE VRF FAN COIL UNIT (AC) WITH NEW DDC CONTROLS, NEW DDC THERMOSTAT. FOR LAY-IN CEILING APPLICATIONS, MODIFY CEILING AS REQUIRED AND PROVIDE TRIM/FLANGE KIT.



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CONSULTANTS:

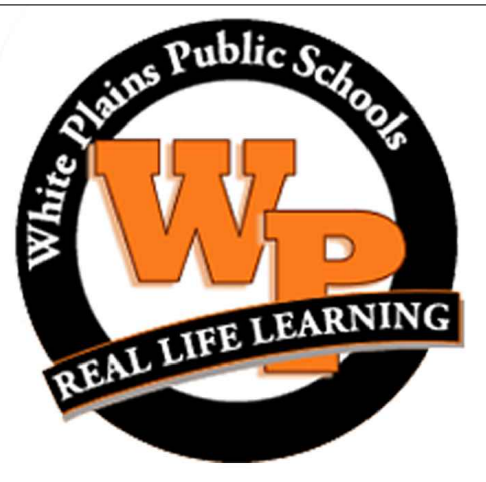
MARK	DATE	DESCRIPTION
	10-16-23	FINAL BID DOCUMENT
1	11-01-23	ADDENDUM #1



DESIGNED BY: MJV	DRAWN BY: KCM	CHECKED BY: MJV	REVIEWED BY: QAQC
PROJECT NO: WP50 2205	DATE: OCTOBER 2023	SCALE:	

White Plains City School District

AC and Ventilation Upgrades
at Mamaroneck
Elementary School



7 Nosband Ave.
White Plains, NY 10605

SED PROJECT CONTROL
NO. 66-22-00-01-0-010-017

CONTRACT H
HEATING VENTILATION AND AIR
CONDITIONING

FINAL BID DOCUMENT

MECHANICAL GROUND FLOOR
PLAN PART B

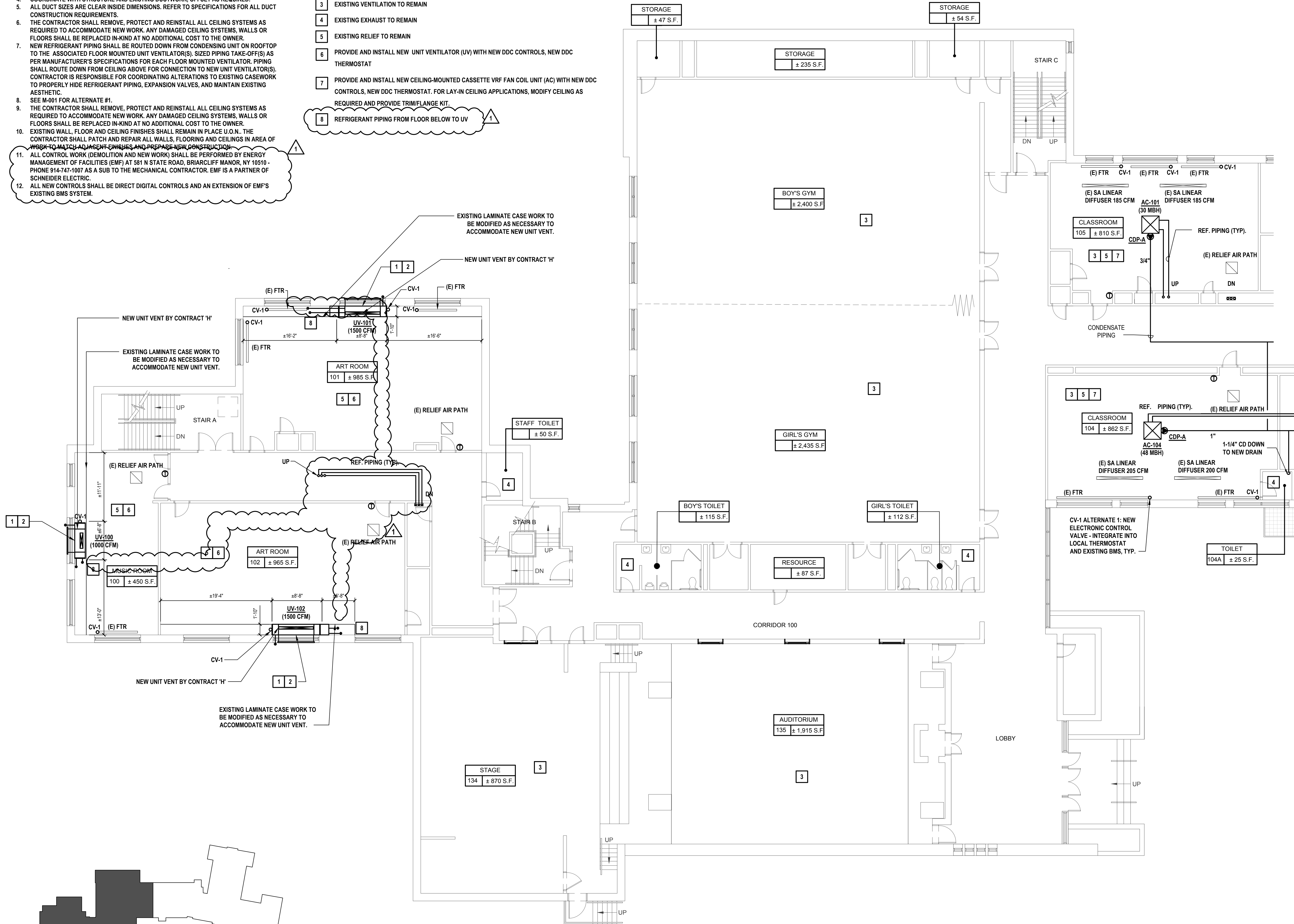
M101.00

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KEYED NOTES:

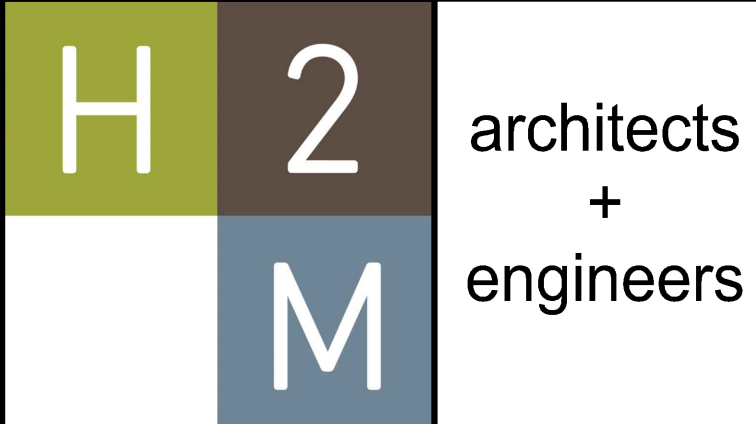
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- 3 EXISTING VENTILATION TO REMAIN
- 4 EXISTING EXHAUST TO REMAIN
- 5 EXISTING RELIEF TO REMAIN
- 6 PROVIDE AND INSTALL NEW UNIT VENTILATOR (UV) WITH NEW DDC CONTROLS, NEW DDC THERMOSTAT
- 7 PROVIDE AND INSTALL NEW CEILING-MOUNTED CASSETTE VRF FAN COIL UNIT (AC) WITH NEW DDC CONTROLS, NEW DDC THERMOSTAT. FOR LAY-IN CEILING APPLICATIONS, MODIFY CEILING AS REQUIRED AND PROVIDE TRIM/FLANGE KIT.
- 8 REFRIGERANT PIPING FROM FLOOR BELOW TO UV



Key Plan

First Floor Plan Part A

SCALE: 1/8"=1'-0"



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CONSULTANTS:

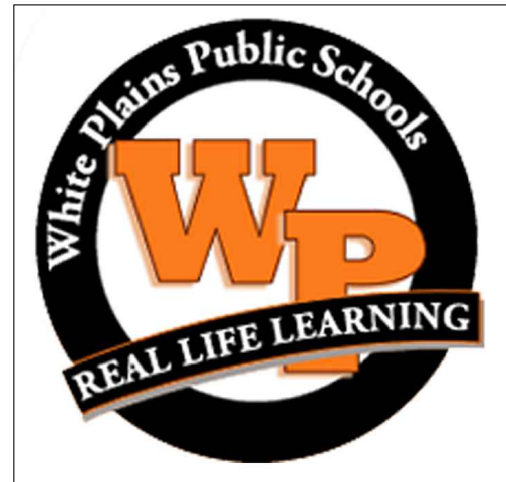
MARK	DATE	DESCRIPTION
	10-16-23	FINAL BID DOCUMENT
1	11-01-23	ADDENDUM #1



DESIGNED BY:	DRAWN BY:	CHECKED BY:	REVIEWED BY:
MJV	KCM	MJV	QAQC
PROJECT NO:	DATE:	SCALE:	
WPSPD 2205	OCTOBER 2023		

CLIENT
White Plains City School District

**AC and Ventilation Upgrades
at Mamaroneck
Elementary School**



7 Nosband Ave.
White Plains, NY 10605

SED PROJECT CONTROL
NO. 66-22-00-01-0-010-017

CONTRACT
**CONTRACT H
HEATING VENTILATION AND AIR
CONDITIONING**

STATUS
FINAL BID DOCUMENT

SHEET TITLE
**MECHANICAL FIRST FLOOR
PLAN PART A**

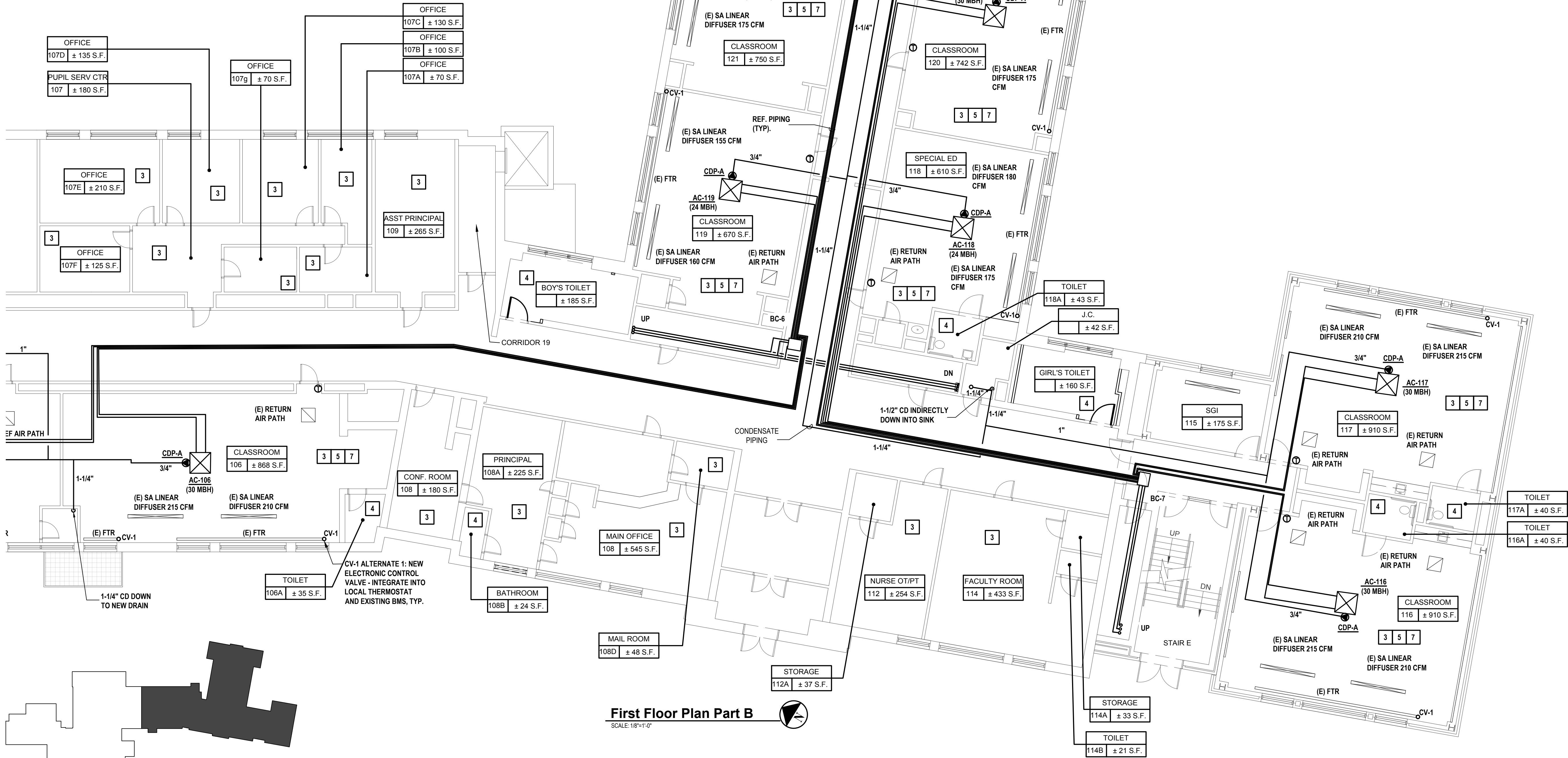
DRAWING No.
M110.00

GENERAL NOTES:

- REFRIGERANT PIPING IS SCHEMATIC FINAL PIPE LAYOUT AND SIZING TO BE PROVIDED AND VERIFIED THROUGH MANUFACTURER SOFTWARE AND SUBMITTED FOR ENGINEER APPROVAL.
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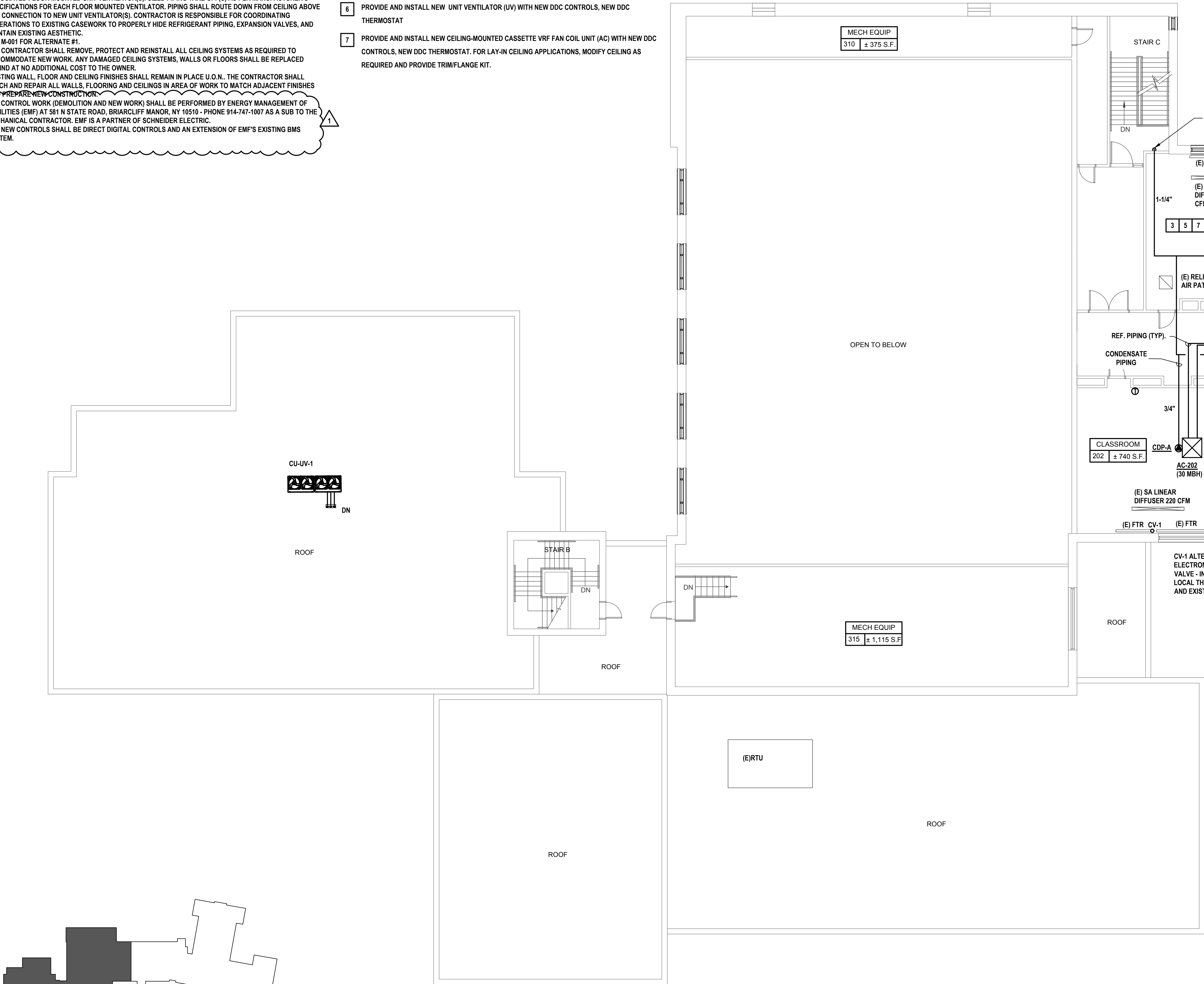
X:\WPSP\White Plains Central School District - 10851\WPSP 2205 - AC & Ventilation at Mamaroneck Elem School\02-BIM\CADD\Construction\120.00 Mechanical Second Floor Plan Part A.dwg Last Modified: Nov 01, 2023 - 3:34pm By KMcDonald

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Second Floor Plan Part A

SCALE: 1/8"=1'-0"



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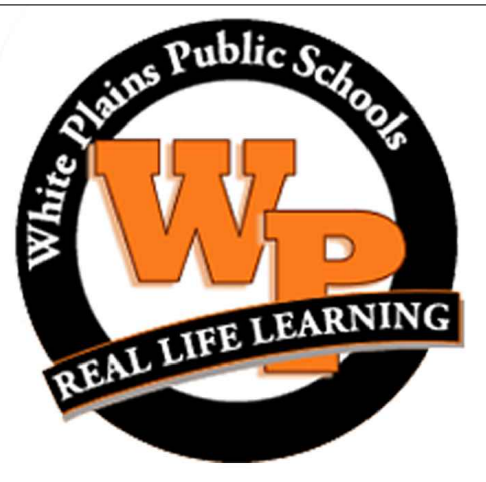
MARK	DATE	DESCRIPTION
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DESIGNED BY:	DRAWN BY:	CHECKED BY:	REVIEWED BY:
MJV	KCM	MJV	QAQC
PROJECT No:	DATE:	SCALE:	
WPSPD 2205	OCTOBER 2023		

White Plains City
School District

AC and Ventilation Upgrades
at Mamaroneck
Elementary School



7 Nosband Ave.
White Plains, NY 10605

SED PROJECT CONTROL
NO. 66-22-00-01-0-010-017

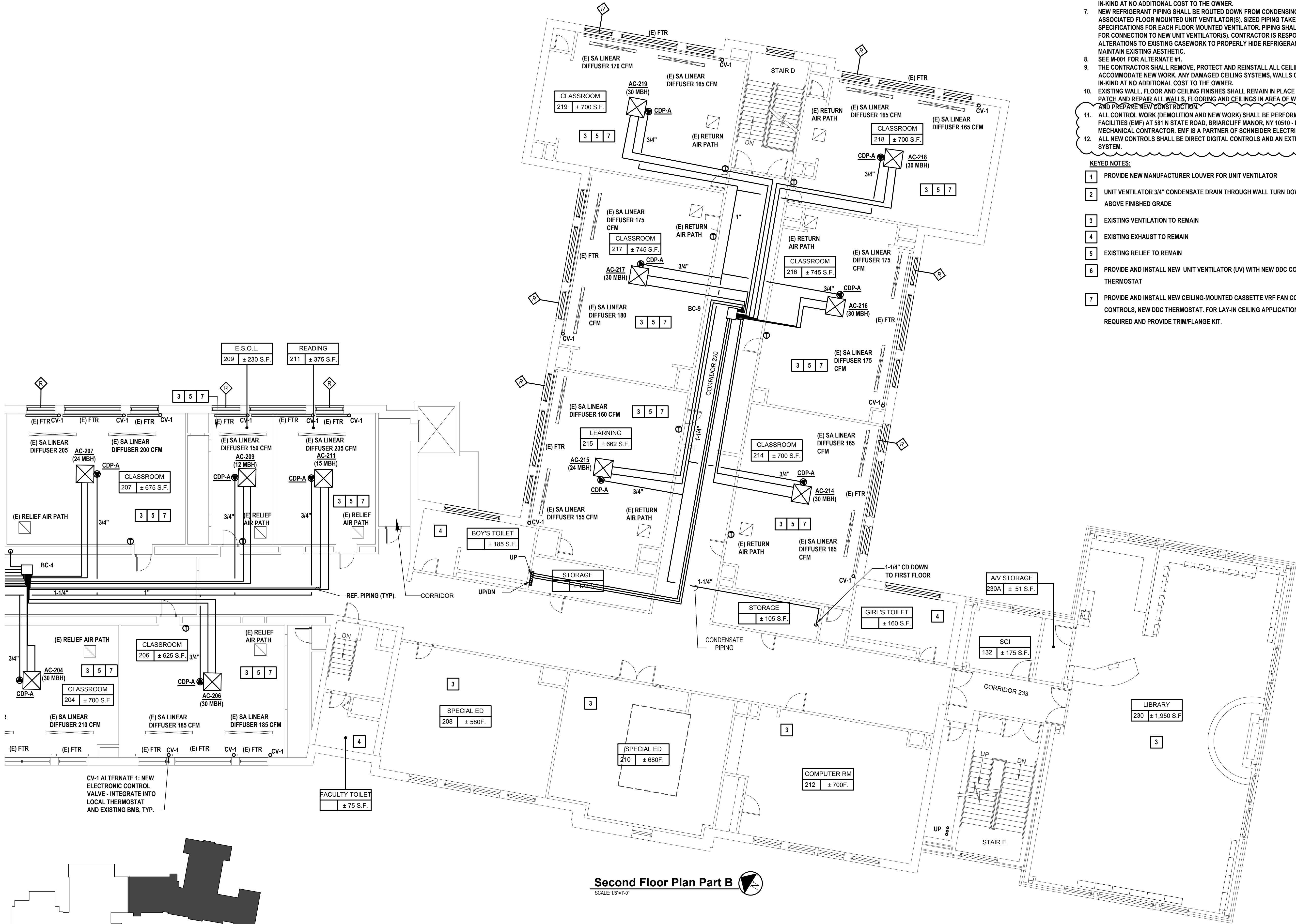
CONTRACT H
HEATING VENTILATION AND AIR
CONDITIONING

FINAL BID DOCUMENT

MECHANICAL SECOND FLOOR
PART A

M120.00

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Second Floor Plan Part B

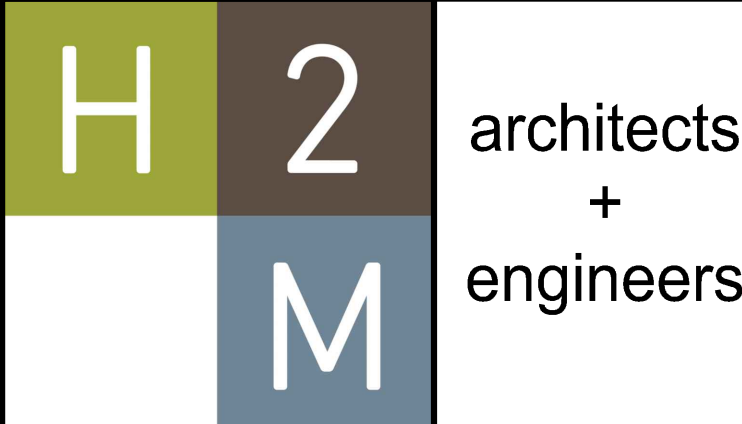
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1	11-01-23	ADDENDUM #1



DESIGNED BY:	DRAWN BY:	CHECKED BY:	REVIEWED BY:
MJV	KCM	MJV	QAQC
PROJECT NO:	DATE:	SCALE:	
WPSP 2205	OCTOBER 2023		

White Plains City School District

AC and Ventilation Upgrades
at Mamaroneck
Elementary School



7 Nosband Ave.
White Plains, NY 10605

SED PROJECT CONTROL
NO. 66-22-00-01-0-010-017

CONTRACT H
HEATING VENTILATION AND AIR
CONDITIONING

STATUS
FINAL BID DOCUMENT

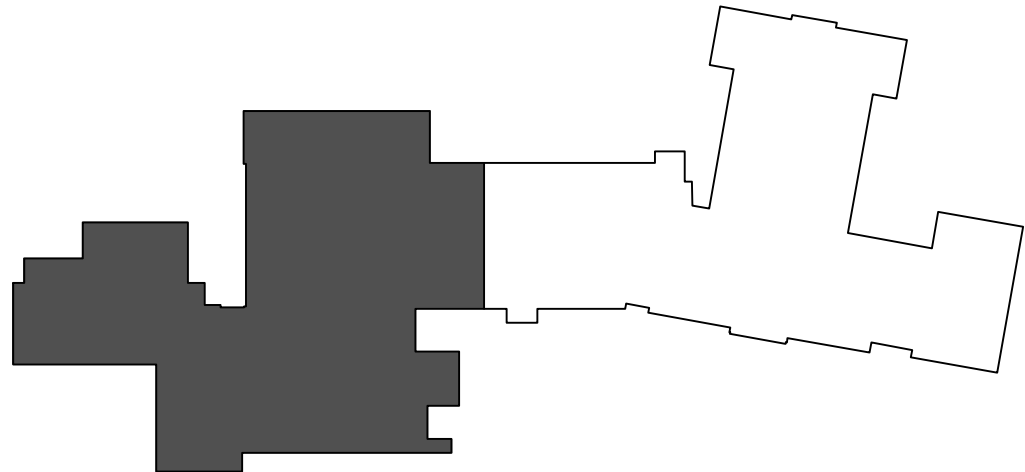
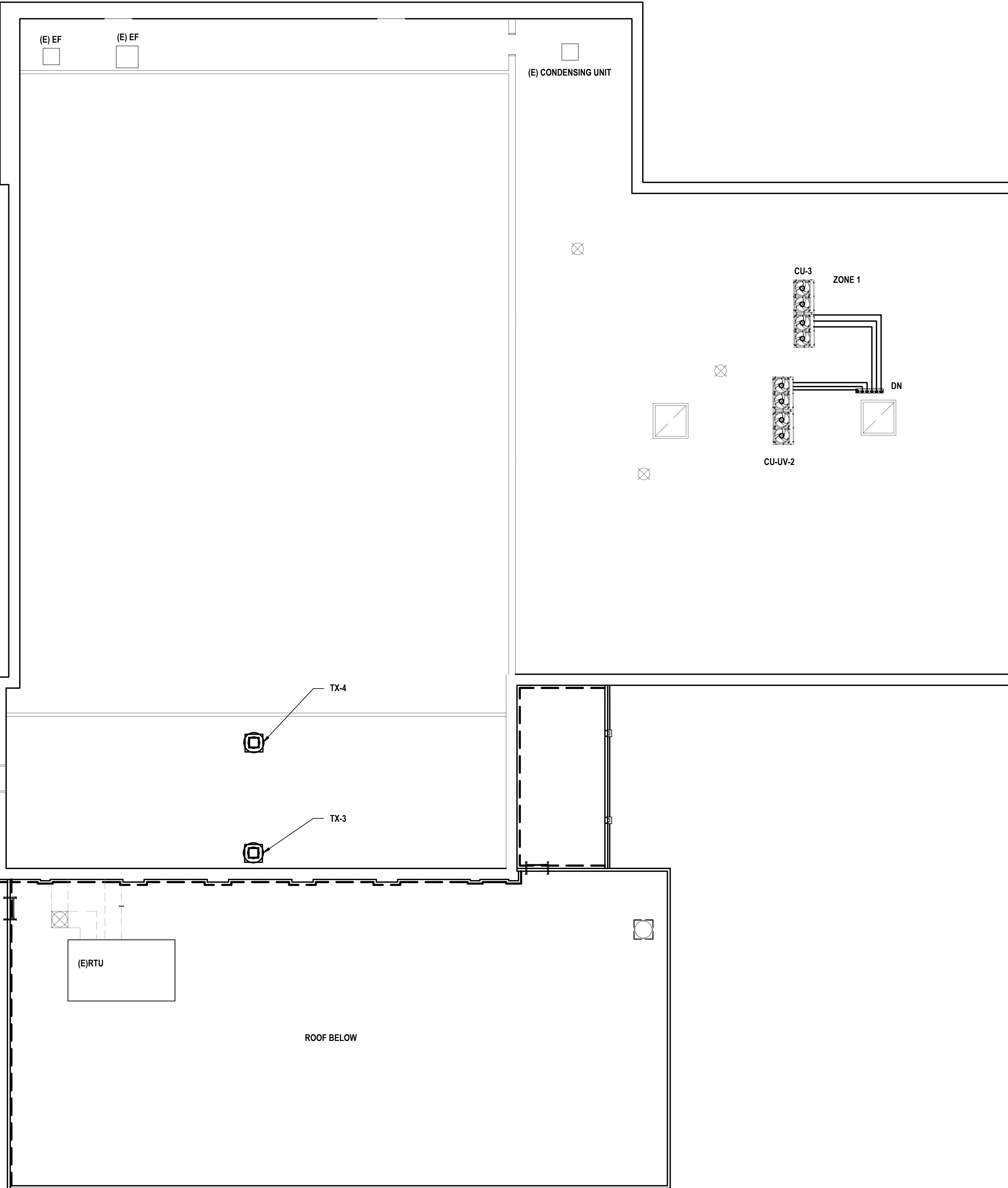
SHEET TITLE
MECHANICAL SECOND FLOOR
PLAN PART B

DRAWING No.
M121.00

GENERAL NOTES:

- ALL DUCT SIZES ARE CLEAR INSIDE DIMENSIONS. REFER TO SPECIFICATIONS FOR ALL DUCT CONSTRUCTION REQUIREMENTS.
- ALL SUPPLY, RETURN AND EXHAUST BRANCH DUCTWORK SHALL BE PROVIDED WITH VOLUME DAMPERS.
- COORDINATE WITH STRUCTURE AND EXISTING DUCTWORK. OFFSET AS REQUIRED.
- PROVIDE NEW THERMOSTAT LINKED TO RTUS IN ASSOCIATED SPACE.
- DOAS UNITS SHALL BE PROVIDED WITH DISCHARGE AIR TEMP SENSORS.
- ALL CONDENSATE PIPES TO BE PITCHED 1/8" PER FOOT. DRAIN INDIRECTLY TO ROOF DRAINS.
- CONTRACTOR TO PROVIDE SEISMIC/WIND RATED ROOF CURB MANUFACTURED THYBAR OR APPROVED EQUAL.
- CONTRACTOR TO PROVIDE PROJECT SPECIFIC ROOF CURB DESIGNED IN ACCORDANCE WITH WIND LOADS PROVIDED ON DRAWINGS, SIGNED AND SEAL BY A LICENSED PROFESSIONAL ENGINEER REPRESENTING THE ROOF CURB MANUFACTURER.
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WIND LOADS (MC 301.15 & BC 1609)		
ZONE ID	POSITIVE WIND PRESSURE (PSF)	NEGATIVE WIND PRESSURE (PSF)
ROOF (INT. ZONE)	13.0	-57.0
ROOF (END ZONE)	13.0	-67.3
ROOF (CORNER ZONE)	13.0	-91.8
WALLS (INT. ZONE)	32.0	-34.7
WALLS (END ZONE)	32.0	-42.9



Key Plan



Roof Plan Part A

SCALE: 1/8"=1'-0"



H2M

architects
+
engineers

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CONSULTANTS:

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MJV	KCM	MJV	QAQC
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WPSD 2205	OCTOBER 2023		

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CONTRACT

CONTRACT H
HEATING VENTILATION AND AIR
CONDITIONING

STATUS

FINAL BID DOCUMENT

SHEET TITLE

MECHANICAL ROOF PLAN
PART A

DRAWING No.

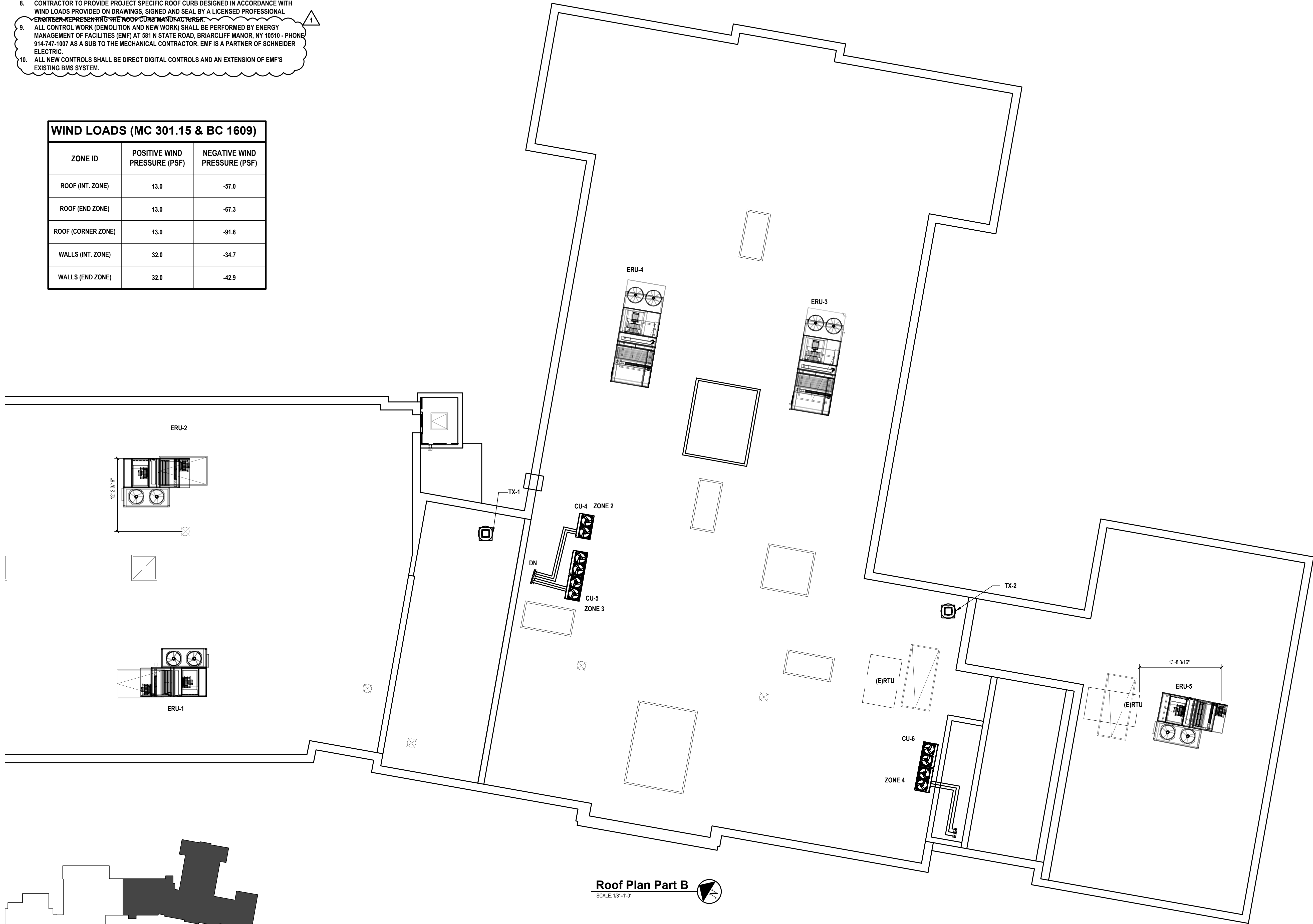
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GENERAL NOTES:

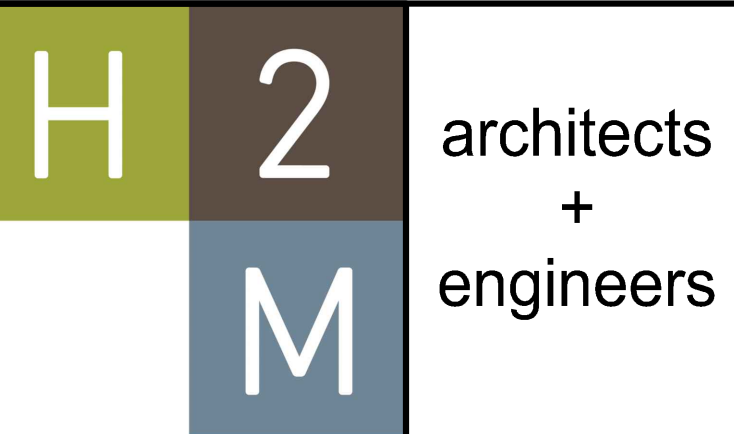
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White Plains, NY 10605

SED PROJECT CONTROL
NO. 66-22-00-01-0-010-017

CONTRACT

CONTRACT H
HEATING VENTILATION AND AIR
CONDITIONING

STATUS

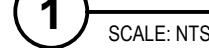
FINAL BID DOCUMENT

SHEET TITLE

MECHANICAL ROOF PLAN
PART B

DRAWING No.

M141.00



1. PIPE SUPPORTS SHALL BE INSTALLED A MINIMUM OF 6'-0" O.C. & AT EACH CHANGE OF DIRECTION OF PIPING.
2. PROVIDE PIPE SUPPORTS IN SERIES (WIDTHS) AS REQUIRED TO SUPPORT ALL NEW PIPING.
3. HEIGHT OF PIPE SUPPORT TO VARY AS REQUIRED BASED ON HEIGHT OF EXISTING PIPING & ROOF PITCH.



KEYED CONSTRUCTION NOTES:

- | | |
|---|--|
| 1 | PROVIDE AND INSTALL NEW VERTICAL FLOOR-MOUNTED UNIT VENTILATOR (UV) WITH NEW DDC CONTROLS, NEW DDC THERMOSTAT, LOWER, AND WALL SLEEVE. RECONNECT WITH NEW PIPING (SEE UNIT VENTILATOR PIPING DETAIL) INCLUDING NEW DDC CONTROL VALVE, ETC. RECONNECT ANY FIN-TUBE RADIATION (FT) PIPING BRANCHES OR CONTROL INTERLOCKS (FT CONTROL VALVE AND SHARED UV THERMOSTAT). SEE DETAIL 3 AND 4 ON THIS SHEET FOR ADDITIONAL INFORMATION. |
| 2 | PROVIDE AND INSTALL NEW MANUFACTURER SPECIFIED LOW VOLTAGE THERMOSTAT/CONTROLLER. |

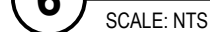


1. ARRANGE PIPING TO ALLOW FOR FIN TUBE RADIATOR REMOVAL.
2. USE THIS DETAIL WHEN COIL FIN TUBE RADIATOR IS NOT AN ISSUE.

5 **Cont**
SCALE: NTS

SCALE: NTS

(Detail #)



1. ALL DEMOLITION WORK SHALL BE IN COMPLIANCE WITH ALL FEDERAL AND NEW YORK STATE APPLICABLE BUILDING AND LIFE AND SAFETY REGULATIONS.
2. THE CONTRACTOR SHALL PROTECT ALL PORTIONS OF THE EXISTING BUILDING WHERE NEW WORK IS TO BE COMPLETED FROM DUST, WEATHER INCLEMENCY AND FREEZING. PROVIDE DUST FREE BARRIER PARTITIONS DURING DEMOLITION TO PREVENT DEBRIS FROM ENTERING NON-WORK AREAS. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING STRUCTURE OR BUILDING CONTENTS.
3. THE CONTRACTOR ACCESS SHALL BE AS CALLED OUT ON SHEET G0.0. THE CONTRACTOR SHALL ADEQUATELY PROTECT ALL EXISTING FINISHES AND MATERIALS ALONG THE ACCESS ROUTE AND ADJOINING SURFACES OUTSIDE THE CONTROL AREA OF SCOPE OF WORK FROM DAMAGE DURING THE PROJECT DURATION. THE CONTRACTOR SHALL BE RESPONSIBLE TO RESTORE EXISTING CONDITIONS AND/OR FINISHES DAMAGED DURING CONSTRUCTION INCLUDING PATCHING AND PAINTING AS REQUIRED AND DEEMED NECESSARY BY THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.
4. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL CONSTRUCTION DEBRIS AND UNWANTED MATERIAL OFF SITE IN ACCORDANCE WITH ALL FEDERAL AND NEW YORK STATE APPLICABLE BUILDING AND LIFE AND SAFETY REGULATIONS.
5. THE CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE ADJOINING SURFACES AND FINISHES DURING DEMOLITION. THE CONTRACTOR SHALL PATCH AND REPAIR ALL ADJACENT SURFACES DAMAGED DURING DEMOLITION. CONTRACTOR SHALL MATCH ALL ADJACENT FINISHES.
6. OVER-DEMOLITION SHALL BE ALLOWED PROVIDED THAT ALL SURFACES SHALL BE REBUILT TO MATCH MATERIALS, STRUCTURAL INTEGRITY AND APPEARANCE OF THOSE WHICH WERE REMOVED AND IN CONFORMANCE WITH CONTRACT DOCUMENTS AND AT NO ADDITIONAL COST TO THE OWNER.
7. REMOVE ALL ITEMS THAT WILL BE ABANDONED AS A RESULT OF THE WORK BEING PERFORMED.
8. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND QUANTITIES OF ALL ITEMS PRIOR TO BID.
9. COORDINATE THE WORK OF THE DEMOLITION DRAWING WITH ALL CONSTRUCTION DRAWINGS AND DOCUMENTS.
10. THIS DRAWING IS A GENERAL LIST OF DEMOLITION ITEMS AND IS NOT EVERY ITEM REQUIRED FOR DEMOLITION. CONTRACTOR SHALL PROVIDE ALL DEMOLITION REQUIRED TO PERFORM ALL WORK INDICATED WITHIN THE PROJECT DRAWINGS AND SPECIFICATIONS AND TO PREPARE ALL AREAS FOR THE CONSTRUCTION WORK.

1	EXISTING WALL FINISHES SHALL REMAIN IN PLACE U.N.O.. THE CONTRACTOR SHALL PATCH AND REPAIR ALL WALLS, FLOORING AND CEILINGS IN AREA OF WORK TO MATCH ADJACENT FINISHES AND PREPARE NEW CONSTRUCTION.
2	EXISTING FLOORING SHALL REMAIN IN PLACE U.N.O.. EXISTING WALL BASE SHALL BE REMOVED AND LEGALLY DISPOSED OF. PATCH AND PREPARE EXISTING SURFACES FOR NEW CONSTRUCTION AND FINISHES.
3	THE CONTRACTOR SHALL PROVIDE AND INSTALL 3/8" 1/2" IMPACT RESISTANT GYPSUM WALL BOARD ON 3-5/8" GALVANIZED METAL STUD FRAMING @ 16" O.C. TO UNDERSIDE OF DECK TO FINISHED FLOOR PER PARTITION TYPE 1 ON THIS SHEET. THE CONTRACTOR SHALL ALIGN AND PREPARE NEW AND EXISTING WALL TO PLUMB AS REQUIRED FOR COMPLETE AND PROPER INSTALLATION OF NEW TILE AND FINISHES.
NOTES:	
- CONTRACTOR SHALL COORDINATE WITH 'E' DRAWINGS REGARDING INSTALLATION OF NEW ITEMS THROUGHOUT SPACE.	
- CONTRACTOR SHALL PATCH AND PREPARE EXISTING AND NEW SLAB/FLOORING, WALL AND CEILING OPENINGS.	
- SEE THIS SHEET FOR DETAILS	

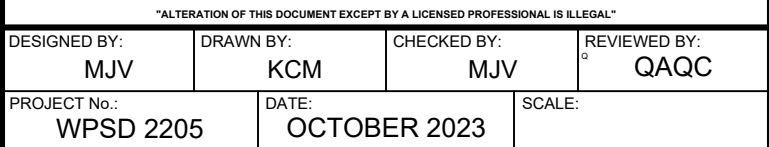


H2M Ref #MI-131

WALL TYPE	OVERALL DIMENSIONS	STUD SIZE	FIRE RATING	UL No.	STC RATING	COMMENTS
1	4 1/4"	3 5/8"	-	-	-	GYPSUM BOARD ON ONE SIDE. FLOOR TO CEILING

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CONSULTANTS:

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AC and Ventilation Upgrades at Mamaroneck Elementary School



**SED PROJECT CONTROL
NO. 66-22-00-01-0-010-017**

CONTRACT

CONTRACT H

**HEATING VENTILATION AND AIR
CONDITIONING**

STATUS

FINAL BID DOCUMENT

SHEET TITLE

HVAC DETAILS (3 of 3)

DRAWING No.

M502.00

UNIT VENTILATORS - STEAM HEAT

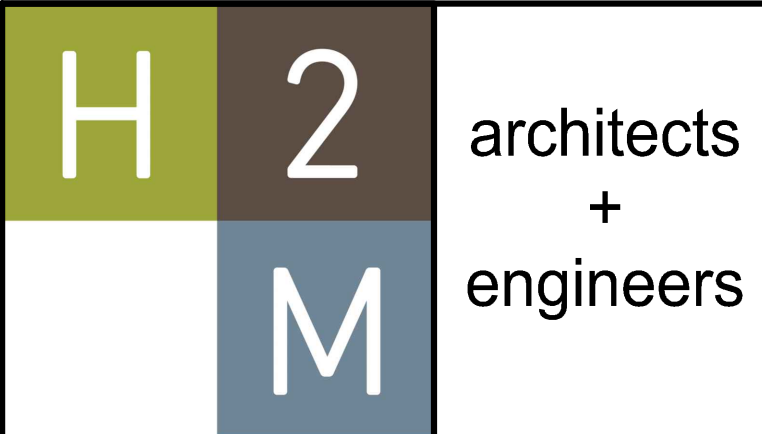
EQUIPMENT NO.	QUANTITY	PERFORMANCE/ CONSTRUCTION REQUIREMENTS											BASIS OF DESIGN INFORMATION							MECHANICAL NOTES	ELECTRICAL NOTES	
		SUPPLY FAN		OUTSIDE AIRFLOW (CFM)	COOLING COIL				HEATING COIL			MNF	MODEL NO.	NOMINAL DIMENSIONS L" x W" x H" (EXCLUDING LEV KIT)	NOMINAL OPERATING WEIGHT (LBS.)	ELECTRICAL DATA						
		AIRFLOW (CFM)	HP		REFRIGERANT TYPE	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	AIR DATA		TOTAL CAPACITY (MBH)	AIR DATA					STEAM COIL DATA						
								ENT. DB/WB (°F)	LVG. DB/WB (°F)		ENT. DB (°F)						LVG. DB (°F)	PRESSURE (PSIG)				
UV-15B	1	999	1 / 3	221	R-410A	33.2	24.9	80 / 67	57.1 / 56.3	58.5	51	105	3.0	DAIKIN	UAVS9H10	74"x16.63"x30.13"	425	115 / 1	6.3	15	1-18	6.7,10,12,14
UV-17	1	1474	1 / 3	401	R-410A	53.7	40.3	80 / 67	54.8 / 54.8	85.5	51	104.4	3.0	DAIKIN	UAVS9H15	98"x16.63"x30.13"	570	115 / 1	6.3	15	1-18	6.7,10,12,14
UV-19	1	1474	1 / 3	441	R-410A	53.7	40.3	80 / 67	54.8 / 54.8	85.5	51	104.4	3.0	DAIKIN	UAVS9H15	98"x16.63"x30.13"	570	115 / 1	6.3	15	1-18	6.7,10,12,14
UV-21	1	999	1 / 3	205	R-410A	33.2	24.9	80 / 67	57.1 / 56.3	58.5	51	105	3.0	DAIKIN	UAVS9H10	74"x16.63"x30.13"	425	115 / 1	6.3	15	1-18	6.7,10,12,14
<div><div>MECHANICAL NOTES:</div><div><div>1. PROVIDE PNEUMATIC CONTROLS TO TIE INTO EXISTING GALVANIZED DRAIN PAN</div><div>3. COLD WEATHER DAMPER ASSEMBLY</div><div>4. REAR OUTSIDE AIR, BOTTOM RETURN AIR</div><div>5. HIGH EFFICIENCY ECM MOTOR</div><div>6. STEAM 2 WAY MODULATING VALVE/ACTUATOR</div><div>7. 2" MERV 13 FILTER</div><div>8. TOP DISCHARGE BAR STOCK STEEL GRILLE</div></div><div><div>9. FALSE BACK</div><div>10. SINGLE ROW STEAM COIL</div><div>11. PROVIDE WITH FREEZE STAT</div><div>12. CONTRACTOR RESPONSIBILITY TO CONFIRM QUANTITIES</div><div>13. PROVIDE NEW WALL MOUNTED PNEUMATIC THERMOSTAT</div><div>14. PROVIDE ECONOMIZER</div><div>15. REUSE EXISTING PNEUMATIC LINES</div><div>16. PROVIDE SUBBASE, MATCH HEIGHT OF EXISTING CASEWORK.</div><div>17. OUTSIDE AIR VALUES IN THIS SCHEDULE ARE MAXIMUM VALUES.</div><div>18. BALANCER TO BALANCE UNIT VENTILATOR OUTSIDE AIR TO</div></div><div><div>ELECTRICAL NOTES:</div><div><div>1. INTEGRAL DISCONNECT SWITCH (FIELD WIRED)</div><div>2. INTEGRAL DISCONNECT SWITCH (FACTORY WIRED)</div><div>3. INTEGRAL UNPOWERED RECEPTACLES (FIELD WIRED)</div><div>4. INTEGRAL POWERED RECEPTACLES (FACTORY WIRED)</div><div>5. INTEGRAL CONDENSATE PUMP (UNPOWERED)</div><div>6. INTEGRAL CONDENSATE PUMP (POWERED)</div><div>7. LOW VOLTAGE CONTROLS</div></div><div><div>8. LINE VOLTAGE CONTROLS</div><div>9. INTEGRAL STARTERS</div><div>10. MOTORIZED DAMPERS (24VAC)</div><div>11. MOTORIZED DAMPERS (120VAC)</div><div>12. SINGLE POINT POWER FEED</div><div>13. INDOOR UNIT POWERED FROM OUTDOOR UNIT</div><div>14. ELECTRICAL CONTRACTOR TO PROVIDE DISCONNECT SWITCH ON SAME POWER FEED AS ASSOCIATED INDOOR UNIT</div><div>15.</div></div></div></div>																						

UNIT VENTILATORS - HOT WATER HEAT

EQUIPMENT NO.	QUANTITY	PERFORMANCE/ CONSTRUCTION REQUIREMENTS															BASIS OF DESIGN INFORMATION						MECHANICAL NOTES	ELECTRICAL NOTES	
		SUPPLY FAN		OUTSIDE AIRFLOW (CFM)	COOLING COIL				HEATING COIL							MNF	MODEL NO.	NOMINAL DIMENSIONS L" x W" x H" (EXCLUDING LEV KIT)	NOMINAL OPERATING WEIGHT (LBS.)	ELECTRICAL DATA					
		AIRFLOW (CFM)	HP		REFRIGERANT TYPE	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	AIR DATA		TOTAL CAPACITY (MBH)	AIR DATA		HOT WATER							VOLTS/PHASE	MCA	MOCP			
								ENT. DB/WB (°F)	LVG. DB/WB (°F)		ENT. DB (°F)	LVG. DB (°F)	ENT. TEMP (°F)	LVG. TEMP (°F)	FLOW RATE (GPM)										PRESSURE DROP (FT H2O)
UV-10	1	979	1 / 3	342	R-410A	33.2	24.9	80 / 67	56.6 / 56	46	70	113.4	180	133.9	2.0	.85	DAIKIN	UAVS9H10	74"x16.63"x30.13"	425	115 / 1	6.3	15	1-17	6.7,10,12,14
UV-12	1	979	1 / 3	387	R-410A	33.2	24.9	80 / 67	56.6 / 56	46	70	113.4	180	133.9	2.0	.85	DAIKIN	UAVS9H10	74"x16.63"x30.13"	425	115 / 1	6.3	15	1-17	6.7,10,12,14
UV-13A	1	979	1 / 3	281	R-410A	33.2	24.9	80 / 67	56.6 / 56	46	70	113.4	180	133.9	2.0	.85	DAIKIN	UAVS9H10	74"x16.63"x30.13"	425	115 / 1	6.3	15	1-17	6.7,10,12,14
UV-13B	1	979	1 / 3	281	R-410A	33.2	24.9	80 / 67	56.6 / 56	46	70	113.4	180	133.9	2.0	.85	DAIKIN	UAVS9H10	74"x16.63"x30.13"	425	115 / 1	6.3	15	1-17	6.7,10,12,14
UV-100	1	979	1 / 3	220	R-410A	33.2	24.9	80 / 67	56	46	70	113.4	180	133.9	2.0	.85	DAIKIN	UAVS9H10	74"x16.63"x30.13"	425	115 / 1	6.3	15	1-17	6.7,10,12,14
UV-101	1	1444	1 / 3	434	R-410A	53.7	40.3	80 / 67	54.3 / 54.3	62.9	70	110.1	180	117.1	2.0	.65	DAIKIN	UAVS9H15	98"x16.63"x30.13"	570	115 / 1	6.3	15	1-17	6.7,10,12,14
UV-102	1	1444	1 / 3	415	R-410A	53.7	40.3	80 / 67	54.3 / 54.3	62.9	70	110.1	180	117.1	2.0	.65	DAIKIN	UAVS9H15	98"x16.63"x30.13"	570	115 / 1	6.3	15	1-17	6.7,10,12,14
<div><div>MECHANICAL NOTES:</div><div><div>1. PROVIDE PNEUMATIC CONTROLS TO TIE INTO EXISTING GALVANIZED DRAIN PAN</div><div>2. COLD WEATHER DAMPER ASSEMBLY</div><div>3. REAR OUTSIDE AIR, BOTTOM RETURN AIR</div><div>4. HIGH EFFICIENCY ECM MOTOR</div></div><div><div>6. 2" MERV 13 FILTER</div><div>7. TOP DISCHARGE BAR STOCK STEEL GRILLE</div><div>8. FALSE BACK</div><div>9. SINGLE ROW HOT WATER COIL</div><div>10. PROVIDE WITH FREEZE STAT</div><div>11. CONTRACTOR RESPONSIBILITY TO CONFIRM QUANTITIES</div><div>12. PROVIDE WALL MOUNTED PNEUMATIC THERMOSTAT</div><div>13. PROVIDE ECONOMIZER</div></div><div><div>14. REUSE EXISTING PNEUMATICS</div><div>15. PROVIDE SUBBASE, MATCH HEIGHT OF EXISTING CASEWORK.</div><div>16. OUTSIDE AIR VALUES IN SCHEDULE ARE MAXIMUM VALUES.</div><div>17. BALANCE TO BALANCE UNIT VENTILATOR OUTSIDE AIR TO VALUES ON PLAN/VENTILATION SCHEDULE.</div><div>18. FACE AND BYPASS CONTROL</div></div></div> <div><div>ELECTRICAL NOTES:</div><div><div>1. INTEGRAL DISCONNECT SWITCH [FIELD WIRED]</div><div>2. INTEGRAL DISCONNECT SWITCH [FACTORY WIRED]</div><div>3. INTEGRAL UNPOWERED RECEPTACLES [FIELD WIRED]</div><div>4. INTEGRAL POWERED RECEPTACLES [FACTORY WIRED]</div><div>5. INTEGRAL CONDENSATE PUMP [UNPOWERED]</div><div>6. INTEGRAL CONDENSATE PUMP [POWERED]</div><div>7. LOW VOLTAGE CONTROLS</div></div><div><div>8. LINE VOLTAGE CONTROLS</div><div>9. INTEGRAL STARTERS</div><div>10. MOTORIZED DAMPERS [24VAC]</div><div>11. MOTORIZED DAMPERS [120VAC]</div><div>12. SINGLE POINT POWER FEED</div><div>13. INDOOR UNIT POWERED FROM OUTDOOR UNIT</div><div>14. ELECTRICAL CONTRACTOR TO PROVIDE DISCONNECT SWITCH ON SAME POWER FEED AS ASSOCIATED INDOOR UNIT</div><div>15.</div></div></div>																									

PACKAGED ROOFTOP SYSTEM WITH ENERGY RECOVERY WHEEL

EQUIPMENT NO.	LOCATION	PERFORMANCE/ CONSTRUCTION REQUIREMENTS																				BASIS OF DESIGN INFORMATION										MECHANICAL NOTES	ELECTRICAL NOTES														
		SUPPLY FAN				EXHAUST FAN				ERV		OUTSIDE AIR FLOW (CFM)	NOMINAL TONNAGE	COOLING COIL							HEATING							UNIT LVG TEMP (°F)	MNF	MODEL NO.	NOMINAL DIMENSIONS LxWxH (IN.)			NOMINAL OPERATION WEIGHT (LBS)	ELECTRICAL DATA												
		SUPPLY AIR (CFM)	BHP	MOTOR HP	EXT. S.P (IN W.G)	EXHAUST AIR (CFM) [ECONOMIZER]	BHP	MOTOR HP	EXT. S.P (IN W.G)	MOTOR HP	REFR. TYPE			TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	EER	SEER / IEER	AIR DATA				UNIT LVG TEMP (°F)	HEAT PUMP												ELECTRIC COIL			VOLTS/ PHASE	FLA	MCA	MOCP						
																		OA DB/WB (°F)	RA DB/WB (°F)	ENT. DB/WB (°F)	LVG. DB/WB (°F)		HGRH DB/WB (°F)	HEAT PUMP CAPACITY (MBH)	OA DB/WB (°F)	RA DB/WB (°F)	ENT. DB (°F)								LVG. DB (°F)	COP @47 F	ELECTRIC HEAT COIL SIZE (KW)					HEAT CAPACITY (MBH)	COIL ΔT (°F)				
ERU-1	SEE PLANS	2200	2.08	4	2	1482	.91	4	1.5	0.17	2200	7	R-410A	86.1	63.8	12.6	18.8	88 / 72	75 / 62	79.7/66.1	53.2/53.1	70 / 59.5	53.2	44.8	10 / 70	70 / 50	46.7	65.4	3.58	18	61.4	25.8	72.5	DAIKIN	DPS007A	111x96.5x56.8	2424	208 / 3	94.6	110.1	125	1-9, 11-17, 19	2,4,7,10,11				
ERU-2	SEE PLANS	1800	1.76	4	2	1404	.81	4	1.5	0.17	1800	7	R-410A	81.0	56.7	12.6	18.8	88 / 72	75 / 62	78.7/65.3	49.8/49.8	70/57.8	49.8	43.8	10 / 70	70 / 50	51.7	73.9	3.58	18	61.4	31.4	83.1	DAIKIN	DPS007A	111x96.5x56.8	2424	208 / 3	94.6	110.1	125	1-9, 11-17, 19	2,4,7,10,11				
ERU-3	SEE PLANS	3200	4.12	5	2	3000	1.95	4	1.5	0.17	3200	16	R-410A	162	108.5	11.5	20.5	88 / 72	75 / 62	79.3/65.8	48.3/48.2	70/57.1	48.3	95.7	10 / 70	70 / 50	48.7	76.1	3.55	30	102.4	29.5	78.2	DAIKIN	DPS016A	182.3x76.5x82.5	4139	208 / 3	167.7	200.3	225	1-9, 11-17, 19	2,4,7,10,11				
ERU-4	SEE PLANS	3200	4.13	5	2	2496	1.47	4	1.5	0.17	3200	16	R-410A	167.2	106.3	11.5	20.5	88 / 72	75 / 62	80.4/67.5	50.0/50.0	70/58.0	50	95.7	10 / 70	70 / 50	47.0	74.4	3.55	30	102.4	29.5	76.5	DAIKIN	DPS016A	182.3x76.5x82.5	4139	208 / 3	167.7	200.3	225	1-9, 11-17, 19	2,4,7,10,11				
ERU-5	SEE PLANS	1900	1.83	4	2	1482	.86	4	1.5	0.17	1900	7	R-410A	82.1	58.4	12.6	18.8	88 / 72	75 / 62	78.7/65.4	50.6/50.6	70/58.2	50.6	44.0	10 / 70	70 / 50	51.2	72.4	3.58	18	61.4	29.8	81.0	DAIKIN	DPS007A	111x96.5x56.8	2424	208 / 3	94.6	110.1	125	1-10, 12-18	2,4,7,10,11				
MECHANICAL NOTES: 1. 4" PLEATED MERV-8 FILTERS. 2. HINGED ACCESS DOORS 3. DIRTY FILTER INDICATOR SWITCH. 4. SUPPLY FAN STATUS SWITCH 5. HOT GAS REHEAT COIL. 6. PROVIDE NEW PROGRAMMABLE THERMOSTAT. 7. MANUFACTURER TO PROVIDE BACKET INTERFACE CARD 8. STAINLESS STEEL DRAIN PAN AND CONDENSATE OVERFLOW SWITCH, INTERLOCK TO TURN OFF UNIT. 9. PHASE LOSS PROTECTION 10. VERTICAL SUPPLY/RETURN DUCTWORK CONFIGURATION.												11. HORIZONTAL SUPPLY/RETURN DUCTWORK CONFIGURATION. 12. CONDENSER PAIL GUARD 13. ENERGY RECOVERY WHEEL 14. SCROLL COMPRESSOR FOR ALL CIRCUITS 15. MANUFACTURER TO PROVIDE FACTORY INSTALLED UNIT CONTROLLER 16. SUPPLY AIR FLOW MONITORING 17. SUPPLY AND EXHAUST FAN VFD 18. PROVIDE CORB ADAPTER 19. MOUNT ON EXISTING DUNNAGE.												ELECTRICAL NOTES: 1. INTEGRAL DISCONNECT SWITCH [FIELD WIRED] 2. INTEGRAL DISCONNECT SWITCH [FACTORY WIRED] 3. INTEGRAL UNPOWERED RECEPTACLES [FIELD WIRED] 4. INTEGRAL POWERED RECEPTACLES [FACTORY WIRED] 5. INTEGRAL CONDENSATE PUMP [UNPOWERED] 6. INTEGRAL CONDENSATE PUMP [POWERED] 7. LOW VOLTAGE CONTROLS												8. LINE VOLTAGE CONTROLS 9. INTEGRAL STARTERS 10. MOTORIZED DAMPERS [120VAC] 11. SINGLE POINT POWER FEED 12. INDOOR UNIT POWERED FROM OUTDOOR UNIT 13. ELECTRICAL CONTRACTOR TO PROVIDE DISCONNECT SWITCH ON SAME POWER FEED AS ASSOCIATED INDOOR UNIT											



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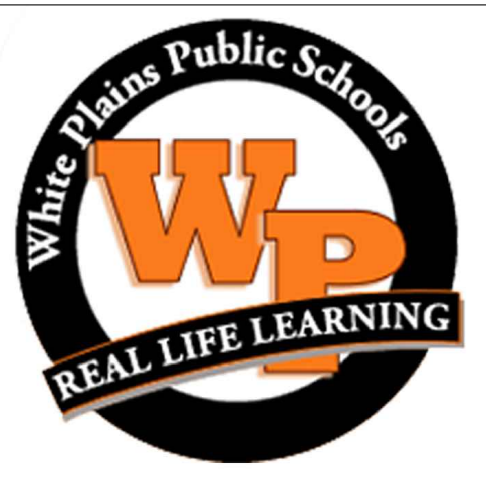
CONSULTANTS:

[illegible]

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DESIGNED BY: JML	DRAWN BY: BFB/DKR	CHECKED BY: JML	REVIEWED BY: QAQC
PROJECT NO.: WPSD 2205	DATE: OCTOBER 2023	SCALE:	

CLIENT **White Plains City
School District**

AC and Ventilation Upgrades at Mamaroneck Elementary School



**7 Nosband Ave.
White Plains, NY 10605**

**SED PROJECT CONTROL
NO. 66-22-00-01-0-010-017**

CONTRACT

CONTRACT H
HEATING VENTILATION AND AIR
CONDITIONING

STATUS

FINAL BID DOCUMENT

SHEET TITLE

MECHANICAL SCHEDULES

DRAWING No.

M602.00