ADDENDUM NO. 1

July 12, 2022

Greensburg Community Schools Additions to:

Greensburg Community Learning Center:	**422 E. Central Ave. Greensburg, IN 47240**

TO: ALL BIDDERS OF RECORD

This Addendum forms a part of and modifies the Bidding Requirements, Contract Forms, Contract Conditions, the Specifications and the Drawings dated May 27, 2022, by Fanning/Howey. Acknowledge receipt of the Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of Pages 1-1 through ADD 1-2, Specification Section 01 12 00 Multiple Contract Summary, Specification Section 01 21 00 Contract Allowance, Guideline Schedule, Technical Assurance Existing Roof Predesign Survey, and attached Fanning/Howey's Addendum No. 1, dated July 12, 2022, consisting of 2 Pages, Addendum Drawings MD.01, M2.01, M2.02, and M5.01.

GENERAL NOTE

Below is the link for the Virtual Bid Opening, which Bids are due July 19, 2022, at 2:00PM (local time) at Greensburg Community School Corporation, Board Room, 1312 W. Westridge Parkway, Greensburg, IN 47240.

Microsoft Teams meeting
Join on your computer or mobile app
Click here to join the meeting
Or join by entering a meeting ID
Meeting ID: 212 245 421 963
Passcode: kJ7chj
Or call in (audio only)
+1 317-762-3960,,173809151# United States, Indianapolis
Phone Conference ID: 173 809 151#

A. **SPECIFICATION SECTION 00 20 00 INFORMATION AVAILABLE TO BIDDERS**

1. Existing roof predesign survey is attached herein.
   a. Investigation report dated March 22, 2022, provided by Technical Assurance
   b. Junior High School is not applicable to this project.

B. **SPECIFICATION SECTION 01 12 00 MULTIPLE CONTRACT SUMMARY**

1. Reissued Specification Section is attached herein.

C. **SPECIFICATION SECTION 01 21 00 ALLOWANCES**

1. Reissued Specification Section is attached herein.

D. **SPECIFICATION SECTION 01 32 00 SCHEDULES AND REPORTS**

1. Project Guideline Schedule is attached herein.

SECTION 01 12 00 - MULTIPLE CONTRACT SUMMARY

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Prime Contract, including amended General Conditions and other Division 1 Specification Sections, apply to Work of this Section.

1.02 SUMMARY

A. The intent of this Section is to indicate the Work required by the Contractors and to provide information regarding the duties, responsibilities, and cooperation required by the Contractors, with similar requirements for the subcontractors and suppliers.

B. Owners right to maintain current operations

C. Occupancy requirements

D. Work by Owner

E. Permits, fees, and notices

F. Labor and materials

G. Verifications of existing dimensions

H. Project security

I. Coordination of work

J. Time of commencement and completion

K. Schedule of contract responsibilities

1.03 WORK UNDER SEPARATE CONTRACTS

A. Prime Contracts are defined to include the following contracts described in the Schedule of Contract Responsibilities included hereinafter; and each is recognized to be a major part of the project, with Work to be performed concurrently and in close coordination with Work of other Prime Contracts.

B. The "Contract Documents," as defined in the General Conditions, include "the Drawings." Although Drawings are grouped and identified by classification of the Work, Contractors shall be responsible for their Work as specified herein and as indicated on the Drawings. Although the majority of the Drawings are "to scale," Contractors are directed to use indicated dimensions for determining material quantities and for other reasons. No additional monies will be allowed due to Contractors using "scaling instruments" to determine material quantities or for other reasons.

C. Separate prime contracts will be awarded as per the **"Schedule of Contract Responsibilities"** (see Part 3 – Execution). Contractors shall include Work required by the Specifications and Drawings for each contract area defined in the Schedule.

D. Work for the complete construction of the Project will be under multiple prime contracts with the Owner. The Construction Manager will manage the construction of the Project.

E. Each Contractor shall be responsible for demolition and disposal of existing items relative to his Contract.

1.04 ADMINISTRATIVE RESPONSIBILITIES OF PRIME CONTRACTORS AND CM

A. The Construction Manager shall be responsible for the maintenance of the Construction Schedule and management of every phase of the Work.
   1. Each Contractor shall read the Specifications and Drawings for other separate Contracts for fixed equipment and the like to be incorporated or attached or built into the Work; and familiarize himself with the requirements and responsibilities of other Contracts to enable the required coordination and supervision.
   2. Each Contractor shall also familiarize himself with other items to be incorporated into the Work including equipment and Work by the Owner.
   3. Each Contractor shall cooperate with the Construction Manager in notifying him when the Work is at a stage to require the services of other Contractors and shall notify the Construction Manager in the event that such other Contractors do not carry out their responsibilities in connection with such notification.

B. Contractors shall cooperate with and assist the Construction Manager in the preparation of construction progress and procedures, schedule of product deliveries, and their effect on the overall project progress and completion. Other Contractors shall cooperate in getting their Work and the Work of their subcontractors completed according to the schedule as prepared and maintained by the Construction Manager. Each Contractor shall immediately notify the Construction Manager of a delay in delivery of products or the scheduled date of completion that may affect the total progress of construction.

C. Contractors required to make connections to existing utilities, especially sewerage where gravity flow occurs, shall verify grades and locations at points of such connections and shall notify the Construction Manager of circumstances which would adversely affect the proper flow or connection to such facilities.

1.05 PRIME CONTRACTORS USE OF PREMISES

A. Use of the Site: Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.
   1. Owner Occupancy: Allow for Owner occupancy and use by the public.
   2. Driveways and Entrances: Keep driveways and entrances serving the premises clear and available to the Owner, the Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.

B. Use of the Existing Building: Maintain the existing building in a weathertight condition throughout the construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period.

1.06 OWNERS RIGHT TO MAINTAIN OPERATIONS

A. During the course of this Project, normal and customary functions and operations must be maintained. The Contract Documents are intended to define a strict separation between the school activities of students and staff from the activities of the construction project.

B. The Construction Manager, Architect, and Owner will not tolerate any visible or audible actions initiated or responded to by any employees of Contractors on this Project toward any students, teachers, or staff members at the school system. Violators shall be promptly removed from the site.

C. The Owner intends to instruct students, teachers, and staff to refrain from communications with Contractor's personnel working on this Project. All communication with Owner and staff shall be through the Construction Manager.

D. Contractors must expend their best effort toward protection of the health, safety, and welfare of occupants on the Owner's property during the course of Work on this Project.

1.07 OCCUPANCY REQUIREMENTS

A. Full Owner Occupancy: The Owner will occupy the site and existing building during the entire construction period. Cooperate with the Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with the Owner's operations.

B. Partial Owner Occupancy: The Owner reserves the right to occupy and to place and install equipment in completed areas of the building prior to Substantial Completion, provided such occupancy does not interfere with completion of the Work. Such placing of equipment and partial occupancy shall not constitute acceptance of the total Work.

1. The Construction Manager will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied prior to Owner occupancy.
2. Party which obtained general building permit shall obtain a Certificate of Occupancy from local building officials prior to Owner occupancy.
3. Prior to partial Owner occupancy, mechanical and electrical systems shall be fully operational. Required inspections and tests shall have been successfully completed. Upon occupancy, the Owner will operate and maintain mechanical and electrical systems serving occupied portions of the building.
4. Upon occupancy, the Owner will assume responsibility for maintenance and custodial service for occupied portions of the building.

1.08 WORK BY OWNER

A. The Owner intends to complete the following items of Work outside the provisions of these Contract Documents. Contractors shall not restrict or interfere with the Owner's right to the Project to accomplish this Work.

1. Equipment and furniture except as scheduled and specified under Divisions 11 and 12 and shown on the Drawings.
2. Items which may be deleted from Contracts for Work as required by the Contract Documents.
3. Existing school maintenance work.
4. The purchase and supplying of certain materials as noted in the Project Manual.
5. The Owner, under separate contract, shall provide removal of identified asbestos containing materials from the existing structure. The asbestos report is available through the Construction Manager upon request.

1.09 PERMITS, FEES, AND NOTICES

A. The Construction Manager will secure the general building permit for the Owner. Each Contractor shall secure and pay for other permits, governmental fees, and licenses necessary for the proper execution and completion of his Work, which are

applicable at the time the bids are also received. Fees to relocate utilities on Owner's property shall be included in the bid of the Contractor doing the relocation.

1. State filing fees for plan approval are the responsibility of the Owner and will be paid by the Owner.

B. Utility Tie-Ins: Shall be arranged with local utility company and other involved parties for minimum interruption of service.

C. Shutdowns of existing systems shall be limited to minimum time required and scheduled with other involved parties. Provide 2 days written notice of shutdown to Construction Manager and Owner.

D. Inspections of installed work shall be performed by the governing authority as arranged for by the Contractor. Work shall not be covered until approved.

E. Each Contractor shall give notices and comply with laws, ordinances, rules, regulations, and orders of public authorities bearing on the performance of his Work. If a Contractor observes that the Contract Documents are at variance therewith, he shall promptly notify the Construction Manager in writing, and necessary changes shall be adjusted by appropriate notification. If a Contractor performs Work knowing it to be contrary to such laws, ordinances, rules, and regulations, and without such notice to the Construction Manager, he shall assume full responsibility therefore and shall bear the costs attributable thereto.

1.10 LABOR AND MATERIALS

A. Unless otherwise specifically noted, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for the proper execution and completion of his Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

B. Each Contractor shall enforce strict discipline and good order among his employees or other persons carrying out Work of his Contract and shall not permit employment of unfit person or persons or anyone not skilled in the task assigned to them.

C. Contractors and Subcontractors shall be subject to such rules and regulations for the conduct of the Work as the Owner may establish. Employees shall be properly and completely clothed while working. Bare torsos, legs and feet will not be allowed. Possession or consumption of alcoholic beverages or drugs, tobacco or other noxious behavior on the site is strictly prohibited. Violators shall be promptly removed from the site. Smoking is not permitted on school property or within school buildings.

D. Contractors will conduct criminal background checks (extent of and/or service to be used will be established by the Owner) on every employee assigned to work on the Project and clear them through the National Sex Offender Registry prior to their assignment to Project. Contractors will require the same of sub-contractors.

E. ID Badges will be issued by The Skillman Corporation upon receipt of verification from the Contractor that the employee/subcontractor employee or independent contractor has a satisfactory record to work on the Project.

F. E-Verify Compliance: Pursuant to I.C. 22-5-1.7, Contractor shall enroll in and verify the work eligibility status of all newly hired employees of Contractor through the E-Verify Program (Program). Contractor is not required to verify the work eligibility status of all newly hired employees through the Program if the Program no longer exists. Also pursuant to I.C. 22-5-1.7, Contractor must execute an affidavit affirming that the Contractor does not knowingly employ an unauthorized alien and confirming Contractor's enrollment in the Program, unless the Program no longer exists, shall be filed with the Owner prior to the execution of this contract. This contract shall not be deemed fully executed until such affidavit is delivered to the Owner.

Contractor and its subcontractors shall not knowingly employ or contract with an unauthorized alien or retain an employee or contract with a person that contractor or its subcontractor subsequently learns is an unauthorized alien. If Contractor violates this provision the Owner shall require Contractor to remedy the violation not later than thirty (30) days after the Owner notifies Contractor. If Contractor fails to remedy the violation within the thirty (30) day period, the Owner shall terminate the contract for breach of contract. If Owner terminates the contract, Contractor shall be liable to the Owner for actual damages in addition to any other contractual remedies. There is a rebuttable presumption that Contractor did not knowingly employ an unauthorized alien if Contractor verified the work eligibility status of the employee through the Program.

Prior to performing any work, Contractor shall require each subcontractor to certify to Contractor that the subcontractor does not knowingly employ or contract with an unauthorized alien and has enrolled in the Program. Contractor shall maintain on file a certification from each subcontractor throughout the duration of this contract or project which is the subject of this contract. If Contractor determines that a subcontractor is in violation of this provision, Contractor may terminate its contract with the subcontractor for such violation. In Accordance with I.C. 5-16-13 Contractor must provide the E-Verify Case Number of every employee that works on the project. This requirement includes the contractor's subs and suppliers to the fourth (4^{th}) tier.

G. The Owner is requiring that all contractors' personnel and their onsite employees and subcontractors submit to expanded history and child protection index check. Contractors shall enroll in the Safe Vendor Program through Safe Hiring Solutions www.safehiringsolutions.com. Enrollment in Safe Vendor will ensure contractors employees are vetted in accordance with I.C. 20-26-5-10 for expanded criminal history and expanded child protection index check. Contractor is responsible for the cost of enrollment and employee background check. All contractors' personnel and employees, once cleared for work will be issued a project identification badge that must be worn at all times while on site. All contractors/subcontractors employees shall provide name, address, picture state driver's license or picture identification card and/or Safe Vendor Card to The Skillman Corporation Site Manager upon request.

H. Pursuant to Indiana Code 5-16-13 Requirements for Contractors on Public Works Projects enacted by the Indiana Legislator requires, in addition to requirements already in effect, contractors to comply with the following:

1. Tier 1 –General/Prime Contractors to self-perform 15% of their total Contract.
2. Qualification thru the Department of Administration or INDOT requirement in accordance with IC 4-13.6-4.
    a. **Bids shall not be considered unless (1) the Prime Bidder and (2) all lower tiered subcontractors whose subcontract value is estimated to be $300,000 or more are qualified at the time of the bid in accordance with IC 4 – 13.6 – 4.**
3. Include Written Drug Testing Plan that covers all employees of the bidder who will perform work on the public work project and meets or exceeds the requirements set in IC 4-13-18-5 or IC 4-13-18-6 with Bid.
4. Minimum Insurance Requirements $1M/occurrence $2M/aggregate. However, check your bidding requirements as the Owners may have higher limit requirements.
5. Mandatory enrollment in E-Verify by all contractors down to the 4th Tier Sub Contracts and must provide the case verification number of all employees working on the project.
6. Prohibits contractors down to the 4th Tier Sub Contract from paying employees in cash.
7. Requirement to retain payroll records for 3 years
8. All contractors down to the 4th Tier Sub Contract must comply with Fair Labor Act, Indiana's Workers Compensation and Unemployment Compensation Insurance.
9. Mandatory Training Requirements based upon number of employees.
10. Failure to comply may result in debarment from public works projects for up to 4 years.

I. All contractors down to the 4th Tier Sub Contract must maintain general liability insurance in at least the following amounts: Each Occurrence Limit of $1,000,000 and General Aggregate Limit of $2,000,000. Other requirements and limits may apply see specification section 00 08 20 Schedule of Insurance Requirements.

1.11 CUTTING AND PATCHING

A. Refer to Section 01 73 10 – Cutting and Patching, for provisions on this subject.

1.12 VERIFICATIONS OF EXISTING DIMENSIONS

A. When verification of existing dimensions is required, the Contractor requiring said verification for the construction or fabrication of his material shall be the Contractor responsible for the procurement of the field information.

1.13 PROJECT SECURITY

A. Each Prime Contractor shall take all reasonable precautions to prevent injury, damage or loss to people and property in, on and adjacent to the project. This shall include not only their own work or property but that of other contractors and the Owner.

B. If deemed necessary by The Construction Manager a project wide security program may be developed for the purpose of preventing damage or loss at the project site or property adjacent thereto. Once accepted by the Owner, contractors shall comply.

1.14 SCHEDULE OF CONTRACT RESPONSIBILITIES - SCOPE

A. Contractors shall submit their proposals based on the work included under each contract area as listed herein. Include Work necessary for a complete project, as shown on the Drawings and called for in the Specifications.

B. Questions concerning the phasing or "Schedule of Contract Responsibilities" should be directed to the Construction Manager, who will be the interpreter and be responsible for this Schedule of Contract Responsibilities and Contract Breakdown, prior to submitting proposals and during construction.

C. The requirements of Division 1 are a part of the Work of each and every contract area. The Contractor for any one contract area shall be familiar with the Work and requirements of all other contract areas.

D. Certain Specification Sections describe Work to be performed under several contract areas. (Example: 06 10 00 - Rough Carpentry.) Provide Work of this nature as required for each contract area whether or not enumerated in the Schedule of Contract Responsibilities.

E. The following contract areas are broken down by Specifications Section conforming basically to the CSI format.

F. The Drawings and Specifications as furnished for each of the Contracts is for the convenience of the Contractor in preparing a proposal for this Project. However, each Contractor is responsible to review the complete set of Drawings and Specifications to assure that Work required to be installed to complete his phase of the Work is included in his proposal. This "Schedule of Contract Responsibilities" is a definition of the work as it is to be bid in separate contracts. Where a specific item of Work is not defined, but is normally inherent to a trade, or is included in the scope of the applicable technical revision, it will be the responsibility of that Contractor to include the Work in his proposal.

G. This "Schedule of Contract Responsibilities" is to aid each Contractor in defining the Scope of Work to be included in his proposal. However, omissions from this "Schedule of Responsibilities" do not relieve the Contractor from including in his proposal that Work which will be required to complete his Contract. Each Contractor should read the "Schedule of Contract Responsibilities" completely to familiarize himself with the Work of other Contractors that may have Work in adjacent areas and to coordinate the interfacing problems that may occur as the work is assembled and constructed.

H. Where specific Work is to be completed under a particular phase of the Project and the Work is wholly or partially completed by other trades because of the type of work involved or jurisdictional trade agreements, the Contractor will be responsible to subcontract the Work as necessary to complete the Work included in his Contract. No delay in the Work will be allowed due to the failure of the Contractor to subcontract related work required by jurisdictional trade agreements.

1.15 COORDINATION OF WORK

A. Each Contractor is responsible to coordinate his Work with the Work of other trades and other Contractors and requirements of the school system. The Contractor must make space allowances for Work of other Contractors; provide necessary openings where indicated or implied by the Drawings and Specifications. Each Contractor is responsible to protect his own Work.

1.16 TIME OF COMMENCEMENT AND COMPLETION

A. The Contractor shall commence work within ten (10) days after being notified in writing to proceed and shall complete the Work within the time limitations established in the Form of Agreement.
   1. It is anticipated that construction will start within **28** calendar days after receipt of bids.
   2. Construction shall be complete within **354** consecutive calendar days, or earlier, after Notice to Proceed.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.01 SCHEDULE OF CONTRACT RESPONSIBILITIES

3.02 GENERAL REQUIREMENTS

A. PROVIDED BY OWNER THROUGH THE CONSTRUCTION MANAGER

Section	01 32 00	Schedules and Reports
Section	01 45 10	Testing Laboratory Services
Section	01 59 10	Project Office
Section	01 71 50	Final Cleaning

B. PROVIDED BY ALL CONTRACTORS AS APPLICABLE

Section	01 12 00	Multiple Contract Summary
Section	01 23 00	Alternates
Section	01 25 00	Contract Modification Procedures
Section	01 28 00	Schedule of Values
Section	01 29 00	Applications for Payment
Section	01 31 00	Project Meetings
Section	01 32 00	Schedules and Reports
Section	01 33 00	Submittal Procedures
Section	01 40 00	Quality Requirements
Section	01 45 10	Testing Laboratory Services
Section	01 50 50	Temporary Facilities and Controls
Section	01 54 60	Environment Protection
Section	01 54 80	Utility Protection
Section	01 56 30	Water Control
Section	01 56 90	Housekeeping & Safety
Section	01 59 20	Offices and Sheds
Section	01 60 00	Product Requirements
Section	01 72 50	Work Layout
Section	01 73 10	Cutting and Patching
Section	01 77 00	Contract Closeout

All Contractors shall provide their Superintendents with radios capable of handling multiple channels and compatible with radios used by the Construction Manager.

All contractors shall subscribe to PlanGrid for use on this project. Number of users is up to the contractor, however, at a minimum your site personnel will be required to use this product to facilitate communication. PlanGrid will be used for the current construction documentation to include, current set, addenda, ASI, As Built Conditions, QA/QC, and Punch List. Visit the www.PlanGrid.com to determine subscription pricing. It is recommended that you have an office administrator to assist your field personnel. PlanGrid is a tool for the construction phase and will not be used for bidding. Visit www.skillmanplanroom.com for bid documents

C. PROVIDED BY DESIGNATED CONTRACTORS

Section	01 21 00	Allowances
Section	01 51 10	Temporary Electricity, Lighting and Warning Systems
Section	01 51 30	Temporary Heating, Ventilation and Cooling
Section	01 51 50	Temporary Water
Section	01 51 60	Temporary Sanitary Facilities
Section	01 51 80	Temporary Fire Protection
Section	01 52 10	Construction Aids and Temporary Enclosures
Section	01 52 60	Rubbish Container
Section	01 53 10	Fences (Temporary Security)
Section	01 53 30	Barricades
Section	01 56 20	Dust Control
Section	01 57 60	Project Signs
Section	01 72 00	Field Engineering

3.03 BID CATEGORIES

A. BID CATEGORY NO. 1 – GENERAL TRADES

General Requirements in Paragraph 3.02.B above.

Section	01 21 00	Allowances
Section	01 51 50	Temporary Water
Section	01 51 60	Temporary Sanitary Facilities
Section	01 51 80	Temporary Fire Protection
Section	01 52 10	Construction Aids and Temporary Enclosures
Section	01 52 60	Rubbish Container
Section	01 53 10	Fences (Temporary Security)
Section	01 53 30	Barricades
Section	01 56 20	Dust Control
Section	01 57 60	Project Signs
Section	02 41 19	Selective Demolition
Section	06 10 00	Rough Carpentry
Section	06 16 00	Sheathing
Section	07 92 00	Joint Sealants
Section	09 51 13	Acoustical Panel Ceilings

Project Specific Clarifications:

1. Provide traffic control measures when required for completion of your work.
2. Provide selective demolition for this divisions work.
3. Provide dumpsters and rubbish containers for duration of project.
4. Provide all cold-formed studs and insulation indicated.
5. Include additional $15,000 masonry restoration allowance for areas of missing mortar, deteriorated stone copings, and sealant failures. Reference specification section 01 21 00 for General Trades contingency allowance.
4. Include 100 laborer hours for use at the discretion of the Construction Manager. Laborer hours used must be tracked with work tickets signed daily by Skillman Site Manager as documentation and provided as backup documentation with monthly application for payments.

B. BID CATEGORY NO. 2 – HVAC

General Requirements in Paragraph 3.02.B above.

Section	01 21 00	Allowances
Section	01 51 30	Temporary Heating, Ventilation and Cooling
Section	23 05 00	Common Work Results
Section	23 05 19	Thermometers & Pressure Gauges
Section	23 05 23	General-Duty Valves
Section	23 05 29	Hangers and Supports
Section	23 05 53	Identification
Section	23 05 93	Testing and Balancing
Section	23 07 00	Insulation
Section	23 09 00	Control Instrumentation
Section	23 09 93	Operational Sequences Control Points Lists
Section	23 21 13	Hydronic Pipe and Accessories
Section	23 21 23	Hydronic Pumps and Accessories
Section	23 23 00	Refrigerant Piping
Section	23 25 00	Hydronic System Water Treatment
Section	23 29 23	Variable-Frequency Motor Controllers
Section	23 31 13	Rigid Duct
Section	23 33 00	Air Duct Accessories
Section	23 34 23	Powered Ventilators
Section	23 37 13	Diffusers, Registers, and Grilles
Section	23 64 23	Air-Cooled Chillers with Remote Evaporator
Section	23 73 13	Modular Air Handlers
Section	23 82 19	Unit Ventilators

Project Specific Clarifications:

1. Provide new housekeeping pads and modify existing as needed for your own work/equipment.
2. Include reinstallation of all existing items identified to be removed and reinstalled on Mechanical sheets.
3. Include weather tight sheet metal caps and batt insulation at existing curbs per mechanical plan keynote 9.

C. BID CATEGORY NO. 3 – ELECTRICAL & TECHNOLOGY

General Requirements in Paragraph 3.02.B above.

Section	01 21 00	Allowances
Section	01 51 10	Temporary Electricity, Lighting and Warning Systems.
Section	26 00 05	Electrical Demolition
Section	26 00 50	General Electrical Requirements
Section	26 05 05	Electrical Testing
Section	26 05 19	Low-Voltage Electrical Power Conductors and Cables
Section	26 05 26	Grounding and Bonding for Electrical Systems
Section	26 05 29	Hangers and Supports for Electrical Systems
Section	26 05 33	Conduit and Boxes for Electrical Systems

Section	26 05 53	Identification for Electrical Systems
Section	26 09 23	Lighting Control Devices
Section	26 28 16	Enclosed Switches and Circuit Breakers
Section	26 51 00	Interior Lighting
Section	28 31 11	Digital, Addressable Fire-Alarm System

Project Specific Clarifications:

1. Provide all work associated with supporting and reinstalling existing interior light fixtures to remain where ceilings are scheduled to be replaced.
2. Provide all work associated with disconnecting and reconnecting power to existing HVAC equipment identified as being replaced.
3. Provide all work associated to remove and reinstall existing to remain electrical/technology devices where ceilings are scheduled to be replaced.

D. BID CATEGORY NO. 4 – Roofing

General Requirements in Paragraph 3.02.B above.

Section	01 21 00	Allowances
Section	01 52 60	Rubbish Container
Section	02 41 19	Selective Demolition
Section	05 50 00	Metal Fabrications
Section	06 10 00	Rough Carpentry
Section	06 16 00	Sheathing
Section	07 01 50.19	Preparation for Re-Roofing
Section	07 54 00	Thermoplastic Membrane Roofing
Section	07 54 23	Thermoplastic Polyolefin (TPO) Roofing
Section	07 62 00	Sheet Metal Flashing & Trim
Section	07 71 00	Roof Specialties
Section	07 92 00	Joint Sealants

Project Specific Clarifications:

1. Provide dumpsters and rubbish containers for your own work.
2. Provide selective demolition for this divisions work.
3. Provide all wood blocking and sheathing within roof system.
4. Provide temporary weather protection to maintain water-tight condition for the existing building roof.
5. Provide all joint sealants required for this divisions work. (Including joint sealant between roofing material and dissimilar surfaces.
6. Include coordination with owner provided roofing consultant.

END OF SECTION 01 12 00

SECTION 01 21 00 – ALLOWANCES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including amended General Conditions and other Division-1 Specification Sections, apply to work of this Section.

1.02 REQUIREMENTS INCLUDED

A. The Specifications contain Allowances for particular items, methods of construction, quantities of materials, labor for certain items and these stated Allowances shall be included in the total lump sum bid price.
   1. Should the final amounts as determined from actual costs vary from these stated Allowances, the Contract price will be adjusted by Change Order as stated in the Conditions of the Contract.
   2. Under no circumstances shall work exceeding the stated Allowance amounts, proceed without a properly executed Change Order.

B. A "Schedule of Allowances" showing amounts included in each prime Contract Sum, is included at the end of this Section.

C. Product/Materials Allowance: At the earliest feasible date after award of Contract, advise the Architect and Construction Manager of scheduled date when final selection and purchase of each product or system described by each Allowance must be accomplished in order to avoid delays in performance of the Work.
   1. As requested by the Architect, obtain and submit proposals for the work of each Allowance for use in making final selection; include recommendations for selection which are relevant to the proper performance of the Work.
   2. Purchase products and systems as specifically selected (in writing) by the Architect.
   3. Submit proposals and recommendations, for purchase of products or systems of Allowances, in form specified for Change Orders.
   4. When requested, submit a substantiated survey of quantities of materials, as shown in the "Schedule of Values", revised where necessary, and corresponding with Change Order quantities.
   5. Amount of Allowance includes:
      a. Net cost of product
      b. Delivery to the site
      c. Applicable taxes
   6. In addition to amount of Allowance, include in Bid, for inclusion in Contract Sum, Contractor's costs for:
      a. Handling at site, including unloading, uncrating and storage
      b. Protection from elements, from damage

c. Labor, installation and finishing
d. Other expenses (e.g., testing, adjusting and balancing) required to complete installation
e. Overhead and profit

D. Contingency Allowance: Contingency allowance shall be used only as directed for Owner's purposes. Proposal shall be submitted by Contractor for work requested in format similar to that required for Change Orders. Compensation to the Contractor for work requested utilizing this Allowance shall be for only Contractor's costs as defined by Paragraph 7.3.7 of the General Conditions, except no compensation shall be allowed for overhead and profit. At time of Project closeout, unused amounts remaining in contingency allowance shall be credited to Owner by Change Order.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.01 PRODUCT ALLOWANCE

A. Not Used

3.02 CONTINGENCY ALLOWANCES

Allow a lump sum additional work required but not indicated on Drawings or reasonably anticipated.

A.	Bid Category No. 01 General Trades	$100,000
B.	Bid Category No. 02 HVAC	$100,000
C.	Bid Category No. 03 Electrical & Technology	$50,000
D.	Bid Category No. 04 Roofing	$75,000

END OF SECTION 01 21 00

Guideline Schedule - Greensburg Community Learning Center Improvements

ACTIVITY	2022									2023								
	July				A	S	O	N	D	J	F	M	A	M	J	J	A	S
	3	10	17	24														
Preconstruction Phase																		
Bid Opening			19															
Pre-Award Conferences			20,21															
School Board Review/Approval					8													
Construction Phase																		
Issue Notices to Proceed					9													
Contracting, Mobilization, Temp Facilities																		
Mechanical Upgrades									21							28		
Roof Replacement, Ceiling Replacement, and Lighting														30		28		
Substantial Completion																28		
Construction Complete																	14	

Digital only – no hard copy to follow

March 22, 2022

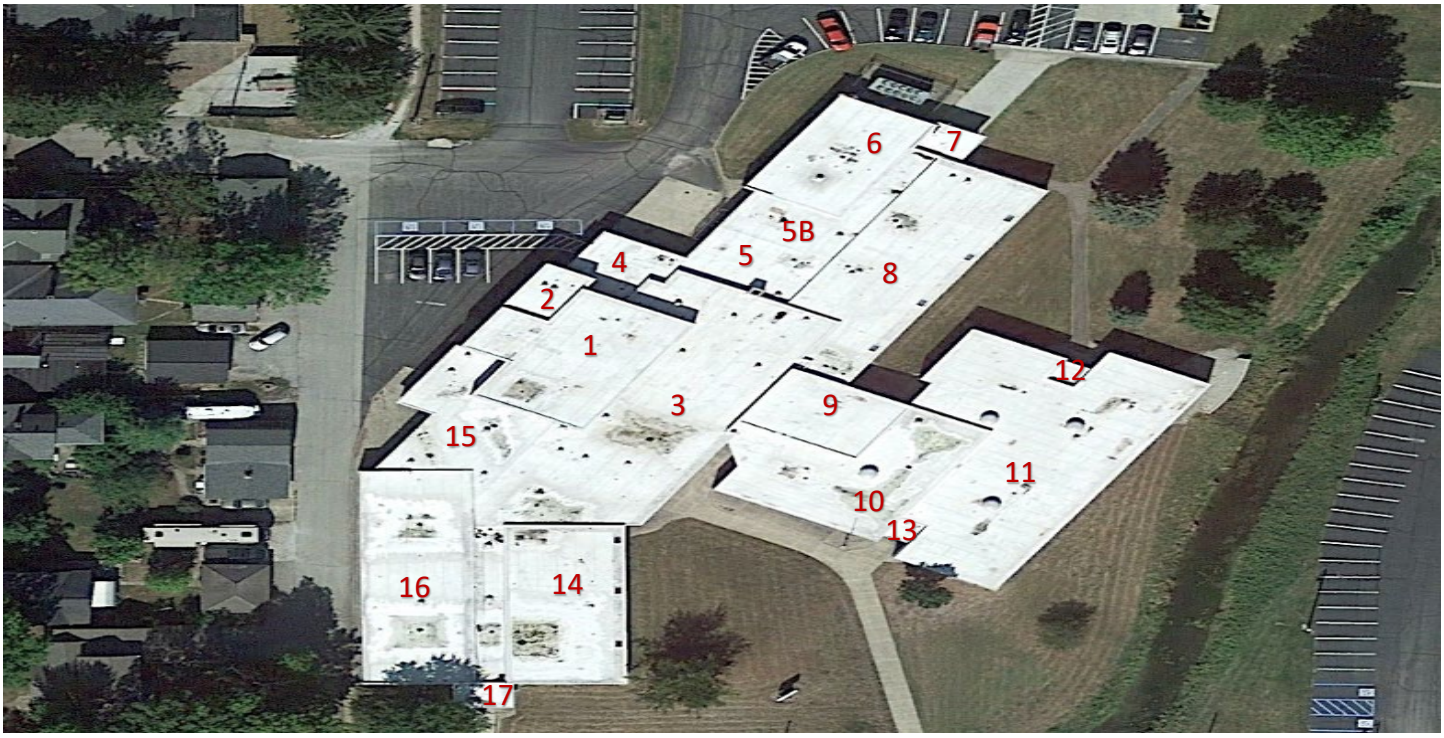
Mr. Allen J. Cradler, AIA, CSI, CCS, LEED AP BD+C
Specification Coordinator/Principal
Fanning-Howey Associates, Inc.
350 East New York Street
Indianapolis, IN 46204

Re: **Greensburg Community Schools**
Learning Center and Junior High School Roof Replacement Projects
Predesign Survey

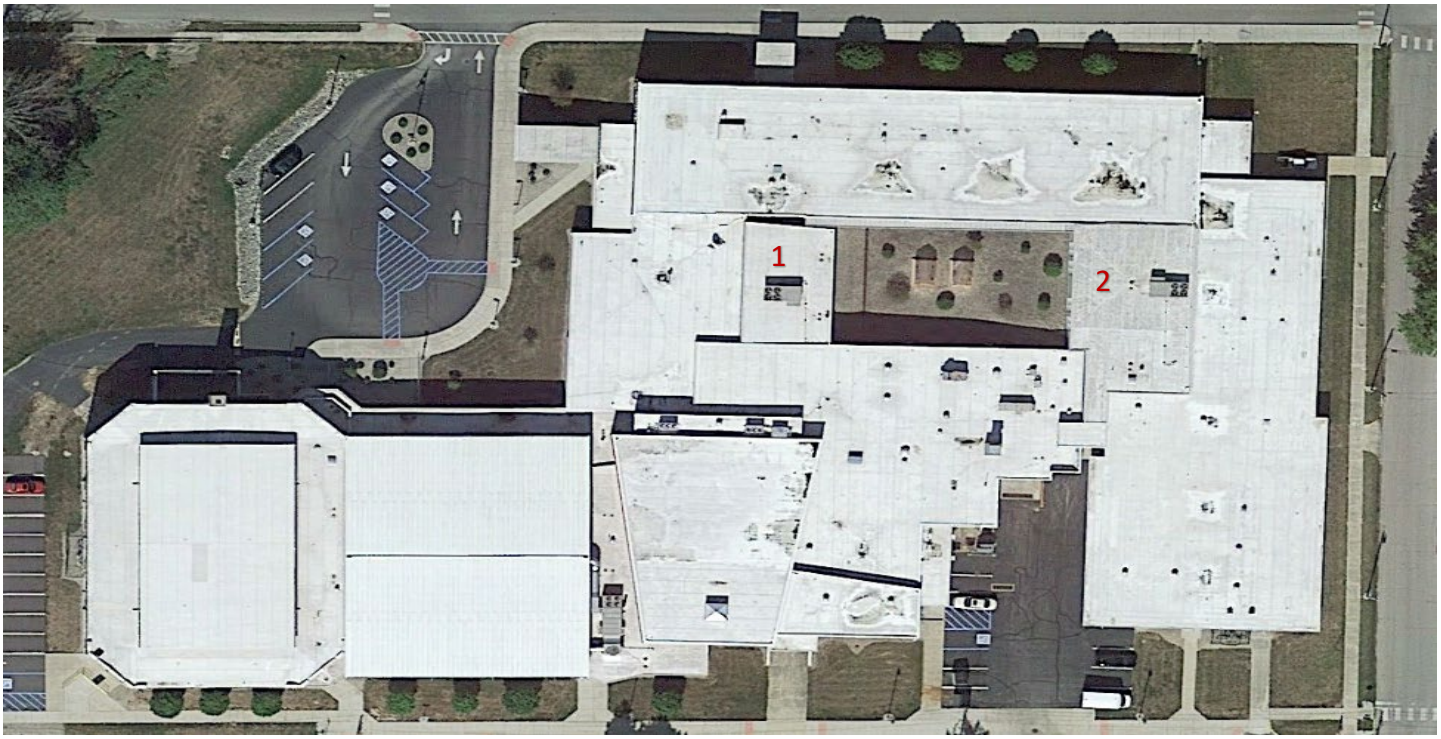
Dear Mr. Cradler,

Upon your request, Technical Assurance, Inc. (TA) has engaged in the review of existing roof conditions at the Junior High School and Learning Center for Greensburg Community Schools. This letter shall serve as confirmation of our completion of the predesign survey for roof replacement (full or partial) on these facilities.

Please consider the following satellite images as a visual reference of the facilities and roof areas referenced in the contents of the report:



Greensburg – Learning Center
422 East Central Avenue
Greensburg, IN 47240



Greensburg – Junior High School
505 East Central Avenue
Greensburg, IN 47240

Existing Construction

The Learning Center building is multilinear in shape and accounts for approximately 45,820 square feet of total roof surface area. The Learning Center roof is separated into eighteen (18) distinct roof areas. The Junior High School building is multilinear in shape and accounts for approximately 6,400 square feet of total roof surface area. The Junior High School roof is separated into two (2) distinct roof areas.

Destructive test cuts were taken to verify the roof assemblies. Based upon these test cuts, the roof assemblies are comprised of the following (top surface to bottom finish):

1) Learning Center
   a) Roof Areas 1, 2, 3, and 7
      - Thermoplastic single-ply roof membrane (mechanically attached)
      - Plastic separator sheet (loose laid)
      - Multi-ply built-up roof membrane (smooth surfaced)
      - 1-inch perlite insulation (attachment unknown)
      - 1 to 4 1/2-inches tapered expanded polystyrene insulation (attachment unknown)
      - Vapor retarder system (asphalt attached)
      - 5/8-inch gypsum board (attachment method unknown)
      - Steel deck

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b) Roof Areas 4, 5, 5B, 6, and 8
- Thermoplastic single-ply roof membrane (mechanically attached)
- Plastic separator sheet (loose laid)
- Multi-ply built-up roof membrane (smooth surfaced)
- 1-inch perlite insulation (attachment unknown)
- 1 to 5-inches tapered polyisocyanurate insulation (attachment unknown)
- Vapor retarder system (asphalt attached)
- 5/8-inch gypsum board (attachment method unknown)
- Steel deck

c) Roof Areas 9, 10, 11, 12, and 13
- Thermoplastic single-ply roof membrane (mechanically attached)
- Plastic separator sheet (loose laid)
- EPDM single-ply roof membrane (attachment unknown)
- 1 to 4-inches tapered expanded polystyrene insulation (attachment unknown)
- Felt base sheet (attachment unknown)
- Steel deck

d) Roof Areas 14, 15, 16, and 17
- Thermoplastic single-ply roof membrane (mechanically attached)
- Plastic separator sheet (loose laid)
- Multi-ply built-up roof membrane (smooth surfaced)
- 1-inch perlite insulation (attachment unknown)
- 1 to 5-inches tapered expanded polystyrene insulation (attachment unknown)
- 5/8-inch gypsum board (attachment method unknown)
- Steel deck

There are currently two (2) roof systems installed in each area of work on the Learning Center. Insulation (beneath the thermoplastic membrane) was confirmed "wet" on Roof Areas 2, 5, 5B, and 12. Leakage into the interior space has been reported, signs of previous leakage was observed, but no active leaks were noted during our visit.

The roof areas are sloped to (primarily) internal roof drains (and overflow roof drains), but some thru-wall scuppers do exist at or near canopy roof areas. Minor amounts of ponding water were noted on all roof surface(s) primarily occurring around roof drain (and overflow drain) locations.

Supplemental as-built construction information for each respective roof area of the Learning Center is as follows:

e) Roof Area 1
- Surface area - approximately 3,300 square feet
- Roof slope – approximately 1/8-inch per foot
- Access – exterior extension ladder (form adjacent Roof Area 3)
- Drainage – internal roof drains
- Perimeter edge – sheet metal coping

f) Roof Area 2
- Surface area - approximately 510 square feet
- Roof slope – approximately 1/8-inch per foot
- Access – adjacent roof area
- Drainage – internal roof drains
- Perimeter edge – sheet metal coping and termination bar at brick masonry

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g) Roof Area 3
- Surface area - approximately 7,400 square feet
- Roof slope – approximately 1/8-inch per foot
- Access – adjacent roof area
- Drainage – internal roof drains
- Perimeter edge – Sheet metal coping, termination bar at brick masonry, and fascia metal
- Expansion joints – roof to roof

h) Roof Area 4
- Surface area – approximately 830 square feet
- Roof slope – approximately 1/8-inch per foot
- Access – exterior extension ladder
- Drainage – internal roof drains
- Perimeter edge – fascia metal and termination bar at brick masonry

i) Roof Area 5
- Surface area – approximately 2,000 square feet
- Roof slope – approximately 1/8-inch per foot
- Access – adjacent roof
- Drainage – internal roof drain and thru-wall scupper
- Perimeter edge – fascia metal, membrane covered fascia metal, and termination bar at brick masonry
- Expansion joints – roof-to-roof

j) Roof Area 5B
- Surface area – approximately 900 square feet
- Roof slope – approximately 1/8-inch per foot
- Access – adjacent roof
- Drainage – internal roof drains
- Perimeter edge – fascia metal
- Expansion joints – roof-to-roof

k) Roof Area 6
- Surface area – approximately 2,200 square feet
- Roof slope – approximately 1/8-inch per foot
- Access – adjacent roof
- Drainage – internal roof drains
- Perimeter edge – membrane drip edge, membrane covered fascia metal, and termination bar on top of concrete wall

l) Roof Area 7
- Surface area – approximately 390 square feet
- Roof slope – approximately 1/8-inch per foot
- Access – adjacent roof
- Drainage – thru-wall scupper
- Perimeter edge – fascia metal and termination bar at concrete wall

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m) Roof Area 8
- Surface area – approximately 4,600 square feet
- Roof slope – approximately 1/8-inch per foot
- Access – adjacent roof
- Drainage – internal roof drains
- Perimeter edge – fascia metal and termination bar at masonry wall

n) Roof Area 9
- Surface area – approximately 1,500 square feet
- Roof slope – approximately 1/8-inch per foot
- Access – adjacent roof
- Drainage – internal roof drains (overflow roof drains)
- Perimeter edge – sheet metal coping, termination bar at EIFS, and fascia metal

o) Roof Area 10
- Surface area – approximately 3,600 square feet
- Roof slope – approximately 1/8-inch per foot
- Access – adjacent roof
- Drainage – internal roof drains (overflow roof drains)
- Perimeter edge – fascia metal, termination bar at EIFS

p) Roof Area 11
- Surface area – approximately 7,700 square feet
- Roof slope – approximately 1/8-inch per foot
- Access – adjacent roof
- Drainage – internal roof drains (overflow roof drains)
- Perimeter edge – fascia metal and termination bar at EIFS

q) Roof Area 12
- Surface area – approximately 120 square feet
- Roof slope – approximately 1/8-inch per foot
- Access – adjacent roof
- Drainage – internal roof drains
- Perimeter edge – fascia metal and termination bar at EIFS

r) Roof Area 13
- Surface area – approximately 120 square feet
- Roof slope – approximately 1/8-inch per foot
- Access – adjacent roof
- Drainage – internal roof drains
- Perimeter edge – fascia metal and termination bar at EIFS

s) Roof Area 14
- Surface area – approximately 3,500 square feet
- Roof slope – approximately 1/8-inch per foot
- Access – adjacent roof
- Drainage – internal roof drains
- Perimeter edge – fascia metal

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t) Roof Area 15
- Surface area – approximately 2,400 square feet
- Roof slope – approximately 1/8-inch per foot
- Access – adjacent roof
- Drainage – internal roof drains
- Perimeter edge – fascia metal and termination bar at masonry wall
- Expansion joints – roof-to-roof

u) Roof Area 16
- Surface area – approximately 4,500 square feet
- Roof slope – approximately 1/8-inch per foot
- Access – adjacent roof
- Drainage – internal roof drains
- Perimeter edge – membrane covered fascia and membrane covered parapet wall

v) Roof Area 17
- Surface area – approximately 250 square feet
- Roof slope – approximately 1/8-inch per foot
- Access – adjacent roof
- Drainage – thru-wall scupper
- Perimeter edge – fascia metal and termination bar at concrete wall

2) Junior High School

a) Roof Areas 1 and 2
- Thermoplastic single-ply roof membrane (adhesive attached)
- 1/2-inch wood fiberboard insulation (attachment unknown)
- 1 1/2 to 8-inches tapered polyisocyanurate insulation (attachment unknown)
- Steel deck

There is currently one (1) roof system installed in each area of work on the Junior High School. Insulation (beneath the thermoplastic membrane) appeared “dry” with no wetted insulation noted in core cuts. Leakage into the interior space has been reported, signs of previous leakage was observed, but no active leaks were noted during our visit.

The roof areas are sloped to (primarily) internal roof drains (and overflow roof drains). Minor amounts of ponding water were noted on both roof surface(s) primarily occurring around roof drain (and overflow drain) locations.

Supplemental as-built construction information for each respective roof area of the Junior High School is as follows:

b) Roof Area 1
- Surface area - approximately 2,200 square feet
- Roof slope – approximately 1/8-inch per foot
- Access – adjacent roof
- Drainage – internal roof drains (overflow roof drains)
- Perimeter edge – sheet metal coping and membrane covered sheet metal coping

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c) Roof Area 2
- Surface area - approximately 4,200 square feet
- Roof slope – approximately 1/4-inch per foot
- Access – adjacent roof
- Drainage – internal roof drains (overflow drains)
- Perimeter edge – fascia metal and membrane wall drip edge
- Expansion joints – roof to roof

Reroof Design Considerations

A few areas of concern exist regarding roof replacement and our recommendation(s) for work. Concerns include but are not necessarily limited to the following:

General:

- Reroof pricing has been difficult to predict during this current nationwide roofing industry construction material shortage:
  - As of this report date, material deliveries are reported to be 3 to 9 months out from the date an order has been placed. Long delays in material deliveries are being experienced, resulting in the delayed start to projects
  - Materials have been more difficult to obtain, and material costs have been on a steep incline since March of 2021; in some cases, material costs have doubled in price
  - Material costs being quoted from material manufacturers, suppliers and distributors are being assessed and confirmed on the date on which the materials are being delivered to the project (not at date of order, and not at date of shipping)
  - It has been a challenge over the last 12-14 months to predict the outcome of competitive bids/quotes due to economic environment, industry material shortages, labor shortages, specific project requirements, and in the time of year in which pricing is received/anticipated project start
- Unless there is a change in status or function, the building is a fully functional K-12 support and office space with occupancy expected during construction
- Construction activities (work hours, building access, critical lifts, etc. al.) should be carefully coordinated to mitigate any safety and access concerns
- Construction debris, noise, fumes, odors, etc. may be a concern during regular business hours
- The existing roof substrates (steel deck) are primarily unseen, and their overall condition can only be truly verified during the reroof process
- Two roof systems are currently installed on multiple sections of the building. To be compliant with the building code, the roof system(s) will need to be removed down to the structural deck surface
- Existing roof assemblies may not meet current energy code requirements. A thermal system upgrade may be required, potentially affecting the height of installed rooftop equipment. A minimum R-Value of 20 is recommended to meet current energy code requirements
- Roof drainage is considered as good to fair. A tapered insulation system would be needed as well as drainage enhancements at and adjacent to roof drains/overflow roof drains (sumps and saddles)
- There has not been a structural evaluation performed for this roof system by TA. It has not been determined at this time if the structural framing system can support any (significant) additional dead-load weight
- Asbestos containing roofing materials (ACRM's) are not reported to exist within the roof assemblies but testing of the latent base sheet/vapor retarder membrane and built-up roof membrane would be suggested to establish the presence of any controlled materials

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- The current replacement budget could be either positively or negatively impacted depending on the scope of work selected for the building
- Wet insulation was confirmed in Roof Areas 2, 5, 5B, and 12; leakage into the interior space of the building is reported to exist
- Consideration should be given to more permanent roof access by the way of an exterior (secured) man ladder or an interior roof hatch in order to access Roof Areas 1 and 2 for repair and maintenance
- Existing EIFS conditions connected to and adjacent to Roof Area 9 are suspect and require remediation work. Currently, the conditions are enveloped in sheets of thermoplastic single-ply membrane which are adhered to the EIFS substrate and open at the bottom near the roof surfaces. The owner reported they would like a similar detail installed during the roof replacement to mitigate the need for EIFS replacement

Learning Center Roof Areas 1, 2, 5B, and 6:

- Curb heights are low, and rooftop units may need raised to meet minimum industry standards
- Pipe penetrations are low and may need raised to meet minimum industry standards
- Perimeter edge sheet metal should be replaced as part of this work
- Evidence of ponding was observed throughout the roof areas and may require a tapered insulation assembly for proper drainage
- Termination bar and sealant are exposed to the elements, and new sheet metal receivers and counterflashing should be installed as part of this work

Learning Center Roof Areas 3, 4, 5, 8, 9, 10, and 11:

- Curb heights are low, and rooftop units may need raised to meet minimum industry standards
- Pipe penetrations are low and may need raised to meet minimum industry standards
- Perimeter edge sheet metal should be replaced as part of this work
- Evidence of ponding was observed throughout the roof areas and may require a tapered insulation assembly for proper drainage
- Termination bar and sealant are exposed to the elements, and new sheet metal receivers and counterflashing should be installed as part of this work
- EIFS walls at or adjacent to Roof Area 9 are damaged and membrane used to encapsulate the wall conditions is no longer adhered. Plywood sheathing may need installed for the membrane to have a substrate it will adhere to
- Chimney between Roof Areas 3 and 5 is deteriorated/damaged at motor joints, brick units, and concrete cap. The masonry work should be addressed as part of this work
- Fascia metal is covered by thermoplastic membrane and holes have been drilled into the extender metal for attachment of a termination bar. Remediation of the existing extender metal should be part of this work
- On Roof Area 10 a temporary base flashing detail was installed during the previous roofing installation at the overhang of Roof Area 3. This detail may need removed and a resolution be part of this work

Learning Center Roof Areas 7, 12, 13, 14, 15, 16, and 17

- Curb heights are low, and rooftop units may need raised to meet minimum industry standards
- Pipe penetrations are low and may need raised to meet minimum industry standards
- Perimeter edge sheet metal should be replaced as part of this work
- Evidence of ponding was observed throughout the roof areas and may require a tapered insulation assembly for proper drainage
- Termination bar and sealant are exposed to the elements, and new sheet metal receivers and counterflashing should be installed as part of this work
- Thru-wall scupper clogged on Roof Area 7 and may require complete replacement as part of this work

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Junior High School Roof Areas 1 and 2

- Curb heights are low, and rooftop units may need raised to meet minimum industry standards
- Pipe penetrations are low and may need raised to meet minimum industry standards
- Perimeter edge sheet metal should be replaced as part of this work
- Evidence of ponding was observed throughout the roof areas and may require a tapered insulation assembly for proper drainage
- Termination bar and sealant are exposed to the elements, and new sheet metal receivers and counterflashing should be installed as part of this work
- Thru-wall scupper clogged on Roof Area 7 and may require complete replacement as part of this work
- Roof Area 1 has loose termination bar at the Air Handling Unit Bellow.

Summary and Recommendations

The current state of the roofing industry is steeped in uncertainty. While we are not seeing a significant increase in roofing labor, we have seen a steady (and consistently sharp) increase in material pricing this year that has resulted in higher-than-normal replacement costs. Simply, Technical Assurance cannot fully anticipate the cost of roof replacement work until the project has been bid.

The facilities can be termed as challenging due to the current national health crisis, several unique detail conditions, the tear-off of two (2) existing roof systems (Learning Center), square footage involved and the timeframe in which the work may need to be performed. There are numerous roofing system options in the market and prices vary depending on a number of factors. It is our assumption that the school corporation has a roof system of choice, therefore we are not inclined to make recommendations that may be in contrast with past selections. We would, however, offer our advice on serviceable life expectations, and roof system types, if so, requested by yourself or the Owner.

Based on observed conditions, no significant repair of the existing substrate is anticipated but can only truly be verified by removing the existing roof assembly. Latent conditions and potential damage should be anticipated during the reroof process yet cannot be quantified until roof replacement occurs. The repair of these latent conditions should be considered as part of this roof replacement project and will be included as an allowance to the project scope.

Depending on the roofing company hired to conduct the work and the availability of manpower, the project has an anticipated duration of twelve (12) to sixteen (16) weeks. It may be advisable to consider the implementation of liquidated damages if the replacement work needs to be completed within a timeframe that does not conflict with regular school operations.

In accordance with our agreement, all collateral from our field work (photos, roof plans, as-built sketches, inventory, etc.) will be uploaded to your share site for access and design usage.

Please contact me to confirm your understanding of these items or if you have any questions. We look forward to hearing back from you and working with you further on this project.

Sincerely,

Charlie Sasse

Charlie Sasse, RRO, CSI
Project Manager

Gregg Nichols, RRC, RRO
Senior Roof Consultant, Director of Technical Services

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A D D E N D U M N O. 1

Learning Center Improvements

Greensburg Community School Corporation
Greensburg, Indiana

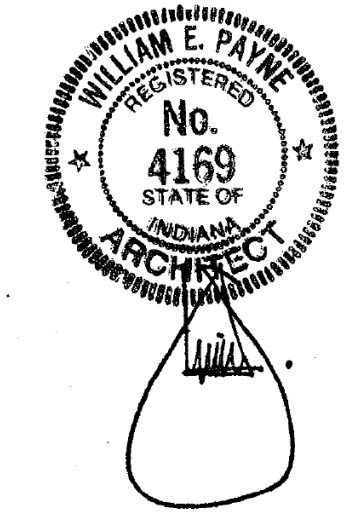
Project No. 221055.05

Index of Contents

Addendum No. 1, 2 items, 1 page
Revised Drawing Sheets: MD.01, M2.01, M2.02, and M5.01

Date: July 12, 2022

FANNING/HOWEY ASSOCIATES, INC.
ARCHITECTS/ENGINEERS/CONSULTANTS



William E. Payne, AIA
Indiana Registration No. 4169

TO: ALL BIDDERS OF RECORD

ADDENDUM NO. 1 to Drawings and Project Manual, dated May 27, 2022, for the Learning Center Improvements for Greensburg Community School Corporation, Greensburg, Indiana 47240; as prepared by Fanning/Howey Associates, Inc., Indianapolis, Indiana.
This Addendum shall hereby be and become a part of the Contract Documents the same as if originally bound thereto.

The following clarifications, amendments, additions, revisions, changes, and modifications change the original Contract Documents only in the amount and to the extent hereinafter specified in this Addendum.

Each bidder shall acknowledge receipt of this Addendum in his proposal or bid.

NOTE: Bidders are responsible for becoming familiar with every item of this Addendum. (This includes miscellaneous items at the very end of this Addendum.)

RE: ALL BIDDERS

ITEM NO. 1. ACCEPTABLE MANUFACTURERS

The following manufacturers are to be considered acceptable manufacturers (suppliers and fabricators) for the Sections of the Specifications listed. Listed manufacturers are required to bid on products equal in type and design, size, function, and quality to that originally specified. Final decision as to equality of products specified versus those proposed shall be made by the Architect.

Section 23 09 00 – 2.2 Dampers
- Pottorff

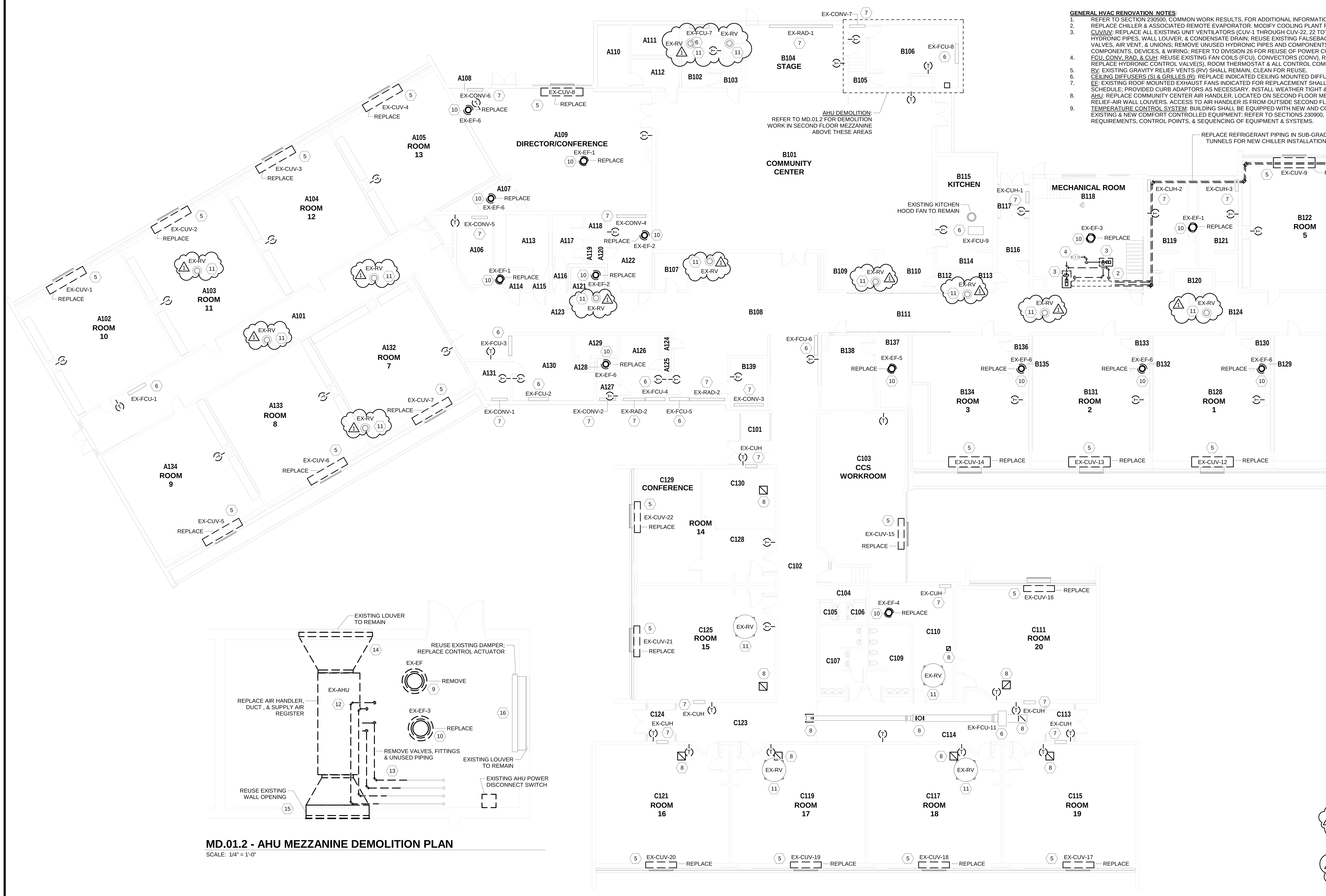
Section 23 33 00 – 2.3 Duct Silencers
- Dynasonics

Section 23 34 23 – Powered Ventilators
- PennBarry

ITEM NO. 2. REVISED DRAWING SHEETS

A. Drawing Sheets: MD.01, M2.01, M2.02, and M5.01 have been revised, dated 7/12/22 and are included with and hereby made a part of this Addendum. These Drawings supersede the original documents.

END OF ADDENDUM



MD.01.2 - AHU MEZZANINE DEMOLITION PLAN

SCALE: 1/4" = 1'-0"

MD.01.1 - HVAC DEMOLITION PLAN

SCALE: 3/32" = 1'-0"

GENERAL HVAC RENOVATION NOTES:

1. REFER TO SECTION 230500, COMMON WORK RESULTS, FOR ADDITIONAL INFORMATION & DIRECTIVES REFER TO KEY NOTES BELOW.
2. REPLACE CHILLER & ASSOCIATED REMOTE EVAPORATOR. MODIFY COOLING PLANT FOR NEW SINGLE VARIABLE-PRIMARY PUMPING SYSTEM.
3. CUV/UV: REPLACE ALL EXISTING UNIT VENTILATORS (CUV-1 THROUGH CUV-22, 22 TOTAL; REPLACED WITH UV-1 & UV-2). REUSE EXISTING HYDRONIC PIPES, WALL LOUVER, & CONDENSATE DRAIN; REUSE EXISTING FALSEBACK & DRAFTSTOP, OR REPLACE IF NECESSARY; REPLACE VALVES, AIR VENT, & UNIONS; REMOVE UNUSED HYDRONIC PIPES AND COMPONENTS; REPLACE THERMOSTAT & ALL CONTROL COMPONENTS, DEVICES, & WIRING; REFER TO DIVISION 26 FOR REUSE OF POWER COMPONENTS; REMOVE UNUSED COMPONENTS.
4. FCU, CONV, RAD, & CUH: REUSE EXISTING FAN COILS (FCU), CONVECTORS (CONV), RADIANT PANELS (RAD), & CABINET UNIT HEATERS (CUH); REPLACE HYDRONIC CONTROL VALVE(S), ROOM THERMOSTAT & ALL CONTROL COMPONENTS & DEVICES.
5. RV: EXISTING GRAVITY RELIEF VENTS (RV) SHALL REMAIN, CLEAN FOR REUSE.
6. CEILING DIFFUSERS (S) & GRILLES (R): REPLACE INDICATED CEILING MOUNTED DIFFUSERS & GRILLES.
7. EF: EXISTING ROOF MOUNTED EXHAUST FANS INDICATED FOR REPLACEMENT SHALL BE WITH A SIMILAR FAN AS IDENTIFIED IN FANS (EF) SCHEDULE; PROVIDED CURB ADAPTORS AS NECESSARY. INSTALL WEATHER TIGHT & INSULATED SHEET METAL BARRIER AT REMOVED FANS.
8. AHU: REPLACE COMMUNITY CENTER AIR HANDLER, LOCATED ON SECOND FLOOR MEZZANINE; REPLACE CONTROLS; REUSE OUTSIDE- & RELIEF-AIR WALL LOUVERS. ACCESS TO AIR HANDLER IS FROM OUTSIDE SECOND FLOOR DOUBLE-DOORS AT NORTHWEST FACING WALL.
9. TEMPERATURE CONTROL SYSTEM: BUILDING SHALL BE EQUIPPED WITH NEW AND COMPLETE TEMPERATURE CONTROL SYSTEM FOR ALL EXISTING & NEW COMFORT CONTROLLED EQUIPMENT; REFER TO SECTIONS 230900, 230993P, & 230993 FOR CONTROL COMPONENTS REQUIREMENTS, CONTROL POINTS, & SEQUENCING OF EQUIPMENT & SYSTEMS.

PLAN KEY NOTES

1. CHILLER (CHILLER) REPLACEMENT: REMOVE EXISTING CHILLER TO REPLACE WITH NEW CHILLER IDENTIFIED ON SHEET M3.01. CHILLER REMOVAL SHALL INCLUDE CHILLER, REFRIGERANT PIPING TO REMOTE EVAPORATOR, & CONTROL DEVICES. EXISTING OUTDOOR PAD, REFRIGERANT SUPPORTS, & POWER WIRING MAY BE REUSED IF COMPLIANT FOR NEW INSTALLATION CONDITIONS, OR AS OTHERWISE INSTRUCTED IN DIVISION 26 DOCUMENTS.
2. CHILLER REMOTE EVAPORATOR (CHILLER EVAP) REPLACEMENT: REMOVE EXISTING REMOTE CHILLER EVAPORATOR & REPLACE WITH NEW CHILLER EVAPORATOR IDENTIFIED ON SHEET M3.01. EXISTING EVAPORATOR REMOVAL SHALL INCLUDE EVAPORATOR, REFRIGERANT PIPING, FITTINGS, REFRIGERANT SPECIALTIES, CONTROL DEVICES & WIRING. EXISTING REFRIGERANT RELIEF VENTING MAY REMAIN FOR REUSE WITH NEW CHILLER EVAPORATOR.
3. CHILLER & CHILLED WATER SYSTEM PUMP (P) REPLACEMENT: EXISTING CHILLED WATER PUMPS SHALL NOT BE REUSED; REMOVE & REPLACE PUMPS WITH A SINGLE VARIABLE PRIMARY STYLE PUMPING SYSTEM AS IS IDENTIFIED ON SHEET M3.01. EXISTING PUMP REMOVALS SHALL INCLUDE PUMPS, UNUSED PIPE & FITTINGS, CONTROL DEVICES, POWER, & CONTROL WIRING.
4. CHILLED WATER PIPING MODIFICATIONS: TO COMPLY WITH NEW INSTALLATION CONDITIONS, REMOVE, MODIFY, & ADD TO EXISTING CHILLED WATER PIPING FOR COMPLIANCE WITH NEW INSTALLATION REQUIREMENTS. COMMON CHILLED WATER PIPING BUILDING SUPPLY CONNECTION, SYSTEM AIR SEPARATOR, CHEMICAL TREATMENT DEVICES & FITTINGS, & SYSTEM EXPANSION TANK ARE EXPECTED TO REMAIN FOR REUSE.
5. UNIT VENTILATOR (CUV) REPLACEMENT: REMOVE EXISTING UNIT VENTILATOR TO REPLACE WITH UNIT OF SAME CASING DIMENSIONS. REMOVAL SHALL INCLUDE UNIT VENTILATOR, MANUAL SHUTOFF VALVES, BALANCE VALVE, CONTROL DEVICES (VALVES, ACTUATORS, THERMOSTATS, ETC.) & CONTROL WIRING. OUTSIDE WALL LOUVER, PIPE FITTINGS & SPECIALTIES, FALSEBACK, DRAFTSTOP, & POWER WIRING MAY BE REUSED IF COMPLIANT FOR NEW INSTALLATION CONDITIONS, OR AS OTHERWISE INSTRUCTED IN DIVISION 26 DOCUMENTS.
6. FAN COIL UNIT (FCU) TO REMAIN: FAN COIL UNIT SHALL REMAIN; REPLACE CONTROL DEVICES (VALVES, ACTUATORS, THERMOSTATS, CONTROLLERS, ETC.) & WIRING. EXISTING MANUAL VALVES & BALANCING DEVICES SHALL REMAIN & SET TO CURRENT CONDITIONS; REBALANCE UNIT AT NO ADDITIONAL COST IF EXISTING BALANCING VALVE IS ALTERED.
7. HEATER (CONV, CUH, RAD) TO REMAIN: HEATER SHALL REMAIN; REPLACE CONTROL DEVICES (VALVES, ACTUATORS, THERMOSTATS, CONTROLLERS, ETC.) & WIRING. EXISTING MANUAL VALVES & BALANCING DEVICES SHALL REMAIN & SET TO CURRENT CONDITIONS; REBALANCE UNIT AT NO ADDITIONAL COST IF EXISTING BALANCING VALVE IS ALTERED.
8. CEILING MOUNTED AIR DEVICE (R,S) REPLACEMENT: REMOVE EXISTING CEILING MOUNTED CEILING AIR DEVICE WITH NEW INDICATED STYLE. REFER TO SHEETS M2.01 & M5.01 FOR ADDITIONAL DETAILS.
9. ROOF MOUNTED FAN (EF) REMOVAL: PERMANENTLY REMOVE EXISTING ROOF MOUNTED FAN, CONTROLS DEVICES, POWER & CONTROL WIRING. REFER TO SHEET M2.01; REPAIR OPENING TO MATCH ADJACENT ROOF AREA.
10. ROOF MOUNTED FAN (EF) REPLACEMENT: REMOVE EXISTING ROOF MOUNTED FAN TO REPLACE WITH NEW SIMILAR FAN. REMOVAL SHALL INCLUDE FAN & CONTROL DEVICES & WIRING. EXISTING POWER WIRING MAY BE REUSED IF COMPLIANT FOR NEW INSTALLATION CONDITIONS.
11. GRAVITY RELIEF VENT (RV) TO REMAIN: ROOF MOUNTED GRAVITY RELIEF VENT TO REMAIN. ADD CURB EXTENSION TO ALLOW 12" MINIMUM TO NEW FINISHED ROOF ELEVATION. EXISTING BACKDRAFT DAMPER SHALL BE CLEANED , OILED, FUNCTIONALLY TESTED, & REBALANCE FOR ASSURED OPERATION.
12. AIR HANDLER (AHU) REPLACEMENT: REMOVE EXISTING AIR HANDLER TO REPLACE WITH NEW AIR HANDLER IDENTIFIED ON SHEETS M2.01 & M5.01. AIR HANDLER REMOVAL SHALL INCLUDED AIR HANDLER, CONTROL DEVICES (TEMPERATURE & PRESSURE SENSORS, VALVES, DAMPERS, ACTUATORS, ETC.) & WIRING, INTAKE & DISCHARGE DUCT. EXISTING POWER WIRING MAY BE REUSED IF COMPLIANT FOR NEW INSTALLATION CONDITIONS, OR AS OTHERWISE INSTRUCTED IN DIVISION 26 DOCUMENTS.
13. AIR HANDLER (AHU) PIPING MODIFICATION: REMOVE PIPE SHUTOFF & CONTROL VALVES, PIPE & FITTINGS TO SHOWN LOCATION. REFER TO M3.01 FOR NEW PIPE, FITTINGS, & CONTROL INSTALLATION CONDITIONS. EXISTING SYSTEM MANUAL AIR VENTS SHALL BE REUSED; NEW & EXISTING PIPING SHALL BE INSULATED COMPLETELY.
14. AIR HANDLER (AHU) INTAKE REPLACEMENT: REMOVE AIR HANDLER OUTSIDE AIR DUCT, FROM UNIT TO OUTSIDE WALL. REFER TO SHEET M2.01 FOR NEW INTAKE DUCT INSTALLATION CONDITIONS. EXISTING WALL LOUVER IS EXPECTED TO REMAIN FOR REUSE.
15. AIR HANDLER (AHU) DISCHARGE REPLACEMENT: REMOVE AIR HANDLER SUPPLY AIR DUCT, FROM UNIT THROUGH WALL PENETRATION, & INCLUDED WALL MOUNTED REGISTER AT OPPOSITE FACE OF WALL. REFER TO SHEET M2.01 FOR NEW INTAKE DUCT INSTALLATION CONDITIONS.
16. REUSED WALL LOUVER & RELIEF AIR DAMPER: REMOVE DAMPER CONTROL ACTUATOR & CONTROL WIRING. REPLACE WITH NEW DAMPER & CONTROL WIRING PROVIDED BY NEW BUILDING CONTROL CONTRACTOR.

ROOM LEGEND 1

ROOM NO.	ROOM NAME	AREA (SF)
A101	CORRIDOR	1064 SF
A102	CLASSROOM	960 SF
A103	CLASSROOM	971 SF
A104	CLASSROOM	971 SF
A105	CLASSROOM	985 SF
A106	BOYS	190 SF
A107	TOILET	49 SF
A108	TOILET	37 SF
A109	DIRECTOR / CONFERENCE	1235 SF
A110	OUTSIDE STORAGE	128 SF
A111	SHOWERS	96 SF
A112	STORAGE	88 SF
A113	GIRLS	144 SF
A114	JANITOR	25 SF
A115	VESTIBULE	27 SF
A116	VESTIBULE	20 SF
A117	LOUNGE	99 SF
A118	WOMEN	32 SF
A119	CLOSET	11 SF
A120	CLOSET	12 SF
A121	MEN	50 SF
A122	CONFERENCE	216 SF
A123	CORRIDOR	798 SF
A124	CLOSET	12 SF
A125	CLOSET	12 SF
A126	PRINCIPAL	175 SF

ROOM LEGEND 2

ROOM NO.	ROOM NAME	AREA (SF)
A127	TOILET	26 SF
A128	TOILET	27 SF
A129	REST	56 SF
A130	BREAK ROOM	312 SF
A131	REST	89 SF
A132	CLASSROOM	966 SF
A133	CLASSROOM	973 SF
A134	CLASSROOM	962 SF
B101	MULTI-PURPOSE	2798 SF
B102	BOYS LOCKERS	144 SF
B103	STAIR	89 SF
B104	STAGE	423 SF
B105	STAIR	88 SF
B106	STORAGE	322 SF
B107	STORAGE	77 SF
B108	LOBBY	1247 SF
B109	ART	127 SF
B110	MUSIC	143 SF
B111	CORRIDOR	458 SF
B112	STORAGE	34 SF
B113	JANITOR	33 SF
B114	STORAGE	63 SF
B115	KITCHEN	345 SF
B116	CORRIDOR	152 SF
B117	VESTIBULE	67 SF
B118	MECHANICAL ROOM	783 SF

ROOM LEGEND 3

ROOM NO.	ROOM NAME	AREA (SF)
B119	BOYS	252 SF
B120	CUSTODIAN	46 SF
B121	GIRLS	235 SF
B122	CLASSROOM	956 SF
B123	CLASSROOM	1026 SF
B124	CORRIDOR	1141 SF
B125	CLASSROOM	1222 SF
B126	TOILET	21 SF
B127	TOILET	18 SF
B128	CLASSROOM	961 SF
B129	TOILET	21 SF
B130	TOILET	18 SF
B131	CLASSROOM	961 SF
B132	TOILET	21 SF
B133	TOILET	18 SF
B134	CLASSROOM	952 SF
B135	TOILET	21 SF
B136	TOILET	16 SF
B137	WORKROOM	147 SF
B138	CATALOG	246 SF
B139	STORAGE	117 SF
C101	VESTIBULE	101 SF
C102	CORRIDOR	821 SF
C103	WORKROOM	919 SF
C104	PASSAGE	46 SF
C105	WOMEN	25 SF

ROOM LEGEND 4

ROOM NO.	ROOM NAME	AREA (SF)
C106	MEN	25 SF
C107	BOYS	160 SF
C108	JANITOR	31 SF
C109	GIRLS	176 SF
C110	STORAGE	400 SF
C111	CLASSROOM	1000 SF
C112	CLOSET	13 SF
C113	VESTIBULE	71 SF
C114	CORRIDOR	676 SF
C115	CLASSROOM	1023 SF
C116	CLOSET	11 SF
C117	CLASSROOM	1021 SF
C118	CLOSET	11 SF
C119	CLASSROOM	1032 SF
C120	CLOSET	11 SF
C121	CLASSROOM	1024 SF
C122	CLOSET	11 SF
C123	CORRIDOR	389 SF
C124	VESTIBULE	71 SF
C125	CLASSROOM	999 SF
C126	CLOSET	13 SF
C127	CLOSET	13 SF
C128	OFFICE	213 SF
C129	CONFERENCE	488 SF
C130	OFFICE	280 SF

VERIFICATION NOTE

CONTRACTOR SHALL CONTINUALLY FIELD VERIFY ALL DIMENSIONS, CONNECTIONS, & CLEARANCES AS THESE CONDITIONS BECOME PRESENT DURING CONSTRUCTION PROCESS. DO NOT ASSUME ACCESS WAS AVAILABLE DURING DESIGN PROCESS. COMMENCEMENT OF WORK CONSTITUTES ACCEPTANCE OF CONDITIONS.

SHOULD DIFFERENT CONDITIONS BE ENCOUNTERED, CONTACT PROJECT ARCHITECT/ENGINEER FOR CLARIFICATION BEFORE PROCEEDING WITH WORK.

Learning Center Improvements

422 East Central Avenue, Greensburg, Indiana 47240

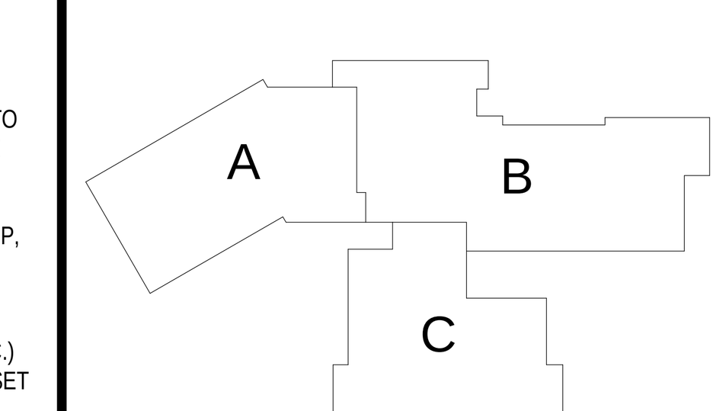
Greensburg Community Schools

ARCHITECT

FANNING HOWEY

317-848-0966 WWW.FHAI.COM

KEY PLAN



Project Status

MARK Z. HOPF REGISTERED No. PE 12000601 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWN BY: DDP

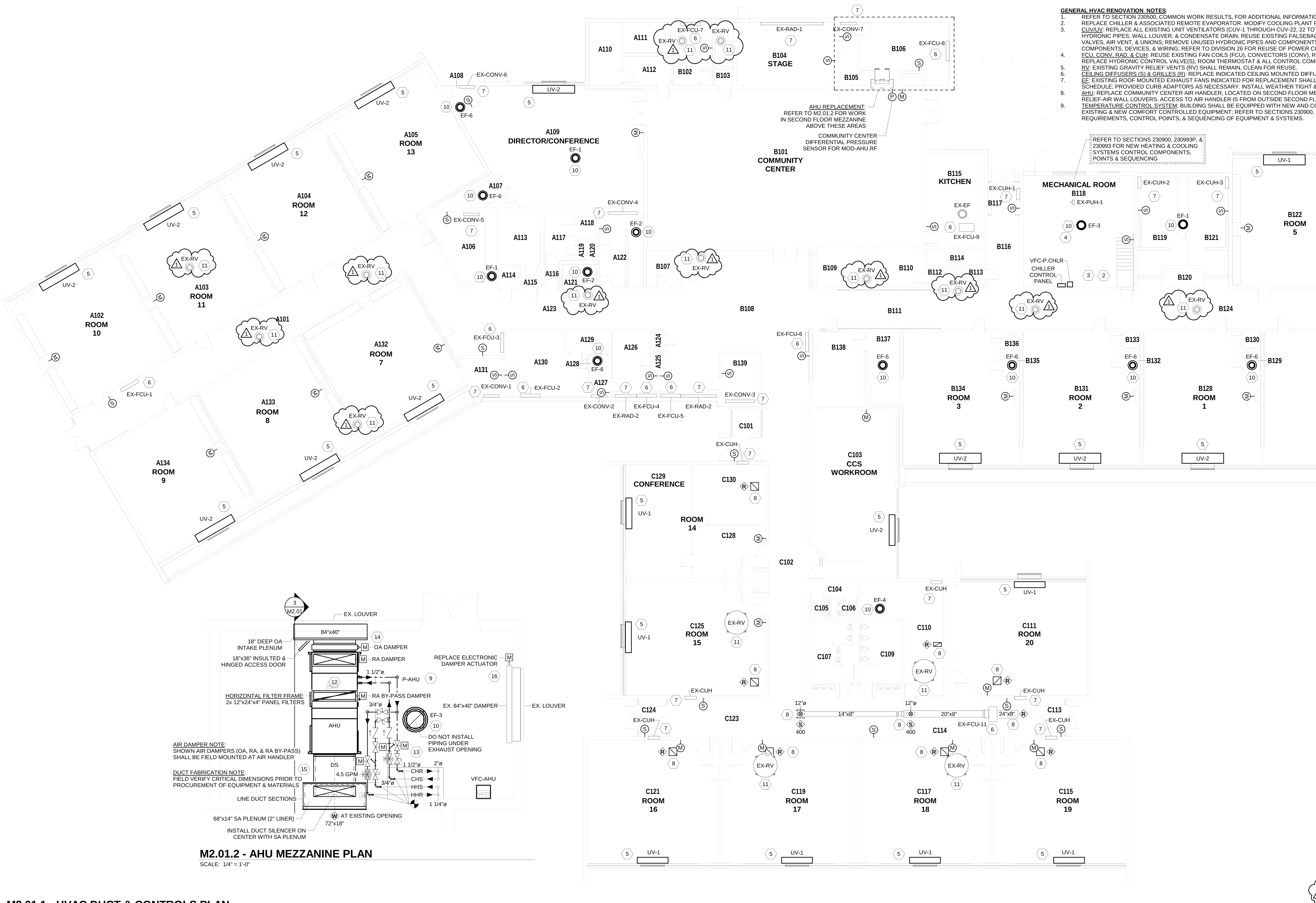
PROJECT NUMBER: 221055.05

PROJECT ISSUE DATE: MAY 27, 2022

REV. NO.	DESCRIPTION	DATE
1	ADDENDUM 01	7/12/22

HVAC DEMOLITION PLAN

MD.01



GENERAL HVAC RENOVATION NOTES:

1. REFER TO SECTION 230500, COMMON WORK RESULTS, FOR ADDITIONAL INFORMATION & DIRECTIVES REFER TO KEY NOTES BELOW.
2. REPLACE CHILLER & ASSOCIATED REMOTE EVAPORATOR. MODIFY COOLING PLANT FOR NEW SINGLE VARIABLE-PRIMARY PUMPING SYSTEM.
3. CUV/UV: REPLACE ALL EXISTING UNIT VENTILATORS (CUV-1 THROUGH CUV-22, 22 TOTAL; REPLACED WITH UV-1 & UV-2). REUSE EXISTING HYDRONIC PIPES, WALL LOUVER, & CONDENSATE DRAIN; REUSE EXISTING FALSEBACK & DRAFTSTOP, OR REPLACE IF NECESSARY; REPLACE VALVES, AIR VENT, & UNIONS; REMOVE UNUSED HYDRONIC PIPES AND COMPONENTS; REPLACE THERMOSTAT & ALL CONTROL COMPONENTS, DEVICES, & WIRING; REFER TO DIVISION 26 FOR REUSE OF POWER COMPONENTS; REMOVE UNUSED COMPONENTS.
4. FCU, CONV, RAD, & CUH: REUSE EXISTING FAN COILS (FCU), CONVECTORS (CONV), RADIANT PANELS (RAD), & CABINET UNIT HEATERS (CUH); REPLACE HYDRONIC CONTROL VALVE(S), ROOM THERMOSTAT & ALL CONTROL COMPONENTS & DEVICES.
5. RV: EXISTING GRAVITY RELIEF VENTS (RV) SHALL REMAIN, CLEAN FOR REUSE.
6. CEILING DIFFUSERS (S) & GRILLES (R): REPLACE INDICATED CEILING MOUNTED DIFFUSERS & GRILLES.
7. EF: EXISTING ROOF MOUNTED EXHAUST FANS INDICATED FOR REPLACEMENT SHALL BE WITH A SIMILAR FAN AS IDENTIFIED IN FANS (EF) SCHEDULE; PROVIDED CURB ADAPTORS AS NECESSARY. INSTALL WEATHER TIGHT & INSULATED SHEET METAL BARRIER AT REMOVED FANS.
8. AHU: REPLACE COMMUNITY CENTER AIR HANDLER, LOCATED ON SECOND FLOOR MEZZANINE; REPLACE CONTROLS; REUSE OUTSIDE- & RELIEF-AIR WALL LOUVERS. ACCESS TO AIR HANDLER IS FROM OUTSIDE SECOND FLOOR DOUBLE-DOORS AT NORTHWEST FACING WALL.
9. TEMPERATURE CONTROL SYSTEM: BUILDING SHALL BE EQUIPPED WITH NEW AND COMPLETE TEMPERATURE CONTROL SYSTEM FOR ALL EXISTING & NEW COMFORT CONTROLLED EQUIPMENT; REFER TO SECTIONS 230900, 230993P, & 230993 FOR CONTROL COMPONENTS REQUIREMENTS, CONTROL POINTS, & SEQUENCING OF EQUIPMENT & SYSTEMS.

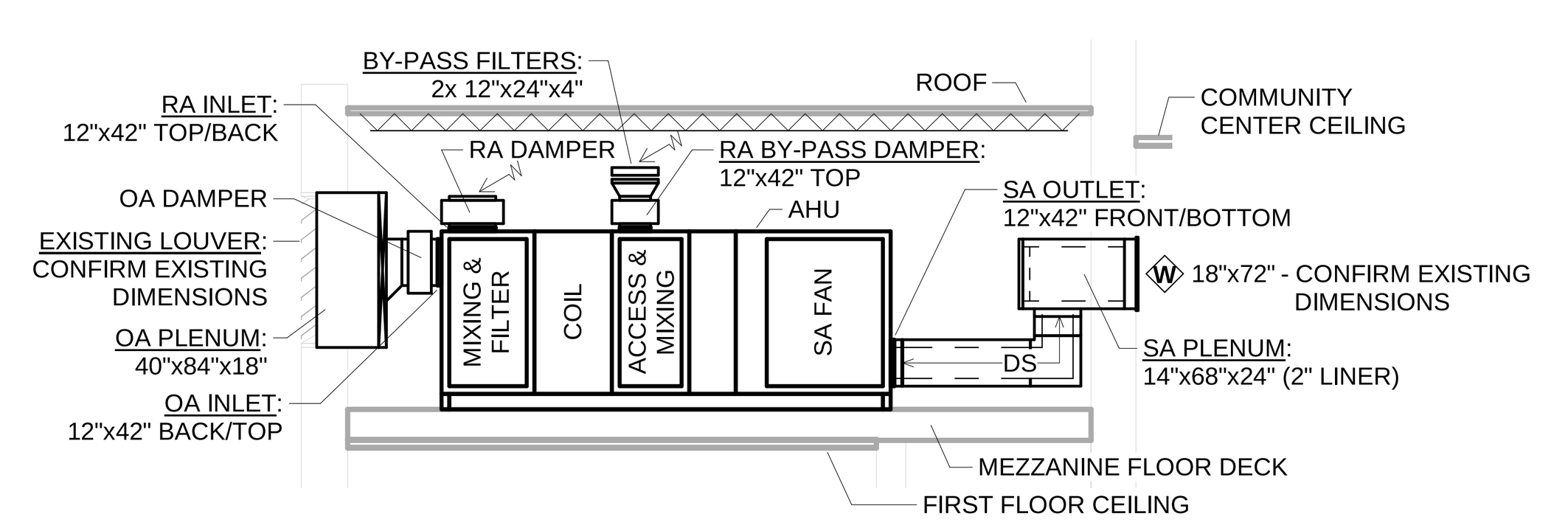
REFER TO SECTIONS 230900, 230993P, & 230993 FOR NEW HEATING & COOLING SYSTEMS CONTROL COMPONENTS, POINTS & SEQUENCING

M2.01.2 - AHU MEZZANINE PLAN

SCALE: 1/4" = 1'-0"

M2.01.1 - HVAC DUCT & CONTROLS PLAN

SCALE: 3/32" = 1'-0"



M2.01.3 - AHU ELEVATION

SCALE: 1/4" = 1'-0"

ROOM LEGEND 1		
ROOM NO.	ROOM NAME	AREA (SF)
A101	CORRIDOR	1064 SF
A102	CLASSROOM	960 SF
A103	CLASSROOM	971 SF
A104	CLASSROOM	971 SF
A105	CLASSROOM	985 SF
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A107	TOILET	49 SF
A108	TOILET	37 SF
A109	DIRECTOR / CONFERENCE	1235 SF
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ROOM LEGEND 2		
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A127	TOILET	26 SF
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ROOM LEGEND 3		
ROOM NO.	ROOM NAME	AREA (SF)
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B120	CUSTODIAN	46 SF
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ROOM NO.	ROOM NAME	AREA (SF)
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C125	CLASSROOM	999 SF
C126	CLOSET	13 SF
C127	CLOSET	13 SF
C128	OFFICE	213 SF
C129	CONFERENCE	488 SF
C130	OFFICE	280 SF

PLAN KEY NOTES

1. CHILLER (CHILLER) REPLACEMENT: REFER TO M3.01, M5.01, SECTION 237313, & SELECTED MANUFACTURER'S INSTALLATION MANUAL & PRODUCT DOCUMENTATION; NEW CHILLER SHALL BE SET ATOP EXISTING PAD WITH NEW VIBRATION ISOLATORS. REFER TO DIVISION 26 DOCUMENTS FOR POWER INSTALLATION REQUIREMENTS. REFER TO SECTIONS 230993P & 230993 FOR CONTROL POINTS & SEQUENCING.
2. CHILLER REMOTE EVAPORATOR (CHILLER EVAP) REPLACEMENT: REFER TO M3.01, M5.01, SECTION 237313, & SELECTED CHILLER MANUFACTURER'S INSTALLATION MANUAL & PRODUCT DOCUMENTATION; REPLACE REMOTE CHILLER EVAPORATOR. REFER TO SECTIONS 230993P & 230993 FOR CONTROL POINTS & SEQUENCING.
3. CHILLER & CHILLED WATER SYSTEM PUMP (P) REPLACEMENT: REFER TO M3.01, M5.01, & SECTION 232123; INSTALL NEW CHILLED WATER SYSTEM PUMP IN VERTICAL PIPE TO REMOTE EVAPORATOR (UPSTREAM SIDE OF EVAPORATOR). REFER TO SECTIONS 230993P & 230993 FOR CONTROL POINTS & SEQUENCING.
4. CHILLED WATER PIPING MODIFICATIONS: REFER TO M3.01 & M5.01; MODIFY CHILLED WATER PIPING TO ACCOMMODATE NEW REMOTE CHILLER EVAPORATOR. RECONNECT TO COMMON CHILLED WATER PIPING BUILDING SUPPLY CONNECTION DOWNSTREAM OF EXISTING REMOVED CHILLED WATER BUILDING PUMP. EXISTING CHILLED WATER SYSTEM AIR SEPARATOR & SYSTEM EXPANSION TANK SHALL REMAIN.
5. UNIT VENTILATOR (UV) REPLACEMENT: REFER TO M3.01 & M5.01, SECTION 238219, & SELECTED CHILLER MANUFACTURER'S INSTALLATION MANUAL & PRODUCT DOCUMENTATION; REPLACE UNIT VENTILATOR; CONTRACTOR & EQUIPMENT REPRESENTATIVE ARE RESPONSIBLE TO FIELD MEASURE EACH UNIT FOR PROCUREMENT OF NEW UNITS OF IDENTICAL CASING DIMENSIONS. OUTSIDE WALL LOUVER, CONDENSATE PIPING, HEATING & COOLING PIPE & FITTINGS SHALL BE RECONNECTED TO NEW UNITS. FALSEBACK & DRAFTSTOP MAY BE REUSED IF COMPLIANT WITH NEW UNIT INSTALLATION CONDITIONS, OTHERWISE NEW FALSEBACK & DRAFTSTOP MATERIALS SHALL BE PROCURED. NEW UNIT VENTILATORS FINISH SHALL MATCH EXISTING UNIT VENTILATORS, CASEWORK, & DRAFTSTOP FINISH. INSTALL NEW UNIT SHUTOFF VALVES & MANUAL BALANCE MULTIPURPOSE VALVES, MULTIPURPOSE VENT & CONTROL VALVES AS SHOWN ON M5.01. DIVISION 23 CONTROLS CONTRACTOR IS RESPONSIBLE FOR NEW HEATING & COOLING CONTROL VALVES, VALVE & DAMPER ACTUATORS, MULTI-SENSOR ROOM THERMOSTAT, UNIT CONTROLLER, & WIRING. REFER TO SECTIONS 230993P & 230993 FOR UNIT CONTROL POINTS & SEQUENCING.
6. FAN COIL UNIT (FCU) TO REMAIN: REFER TO M3.01 & M5.01; UNIT SHALL REMAIN, BUT UPGRADED WITH NEW CONTROLS; REPLACE CONTROL DEVICES (HEATING & COOLING VALVES, ACTUATORS, TEMPERATURE SENSOR, UNIT CONTROLLER, ETC.) & WIRING. REFER TO SECTIONS 230993P & 230993 FOR UNIT CONTROL POINTS & SEQUENCING.
7. HEATER (CONV, CUH, RAD) TO REMAIN: REFER TO M3.01 & M5.01; UNIT SHALL REMAIN, BUT UPGRADED WITH NEW CONTROLS; REPLACE CONTROL DEVICES (HEATING VALVE, ACTUATOR, TEMPERATURE SENSOR, UNIT CONTROLLER, ETC.) & WIRING. REFER TO SECTIONS 230993P & 230993 FOR UNIT CONTROL POINTS & SEQUENCING.
8. CEILING MOUNTED AIR DEVICE (R,S) REPLACEMENT: REFER TO M5.01 & SECTION 237313 FOR DEVICE REQUIREMENTS. REPLACE AIR DEVICES WITHOUT ADJUSTMENT TO EXISTING BALANCING DEVICE POSITION & SETTING; BALANCING IS REQUIRED IF EXISTING BALANCING DEVICE IS ALTERED. CONTRACTOR SHALL FIELD VERIFY EXITING CONDITIONS PRIOR TO MATERIAL PROCUREMENTS TO CONFIRM EXISTING CONNECTION SIZES & MATERIAL QUANTITIES; FOR SUPPLY AIR DIFFUSERS, CONTRACTOR SHALL REPLACE AIR DEVICE & EXISTING FLEXIBLE DUCT. FIELD VERIFY ALL INSTALLATION CONDITIONS PRIOR TO COMMENCEMENT OF WORK.
9. ROOF MOUNTED FAN (EF) REMOVAL: ALSO REFER TO MD.01; REPAIR OPENING TO MATCH ADJACENT ROOF AREA.
10. ROOF MOUNTED FAN (EF) REPLACEMENT: ALSO REFER TO M2.02, SECTION 233423, & SELECTED MANUFACTURER'S INSTALLATION MANUAL & PRODUCT DOCUMENTATION; REPLACE ROOF MOUNTED FAN. EXISTING POWER WIRING MAY BE REUSED IF COMPLIANT FOR NEW INSTALLATION CONDITIONS. REFER TO SECTIONS 230993P & 230993 FOR UNIT CONTROL POINTS & SEQUENCING.
11. GRAVITY RELIEF VENT (RV) TO REMAIN: ALSO REFER TO M2.02, ROOF MOUNTED GRAVITY RELIEF VENT TO REMAIN. ADD CURB EXTENSION TO ALLOW 12" MINIMUM TO NEW FINISHED ROOF ELEVATION. EXISTING BACKDRAFT DAMPER SHALL BE CLEANED, OILED, TESTED, & ADJUSTED FOR ASSURED OPERATION.
12. AIR HANDLER (AHU) REPLACEMENT: REFER TO M5.01, SECTION 237313, & SELECTED MANUFACTURER'S INSTALLATION MANUAL & PRODUCT DOCUMENTATION; REPLACE EXISTING REMOVED AIR HANDLER AS SHOWN & DESCRIBED. DIVISION 23 CONTROLS CONTRACTOR SHALL PROVIDE NEW UNIT CONTROLLER, MULTI-SENSOR ROOM THERMOSTAT, OUTSIDE- & RETURN-AIR DAMPERS; 3 TOTAL, VALVE & DAMPER ACTUATORS, WIRING, & ETC. REFER TO SECTIONS 230993P & 230993 FOR UNIT CONTROL POINTS & SEQUENCING. FIELD VERIFY ALL INSTALLATION CONDITIONS PRIOR TO COMMENCEMENT OF WORK.
13. AIR HANDLER (AHU) PIPING MODIFICATION: REFER TO M3.01 & M5.01 AHU - COIL PIPING DETAIL. EXISTING SYSTEM MANUAL AIR VENTS SHALL BE REUSED; NEW & EXISTING PIPING SHALL BE INSULATED COMPLETELY. DIVISION 23 CONTROLS CONTRACTOR SHALL PROVIDE NEW HEATING & COOLING VALVES, ACTUATORS, WIRING, & ETC. REFER TO SECTIONS 230993P & 230993 FOR UNIT CONTROL POINTS & SEQUENCING.
14. AIR HANDLER (AHU) INTAKE REPLACEMENT: REFER TO ELEVATION DETAIL. EXISTING WALL LOUVER SHALL REMAIN. INSTALL NEW INTAKE PLENUM AT BACKSIDE OF LOUVER AS SHOWN. PROVIDE ACCESS INTO PLENUM FOR ROUTINE INSPECTION & REMOVAL OF DEBRIS. FIELD VERIFY ALL INSTALLATION CONDITIONS PRIOR TO COMMENCEMENT OF WORK.
15. AIR HANDLER (AHU) DISCHARGE REPLACEMENT: REFER TO ELEVATION DETAIL. INSTALL DUCT SILENCER (DS) & SHOWN NEW WALL MOUNTED REGISTER. FIELD VERIFY ALL INSTALLATION CONDITIONS PRIOR TO COMMENCEMENT OF WORK.
16. REUSE WALL LOUVER & RELIEF-AIR DAMPER: INSTALL NEW DAMPER ACTUATOR & CONTROL WIRING. REFER TO SECTIONS 230993P & 230993 FOR UNIT CONTROL POINTS & SEQUENCING.

VERIFICATION NOTE

CONTRACTOR SHALL CONTINUALLY FIELD VERIFY ALL DIMENSIONS, CONNECTIONS, & CLEARANCES AS THESE CONDITIONS BECOME PRESENT DURING CONSTRUCTION PROCESS. DO NOT ASSUME ACCESS WAS AVAILABLE DURING DESIGN PROCESS. COMMENCEMENT OF WORK CONSTITUTES ACCEPTANCE OF CONDITIONS.

SHOULD DIFFERENT CONDITIONS BE ENCOUNTERED, CONTACT PROJECT ARCHITECT/ENGINEER FOR CLARIFICATION BEFORE PROCEEDING WITH WORK.

Learning Center Improvements

422 East Central Avenue, Greensburg, Indiana 47240

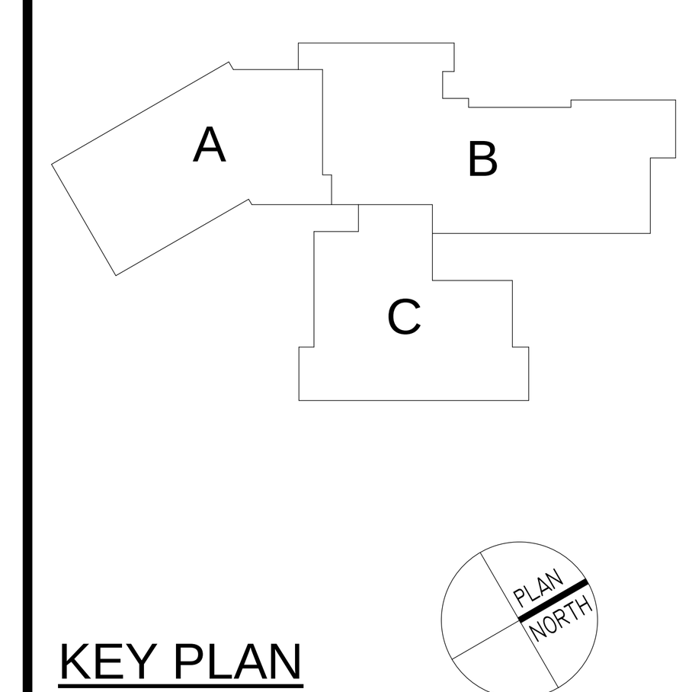
Greensburg Community Schools

ARCHITECT

FANNING HOWEY

317-848-0966 WWW.FHAI.COM

KEY PLAN



Project Status

DRAWN BY: DDP

PROJECT NUMBER: 221055.05

PROJECT ISSUE DATE: MAY 27, 2022

REV. NO.	DESCRIPTION	DATE
1	ADDENDUM 01	7/12/22

HVAC DUCT & CONTROLS PLAN

M2.01

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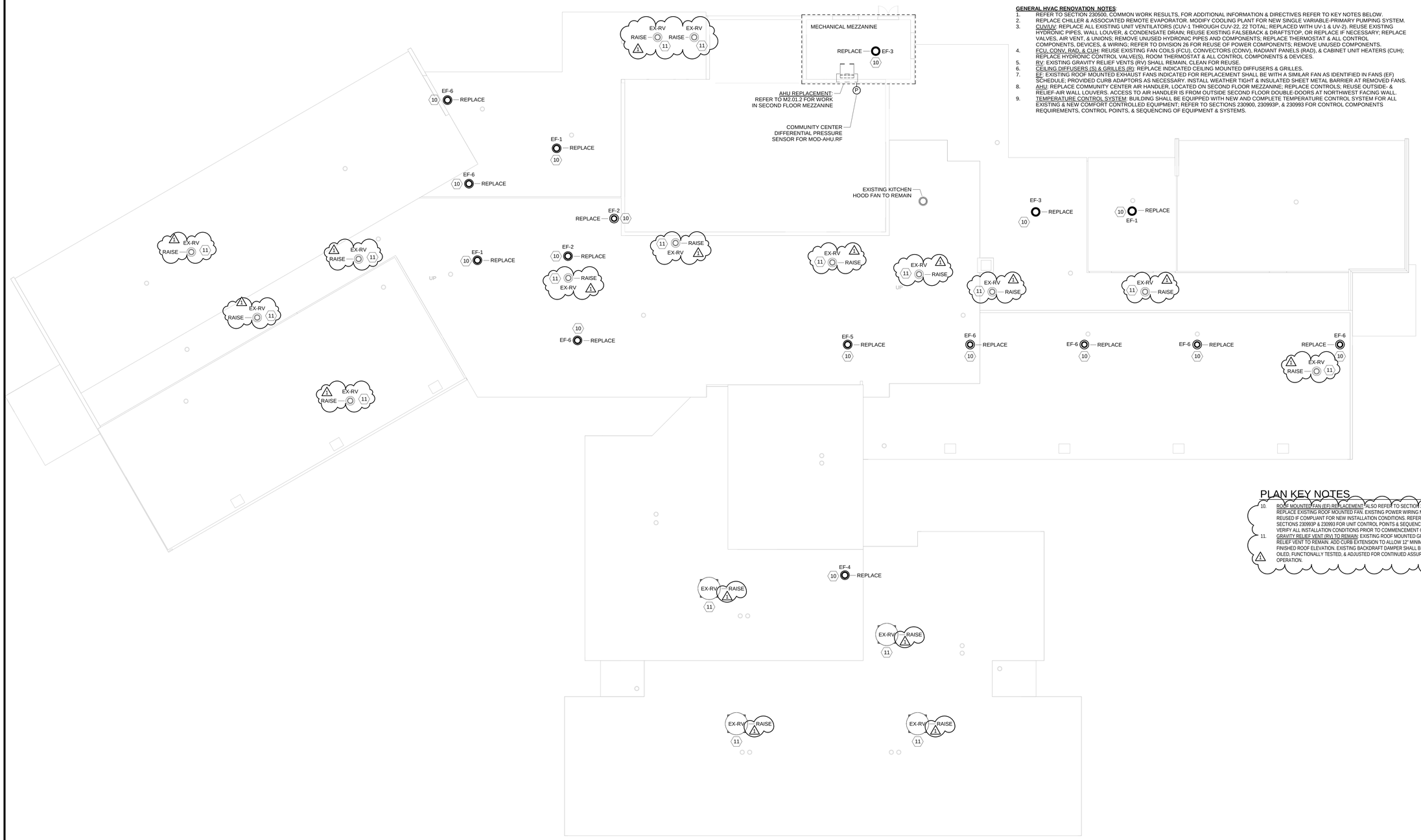


GENERAL HVAC RENOVATION NOTES:

1. REFER TO SECTION 230500, COMMON WORK RESULTS, FOR ADDITIONAL INFORMATION & DIRECTIVES REFER TO KEY NOTES BELOW.
2. REPLACE CHILLER & ASSOCIATED REMOTE EVAPORATOR. MODIFY COOLING PLANT FOR NEW SINGLE VARIABLE-PRIMARY PUMPING SYSTEM.
3. CUV/UV: REPLACE ALL EXISTING UNIT VENTILATORS (CUV-1 THROUGH CUV-22, 22 TOTAL; REPLACED WITH UV-1 & UV-2). REUSE EXISTING HYDRONIC PIPES, WALL LOUVER, & CONDENSATE DRAIN; REUSE EXISTING FALSEBACK & DRAFTSTOP, OR REPLACE IF NECESSARY; REPLACE VALVES, AIR VENT, & UNIONS; REMOVE UNUSED HYDRONIC PIPES AND COMPONENTS; REPLACE THERMOSTAT & ALL CONTROL COMPONENTS, DEVICES, & WIRING; REFER TO DIVISION 26 FOR REUSE OF POWER COMPONENTS; REMOVE UNUSED COMPONENTS.
4. FCU, CONV, RAD, & CUH: REUSE EXISTING FAN COILS (FCU), CONVECTORS (CONV), RADIANT PANELS (RAD), & CABINET UNIT HEATERS (CUH); REPLACE HYDRONIC CONTROL VALVE(S), ROOM THERMOSTAT & ALL CONTROL COMPONENTS & DEVICES.
5. RV: EXISTING GRAVITY RELIEF VENTS (RV) SHALL REMAIN, CLEAN FOR REUSE.
6. CEILING DIFFUSERS (S) & GRILLES (R): REPLACE INDICATED CEILING MOUNTED DIFFUSERS & GRILLES.
7. EF: EXISTING ROOF MOUNTED EXHAUST FANS INDICATED FOR REPLACEMENT SHALL BE WITH A SIMILAR FAN AS IDENTIFIED IN FANS (EF) SCHEDULE; PROVIDED CURB ADAPTORS AS NECESSARY. INSTALL WEATHER TIGHT & INSULATED SHEET METAL BARRIER AT REMOVED FANS.
8. AHU: REPLACE COMMUNITY CENTER AIR HANDLER, LOCATED ON SECOND FLOOR MEZZANINE; REPLACE CONTROLS; REUSE OUTSIDE- & RELIEF-AIR WALL LOUVERS. ACCESS TO AIR HANDLER IS FROM OUTSIDE SECOND FLOOR DOUBLE-DOORS AT NORTHWEST FACING WALL.
9. TEMPERATURE CONTROL SYSTEM: BUILDING SHALL BE EQUIPPED WITH NEW AND COMPLETE TEMPERATURE CONTROL SYSTEM FOR ALL EXISTING & NEW COMFORT CONTROLLED EQUIPMENT; REFER TO SECTIONS 230900, 230993P, & 230993 FOR CONTROL COMPONENTS REQUIREMENTS, CONTROL POINTS, & SEQUENCING OF EQUIPMENT & SYSTEMS.

PLAN KEY NOTES

10. ROOF MOUNTED FAN (EF) REPLACEMENT: ALSO REFER TO SECTION 233423; REPLACE EXISTING ROOF MOUNTED FAN. EXISTING POWER WIRING MAY BE REUSED IF COMPLIANT FOR NEW INSTALLATION CONDITIONS. REFER TO SECTIONS 230993P & 230993 FOR UNIT CONTROL POINTS & SEQUENCING. FIELD VERIFY ALL INSTALLATION CONDITIONS PRIOR TO COMMENCEMENT OF WORK.
11. GRAVITY RELIEF VENT (RV) TO REMAIN: EXISTING ROOF MOUNTED GRAVITY RELIEF VENT TO REMAIN. ADD CURB EXTENSION TO ALLOW 12" MINIMUM TO NEW FINISHED ROOF ELEVATION. EXISTING BACKDRAFT DAMPER SHALL BE CLEANED, OILED, FUNCTIONALLY TESTED, & ADJUSTED FOR CONTINUED ASSURED OPERATION.

M2.02.1 - 2ND FLR & ROOF - HVAC DUCT PLAN

SCALE: 3/32" = 1'-0"

VERIFICATION NOTE

CONTRACTOR SHALL CONTINUALLY FIELD VERIFY ALL DIMENSIONS, CONNECTIONS, & CLEARANCES AS THESE CONDITIONS BECOME PRESENT DURING CONSTRUCTION PROCESS. DO NOT ASSUME ACCESS WAS AVAILABLE DURING DESIGN PROCESS. COMMENCEMENT OF WORK CONSTITUTES ACCEPTANCE OF CONDITIONS.

SHOULD DIFFERENT CONDITIONS BE ENCOUNTERED, CONTACT PROJECT ARCHITECT/ENGINEER FOR CLARIFICATION BEFORE PROCEEDING WITH WORK.

Learning Center Improvements

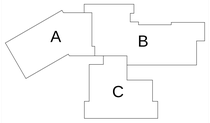
422 East Central Avenue, Greensburg, Indiana 47240

Greensburg Community Schools

ARCHITECT

FANNING HOWEY

317-848-0966 WWW.FHAI.COM



KEY PLAN

Project Status

MARK Z. HOPP
REGISTERED
NO.
PE 12000201
STATE OF
INDIANA
PROFESSIONAL ENGINEER

DRAWN BY: DDP

PROJECT NUMBER: 221055.05

PROJECT ISSUE DATE: MAY 27, 2022

REV. NO.	DESCRIPTION	DATE
1	ADDENDUM 01	7/12/22

HVAC ROOF PLAN

M2.02

FAN SCHEDULE

TAG	FAN TYPE	CFM (MIN / MAX)	RPM (MAX)	ESP (MAX)	SOUND (INLET)	DRIVE	WEIGHT (LBS)	ELECTRICAL BHP / HP	ELECTRICAL SERVICE	NOTES
EF-1 (3)	ROOF DOWNBLAST	680 / 680	1,725	0.125"	54 dBA	DIRECT	20	0.05 / 0.17	120 / 1 / 60	1,2
EF-2 (2)	ROOF DOWNBLAST	280 / 280	1,725	0.125"	45 dBA	DIRECT	15	0.02 / 0.04	120 / 1 / 60	1,2
EF-3	ROOF DOWNBLAST	1,120 / 1,120	1,725	0.125"	62 dBA	DIRECT	50	0.17 / 0.25	120 / 1 / 60	1,2
EF-4	ROOF DOWNBLAST	460 / 460	1,725	0.375"	51 dBA	DIRECT	40	0.07 / 0.17	120 / 1 / 60	1
EF-5	ROOF DOWNBLAST	300 / 300	1,725	0.375"	49 dBA	DIRECT	20	0.04 / 0.10	120 / 1 / 60	1
EF-6 (7)	ROOF DOWNBLAST	150 /150	1,725	0.375"	46 dBA	DIRECT	15	0.02 / 0.07	120 / 1 / 60	1,2

NOTES

1. REFER TO SECTION 233423 FOR ADDITIONAL DETAILS & SECTION 230993 FOR CONTROL REQUIREMENTS.
2. MULTIPLE UNITS EXIST w/DESIGNATION: REFER TO PROJECT DRAWINGS FOR LOCATIONS; INSTALLATION TAG w/EF-(ROOM) DESIGNATION.

AIR-HANDLER SCHEDULE

TAG	AIR HANDLER TYPE	UNIT AIR FLOW PERFORMANCE (CFM) MIN SA FLOW	MAX SA FLOW	MIN OA FLOW	OCCUPIED OA FLOW	MAX OA FLOW	SUPPLY-AIR (SA) FAN TYPE	SIZE	ESP	ELECTRICAL BHP/HP	RPM	HZ	SERVICE	UNIT DISCHARGE SOUND POWER (dB) 63	125	250	500	1K	2K	4K	8K	MAIN COIL - COOLING (WATER) EAT DB/WB	LAT DB/WB	GPM	EWT/LWT	MAX VELOCITY	ROW	FINS INCH	APD	WPD	MAIN COIL - HEATING (WATER) EAT	LAT	GPM	EWT/LWT	ROW	FINS INCH	APD	WPD	SA FILTER ASSEMBLY TYPE	DEPTH	MERV	AREA (SQFT)	AVG APD	UNIT PHYSICAL PARAMETERS WEIGHT (LBS)	DIMENSIONS WIDTH	HEIGHT	LENGTH	NOTES
AHU	MODULAR	1,600	3,200	0	800	3,200	PL	16"	1.0"	1.7 / 3.0	1,800	70	208 / 3 / 60	74	77	83	78	77	78	76	67	82°/ 68°	52°/ 51.4°	28	44°/ 55.5°	430	6	12	0.32	12'	50°	102°	3	180°/ 57.7°	6	12	0.19	1'	PLEAT	4"	13	11.0	0.55"	2,000	50"	38"+2.5"	116"	1,2,3,4

NOTES

1. REFER TO SECTIONS 237313, 230900, 230993 & AIR HANDLER ELEVATIONS FOR ADDITIONAL PRODUCT & INSTALLATION DETAILS. UNIT SELECTION SHALL BE CONFIGURED AS IDENTIFIED BY PROJECT DOCUMENTS AT OR BELOW LISTED BRAKE FAN MOTOR HORSEPOWER(S).
2. AIR-HANDLER UNIT SHALL BE INSTALLED WITH SUPPLY & RETURN AIR SMOKE DETECTORS, UNITS SHALL BE PROVIDED & INSTALLED BY DIV 26 CONTRACTOR.
3. EQUIPPED WITH RA BY-PASS OPENING, AT TOP OF CASING DOWNSTREAM OF COIL.
4. AIR-HANDLER SHALL BE EQUIPPED WITH A SHORT CIRCUIT CURRENT RATED (SCCR) PROTECTION DEVICE WITH A 10kA RATING.

CONTROL DAMPER SCHEDULE

TAG	THROAT CFM	SIZE	FREE AREA	VELOCITY	APD	NOTES
MOD-AHU.BA	800	42"x8"	1.24	650	0.10	1
MOD-AHU.RA	3,200	42"x12"	2.15	1,490	0.15	1
MOD-AHU.OA	3,200	42"x12"	2.15	1,490	0.15	1

NOTES

1. REFER TO SPECIFICATION SECTIONS 230900 FOR ADDITIONAL DETAILS & SECTION 230993 FOR CONTROL REQUIREMENTS.

AIR DEVICE SCHEDULE

/ 400*

= AIR DEVICE TAG (REFER TO DEVICE SCHEDULE)
* - NOTATION REFERS TO BALANCED AIR FLOW RATE

TAG	PHYSICAL PARAMETERS LENGTH (INCH)	WIDTH (INCH)	HEIGHT (INCH)	AREA (SQ.FT.)	SLOTS	PERFORMANCE NECK SIZE	FLOW (CFM)	NC VALUE	NOTES
S	24	24	--	4.0	--	12"	620	25	1,2,3
R	24	12	--	1.8	--	22"x10"	1,080	25	1,2,3
	24	24	--	3.6	--	22"x22"	2,160	25	1,2,3
W	--	72	18	7.0	--	72"x18"	3,200	20	1,2,3

NOTES:

1. REFER TO SECTION 233713 FOR ADDITIONAL DETAILS.
2. UNLESS OTHERWISE NOTED, NECK SIZE SHALL BE EQUAL TO CONNECTING DUCT SIZE; INSTALL DUCT TRANSITION FITTINGS AS NECESSARY. SINGLE DIMENSIONS ARE FOR ROUND NECK SIZES.
3. REFER TO CONSTRUCTION DRAWINGS FOR SPECIFIC AIR DEVICE FLOW RATES.

UNIT VENTILATOR SCHEDULE

TAG	UNIT TYPE	NOMINAL UNIT PERFORMANCE MAX SA	MIN SA	MAX OA	MIN OA	ESP	HP	SERVICE	MAIN COIL - COOLING PERFORMANCE (100% WATER) SA	EAT-DB/WB	LAT-DB/WB	GPM	EWT / LWT	W.PD	ROWS	PREHEAT COIL - HEATING PERFORMANCE (100% WATER) SA	EAT / LAT	GPM	EWT / LWT	W.PD	ROWS	FILTER	NOTES
UV-1 (9)	HORIZONTAL; TRANE 125	1,130 CFM	400 CFM	1,130 CFM	400 CFM	0.0"	0.25 HP	120/60/1	1,130 CFM	80°/ 68°	58.3°/ 55.7°	9	44° / (53.9°)	10'	4	1,130 CFM	50°/ 97°	2.5	180° / (134°)	4'	1	MERV 13	1,2,3,4
UV-2 (13)	HORIZONTAL; TRANE 150	1,280 CFM	400 CFM	1,280 CFM	400 CFM	0.0"	0.25 HP	120/60/1	1,280 CFM	80°/ 68°	58.4°/ 55.0°	9	44° / (55.8°)	6'	4	1,280 CFM	50°/ 98°	2.5	180° / (126°)	4'	1	MERV 13	1,2,3,4

NOTES

1. REFER TO SPECIFICATION SECTIONS 238223 FOR ADDITIONAL PRODUCT & INSTALLATION DETAILS & SECTION 230993 FOR CONTROL REQUIREMENTS; DESIGN BASIS IS INTENDED TO MATCH EXISTING CABINET SIZES - TRANE UNIT SIZES 125 & 150.
2. COIL CAPACITIES SHALL BE SELECTED WITH INDICATED FLUID FLOW RATE, DELIVERING INDICATED LEAVING AIR TEMPERATURES, AS A MINIMUM PERFORMANCE REQUIREMENT. FOR 3-WAY VALVES: COOLING BYPASS FLOW: 5 GPM; HEATING BYPASS FLOW: 2.5 GPM.
3. UNIT SELECTION SHALL BE WITH MANUFACTURER INSTALLED SA REGISTER AT TOP FACES, RA GRILLE AT BOTTOM. CONTROL AIR DAMPERS SHALL BE PROVIDED BY UNIT MANUFACTURER; ACTUATORS BY CONTROLS CONTRACTOR.
4. MULTIPLE UNITS EXIST w/DESIGNATION: REFER TO PROJECT DRAWINGS FOR LOCATIONS; INSTALLATION TAG w/EF-(ROOM) DESIGNATION.

VFC SCHEDULE

EQUIPMENT SERVED	CONTROLLED EQUIPMENT	ELECTRICAL HP	SERVICE INPUT	SERVICE OUTPUT	NOTES
AHU	SUPPLY-AIR FAN	3.0	208/60/3	208/60/3	1
P-CHLR	COOLING PUMP	7.5	208/60/3	208/60/3	1

NOTES

1. REFER TO SECTION 237313 FOR ADDITIONAL DETAILS & SECTION 230993 FOR CONTROL REQUIREMENTS.

DUCT SILENCER SCHEDULE

TAG	CONFIGURATION	SYSTEM PRESSURE CLASS	PHYSICAL CHARACTERISTICS IN (1) WIDTH	HEIGHT	IN/OUTBODY (2) WIDTH	HEIGHT	OUT (3) WIDTH	HEIGHT	LENGTH (CENTERLINE) 1	2	3	WEIGHT (LBS)	CAPACITY CFM	VELOCITY	ESP	PERFORMANCE DYNAMIC INSERTION LOSS (dB) 63	125	250	500	1K	2K	4K	8K	GENERATED NOISE (dB) 63	125	250	500	1K	2K	4K	8K	NOTES
DS	ELBOW	2"	42"	12"			42"	12"	52"	--	--	190	3,200	914	0.10"	8	13	23	31	40	40	33	24	32	34	26	30	30	22	24	14	1

NOTES

1. REFER TO SECTION 233300 FOR ADDITIONAL DETAILS; REFER TO PROJECT DRAWINGS FOR VIEW(S) OF SILENCER ORIENTATION & CONFIGURATION.

AIR COOLED CHILLER SCHEDULE

TAG	TONS	EER	IPLV	AMB TEMP	ELV	REFRIG.	REFRIG. CHARGE	SOUND PRESSURE	SOUND POWER	EVAPORATOR DATA FLOW (GPM) MIN	MAX	DESIGN	EWT	LWT	WPD	FLUID	ELECTRICAL DATA SERVICE	KW	MCA	MOCP	SCCR	TYPE	NOTES
CHILLER	94	10.2	15.0	90°F	0'	R-410A	94 LB + 94 LB	68 dBA	94 dBA	120	307	200	(55.3')	44.0°	12'	WATER	208/60/3	112	484	500	-	AIR-COOLED SCROLL	1,2

NOTES

1. REFER TO SPECIFICATION SECTIONS 236423 FOR ADDITIONAL PRODUCT & INSTALLATION DETAILS & SECTION 230993 FOR CONTROL REQUIREMENTS; DESIGN BASIS IS TRANE RAUJ WITH REMOTE EVAPORATOR.
2. CHILLER SHALL BE PROVIDED WITH A FIELD INSTALLED REMOTE EVAPORATOR FOR INSTALLATION BY CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR ADDITIONAL REFRIGERANT FOR REMOTE LOCATION.

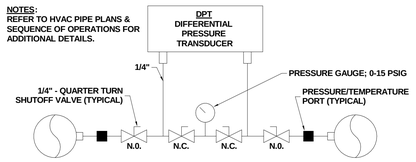
PUMP SCHEDULE

TAG	DESCRIPTION - TYPE	SIZE	PERFORMANCE MIN GPM	1 PUMP GPM	2 PUMP GPM	MAX HEAD	MAX RPM	EFF.	NPSH	ELECTRICAL BHP/HP	SERVICE	NOTES
P-CHLR	CHILLER & COOLING SYSTEM PUMP	3" x 3"	120	200	-	60'	1,760	77%	5'	3.9 / 7.5	208/60/3	1
P-AHU	AHU COIL PUMP	3" x 3"	16	16	-	16'	1,760	77%	5'	0.125	120/60/1	2

NOTES

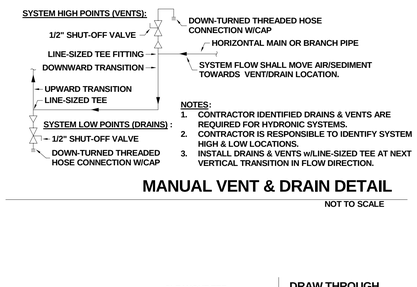
1. REFER TO SECTION 232123 FOR ADDITIONAL DETAILS & SECTION 230993 FOR CONTROL REQUIREMENTS; DESIGN BASIS TACO KV.
2. REFER TO SECTION 232123 FOR ADDITIONAL DETAILS & SECTION 230993 FOR CONTROL REQUIREMENTS; DESIGN BASIS TACO 00 SERIES.

EQUIPMENT & DEVICES WITH COMMON TAGS, THEREFORE REQUIRING MULTIPLE UNITS MAY BE INDICATED WITH A QUANTITY SHOWN IN PARENTHESIS. QUANTITY IS INDICATED TO ASSIST IN BIDDING PROCESS. CONTRACTOR REMAINS RESPONSIBLE TO ACCOUNT FOR ALL EQUIPMENT & DEVICES SHOWN HEREIN & AS DESCRIBED BY PROJECT SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE TO ACCOUNT FOR CHANGES THAT MAY OCCUR DURING BIDDING PROCESS. WHERE DEVIATION EXIST BETWEEN SHOWN & TAKE-OFF QUANTITIES, CONTRACTOR IS RESPONSIBLE TO ACCOUNT FOR CORRECT VALUE.



DIFFERENTIAL PRESSURE TRANSDUCER DETAIL

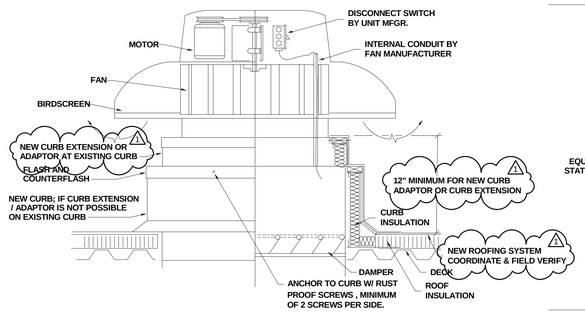
(DIFFERENTIAL PRESSURE TRANSDUCER - DPT) NOT TO SCALE



NOTES:
1. CONTRACTOR IDENTIFIED DRAINS & VENTS ARE REQUIRED FOR HYDRONIC SYSTEMS.
2. CONTRACTOR IS RESPONSIBLE TO IDENTIFY SYSTEM HIGH & LOW LOCATIONS.
3. INSTALL DRAINS & VENTS w/LINE-SIZED TEE AT NEXT VERTICAL TRANSITION IN FLOW DIRECTION.

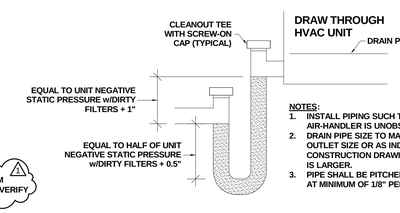
MANUAL VENT & DRAIN DETAIL

NOT TO SCALE



DOWNBLAST CENTRIFUGAL FAN DETAIL

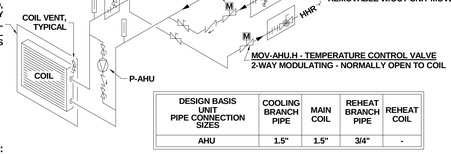
NOT TO SCALE



NOTES:
1. INSTALL PIPING SUCH THAT ACCESS TO AIR-HANDLER IS UNOBSTRUCTED.
2. DRAIN PIPE SIZE TO MATCH DRAIN OUTLET SIZE OR AS INDICATED ON CONSTRUCTION DRAWINGS, WHICHEVER IS LARGER.
3. PIPE SHALL BE PITCHED AT DOWNWARD AT MINIMUM OF 1/8" PER LINEAR FOOT.

CONDENSATE TRAP PIPING DETAIL

NOT TO SCALE



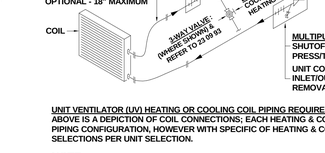
DESIGN BASIS UNIT PIPE CONNECTION SIZES	COOLING BRANCH PIPE	MAIN COIL	REHEAT BRANCH PIPE	REHEAT COIL
AHU	1.5"	1.5"	3/4"	-

NOTE:

1. REFER TO EQUIPMENT SCHEDULE(S) FOR PERFORMANCE REQUIREMENTS.
2. INSTALL PIPING SUCH THAT ACCESS TO UNIT COMPONENTS IS NOT LIMITED.
3. EQUIPMENT LOCATIONS & PIPE SIZING SHALL BE AS INDICATED ON PIPE LAYOUT SHEETS.
4. REFER TO SECTION 232113 FOR PIPE, FITTING & MULTIPURPOSE DEVICE REQUIREMENTS & SECTIONS 230900 & 230993 FOR EQUIPMENT SEQUENCES & CONTROL VALVE SELECTION & OPERATIONAL REQUIREMENTS.

AHU - COIL PIPING DETAIL

NOT TO SCALE



UNIT	COOLING COIL	COOLING BYPASS	HEATING COIL	HEATING BYPASS
UV-1	1.25"	1.00"	0.75"	0.75"
UV-2	1.25"	1.00"	0.75"	0.75"
EX.FCU	0.75"	EX.	0.75"	EX.
EX. CUH	-	-	0.75"	-
EX. CONV	-	-	0.75"	-
EX. RAD	-	-	0.75"	-

- BYPASS PIPE FOR 3-WAY VALVES

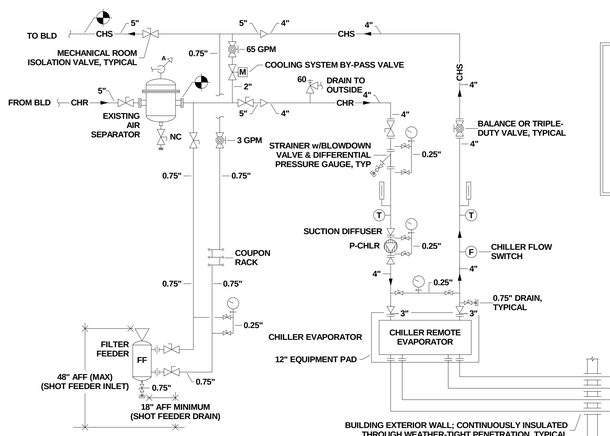
UNIT VENTILATOR (UV) HEATING OR COOLING COIL PIPING REQUIREMENTS :
ABOVE IS A DEPICTION OF COIL CONNECTIONS; EACH HEATING & COOLING COIL SHALL BE WITH AN IDENTICAL PIPING CONFIGURATION, HOWEVER WITH SPECIFIC OF HEATING & COOLING PIPE SIZES & CONTROL VALVE SELECTIONS PER UNIT SELECTION.

NOTE:

1. EQUIPMENT LOCATIONS & PIPE SIZING SHALL BE AS IS INDICATED; CONTRACTOR IS RESPONSIBLE TO FIELD CONFIRM ALL SIZES PRIOR TO PROCUREMENT OF MATERIALS.
2. REFER TO SECTION 232113 FOR PIPE, FITTING & MULTIPURPOSE DEVICE REQUIREMENTS & SECTIONS 230900 & 230993 FOR EQUIPMENT SEQUENCES & CONTROL VALVE SELECTION & OPERATIONAL REQUIREMENTS.

UV PIPING DETAIL

COOLING & HEATING COILS SHALL BE PIPED WITH THE SAME COMPONENTS NOT TO SCALE

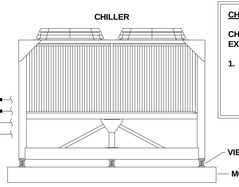


EXTERIOR PIPE INSTALLATIONS :

EXTERIOR REFRIGERANT SUCTION PIPES SHALL BE CONTINUOUSLY INSULATED WHILE PASSING THOUGH WEATHER TIGHT EXTERIOR WALL PENETRATION:

1. EXTERIOR WALL SEAL; LINK-SEAL MODULAR ELASTOMERIC SEALING SYSTEM OR REVIEWED EQUIVALENT.
2. PIPE SUPPORTS: HEAVY WEIGHT RECYCLED RUBBER BLOCK WITH INTEGRAL RAIL FASTENING SYSTEM, REFER TO SECTION 23 05 29, OR LISTED EQUIVALENT; 1 BASE PER 96-INCHES LINEAR LENGTH & WITHIN 18-INCHES OF PIPE DIRECTIONAL TRANSITIONS. A COMMON BASE SHALL BE UTILIZED FOR MULTIPLE PARALLEL PIPES. BASE SHALL BE A MINIMUM OF 4-INCHES LONGER THAN OUTSIDE DIAMETER OF PIPE INSULATION, OR TOTAL WIDTH OF PARALLEL PIPES. PIPE BASE SHALL SET ATOP CONCRETE HOUSEKEEPING PADS.
3. INSULATION SUPPORTS: PIPE INSULATION AT EXTERIOR WALL PENETRATIONS & AT PIPE SUPPORT LOCATIONS SHALL BE WITH RIGID PREFORMED POLYISOCYAMURATE PIPE INSULATION FITTINGS; ABUTTED & ADHERED TO ADJACENT PIPE INSULATION. AS DESCRIBED IN SECTION 23 07 00, ELASTOMERIC INSULATION WITH FIELD APPLIED JACKETING.

CHILLER REMOTE EVAPORATOR INSTALLATION DETAILS:
REFER TO SECTION 23 64 23; AIR COOLED CHILLER; REMOTE EVAPORATOR FIELD INSTALLATION REQUIREMENTS & CONTRACTOR SELECTED CHILLER REQUIREMENTS; CONTRACTOR SHALL COMPLY WITH ALL INSTALLATION REQUIREMENTS, CONTACT CHILLER MANUFACTURER & PROJECT ENGINEER FOR INSTALLATION DIFFERENCES THAT REQUIRE FURTHER CONSIDERATION.



CHILLER INSTALLATIONS :

CHILLERS SHALL BE MOUNTED WITH VIBRATION ISOLATORS ATOP EXISTING CONCRETE EQUIPMENT PAD:

1. ISOLATORS: KINETICS TITAN RESTRAINED VIBRATION ISOLATORS; 6 ISOLATORS FOR EACH CHILLER - INSTALL AT EACH OF 6 MANUFACTURER IDENTIFIED MOUNTING LOCATIONS. SELECT ISOLATORS FOR MOUNTED LOAD w/EQUIVALENT DEFLECTION AT EACH VIBRATION ISOLATOR.

COOLING PLANT P&ID

NOT TO SCALE

Learning Center Improvements

422 East Central Avenue, Greensburg, Indiana 47240

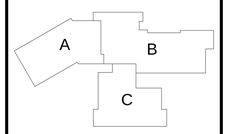
Greensburg Community Schools

ARCHITECT

FANNING HOWEY

317-848-0966 WWW.FHAI.COM

KEY PLAN



Project Status

DRAWN BY: DDP

PROJECT NUMBER: 221055.05

PROJECT ISSUE DATE: MAY 27, 2022

REV. NO.	DESCRIPTION	DATE
1	ADDENDUM 01	7/12/22

HVAC SCHEDULES & DETAILS

M5.01