ADDENDUM NO. 2

DATE: October 12, 2022

ENGINEER: Gipe Associates
1220 East Joppa Road, Suite 223
Baltimore, Maryland 21286
Phone: (410) 832-2420

OWNER: Harford County Public Schools

PROJECT: Meadowvale Elementary School
910 Graceview Drive
Havre de Grace, Maryland 21078
Gipe Project No. 22047

TO: All Prospective Bidders

The following changes are made a part of the Drawings and Specifications for the subject project, dated September 19, 2022. Receipt of this Addendum is to be acknowledged, in the space provided in the Bid Form. Failure to do so may subject the Bid to be considered as non-responsive.

A. CHANGES TO SPECIFICATIONS

1. Section 00 0100, INSTRUCTIONS TO BIDDERS: Paragraph 3.1: Change “…drawings and specifications which will be mailed by registered mail with return receipt requested or faxed to all prospective bidders (at the respective addresses furnished for such purpose.)” to “…drawings and specifications which will be posted to HCPS Website/EMMA for prospective bidders to access.”.

2. Section 00 0100, INSTRUCTIONS TO BIDDERS: Paragraph 7.1: Change “…compact disc…” to “…flash drive…”.

3. Section 00 0100, INSTRUCTIONS TO BIDDERS: Paragraph 8.2: Add “Contractors may submit the Contractor’s Qualification Statement by e-mail to construction@hcps.org.”

4. Section 00 0100, INSTRUCTIONS TO BIDDERS: Paragraph 12.1: Change “…compact disc…” to “…flash drive…”.

5. Section 00 0100, INSTRUCTIONS TO BIDDERS: Paragraph 12.1: Delete “If the Contractor needs additional sets, he may purchase them from the Architect by paying the actual reproduction costs plus handling charge.” to “If the Contractor needs additional sets, he shall make them from the flash drive they were provided.”

6. Section 01 1000, SUMMARY, Change the footer information on all associated sheets to read “SUMMARY” and “01 1000”.

7. Section 01 1000, SUMMARY, Paragraph 1.4.A.1, Change “…chilled water located in the crawl space with be videoed…” to “…chilled water located in the crawl space will be
8. Section 01 1000, SUMMARY, Paragraph 1.7.H, Delete the paragraph and add the following:
Asbestos/asbestos containing material (ACM): In the event that the contractor encounters any materials suspected of being asbestos or containing asbestos that is not identified to be removed by the contractor, the contractor shall immediately stop work in that area and notify the HCPS project manager. In the event asbestos identification and/or abatement is required, the same shall be performed by HCPS and not the contractor. The Ahera management plan for each building is available for review and the contractor is to make full use of this document. Unless otherwise specified in the contract, asbestos removal and abatement is not the contractor’s responsibility or obligation. In the event that the contractor performs any work with respect to any materials suspected of being ACM or containing ACM after encountering the same, the contractor shall pay and indemnify HCPS with respect to any and all cost(s) of remediation or damages arising out of the contractor’s continuation of work after encountering materials which are suspected of containing ACM or being ACM. No materials provided under this contract shall contain asbestos. HCPS shall be entitled to pursue all remedies including but not limited to immediate termination of the contract in the event that the contractor fails to comply with any obligation set forth above.

9. Section 01 1000, SUMMARY, Paragraph 1.9.A, Delete and add the following: A. The minimum Contractor’s parts and labor warranty shall be 2 years after substantial completion unless indicated to be longer.

10. Section 01 2900, PAYMENT PROCEDURES, Paragraph 1.5.C, Delete and add the following: C. Payment Application Times: Submit Application for Payment to Engineer by the 25th of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.

11. Section 01 3233, PHOTOGRAPHIC DOCUMENTATION, Delete entire section and remove from the Table of Contents.

12. Section 23 0600, HEATING, VENTILATING AND AIR CONDITIONING EQUIPMENT: Add the following:

2.4 VARIABLE SPEED DRIVES

A. Provide variable speed drive controllers for pumps as indicated on contract drawings.

B. The adjustable frequency controller (AFC) shall convert three phase 60 Hertz utility power to adjustable voltage and frequency, three phase, AC power for stepless motor control from 5 percent to 110 percent of base speed.

C. The AFC shall be a voltage source type with a PWM output utilizing power transistor semi-conductors.

D. The AFC together with all options and modifications shall mount within a standard NEMA 1 enclosure suitable for continuous operation at ambient temperature of 0 to 40 degrees C. with relative humidity to 95 percent non-
condensing. All high voltage components within enclosure shall be isolated with steel covers. The complete unit shall be UL approved and UL labeled.

E. Circuits shall provide DV/DT and DI/DT protection for semi-conductors. AFC shall be capable of starting into a rotating load without delay. Protective circuits shall cause instantaneous trip (IET) should any of the following faults occur.

1. Motor overload.
2. Shortcircuit.
3. Motor overtemperature fault.
4. Reverse phase.
5. 110 percent of controller maximum sine wave current rating is exceeded.
6. Output phase to phase and phase to ground short circuit condition.
7. High input line voltage
8. Low input line voltage
9. Loss of input phase
10. External fault: This protective circuit shall permit, by means of the terminal strip, wiring of remote NC safety contacts such as high static, firestat, etc., to shut down the drive.

F. The following adjustments shall be available in the controller and retained in non-volatile memory:

1. Maximum frequency (15 to 400 Hz) factory set at 60 Hz.
2. Maximum frequency (3 to 60 Hz) factory set at 6 Hz.
3. Acceleration (.1 to 360 seconds) factory set at 20 seconds.
4. Deceleration (.1 to 360 seconds) factory set at 20 seconds.
5. Volts/Hertz ratio factory set for 460V at 60 Hz.
6. Voltage offset or boost factory set at 100 percent torque.
7. Current limit (50 percent to 110 percent sine wave current rating) factory set at 100 percent current.

G. The AFC shall have the following basic features:

1. Door-mounted operators controls consisting of a membrane command center which allows manual stop/start and speed control, local/remote indication and manual/or automatic speed control selection. In addition, the command center shall serve as a means to configure controller parameters such as min speed, max speed, acceleration and deceleration times, Volts/Hz ratio, torque boost etc. Potentiometers shall not be allowed for these settings.
2. Main input disconnect to provide a positive disconnect between the controller and all phases of the incoming A-C line. This disconnect shall be mounted inside the controller enclosure and have through-the-door interlocking toggle with provisions for padlocking.
3. Electronic motor overload relay.
4. EMI/RFI filters: All VFDS shall include EMI/RFI filters. Te on board filters shall allow the VFD assembly to be CE marked and the VFD shall meet product standard EN61800-3 for the First Environment restricted level (Category C2).
5. Drive Options: Options shall be furnished and mounted by the drive manufacturer. All optional features shall be UL Listed by the drive manufacturer as a complete assembly and carry a UL Listing.

6. Automatic restart after power outage, drive fault or external fault, with drive in automatic mode. The circuit shall allow the user to select up to (10) restart attempts as well as the dwell time between attempts. The reset time between fault occurrences shall also be selectable. All settings shall be via the membrane command center.

7. Door-mounted LED display for digital indication of:
   a. Frequency output.
   b. Voltage output.
   c. Current output.
   d. First fault indication.
   e. Fan or Pump Speed (RPM).

8. Relay contacts for remote indication of drive fault and motor finning.

9. Three critical frequency avoidance bands, field programmable via the membrane command center. Each critical frequency avoidance band shall have a bandwidth adjustable via keypad entry of up to 10 Hz.

10. Three programmable preset speeds which shall force the AFC to a preset speed upon a user contract closure. The default minimum shall be 6 Hz and the maximum speed shall be 75 Hz.

11. Isolated process follower to enable VFC to follow a 4-20 mA signal.

12. The AFC shall have the capability to ride through power dips up to 500 msec without a controller trip depending on load and operating condition.

13. Line reactor to minimize line surges, line notching, and voltage distortions.

H. Motor protection per National Electrical Code shall be provided by a motor overload relay. The 115-volt A-C relay control logic, allowing common start/stop commands in the "controller" mode shall also be included within the enclosure.

I. The VFC and all components shall be supplied within a single NEMA 1 enclosure, and shall be U.L. Listed as a single unit. Furnish all components necessary to provide a minimum lead length between motor and drive of 400 ft. The VFC shall not generate damaging transistor pulses greater than the limits set by NEMA MG-1 at 400 Ft lead length.

J. The VFC manufacturer shall maintain and staff nationwide service centers. These service engineers shall be employed by the manufacturer and provide start-up service including physical inspection of drive and connecting wiring and final adjustments to meet specified performance requirements.

K. The VFC shall carry a full parts and labor warranty for five (5) years from date of Owner acceptance of the building.

L. Provide auto-reset phase protection; ICM-450 undervoltage, overvoltage, loss of phase, phase reversal protection and time delay with auto reset. Coordinate installation with Division 26.
M. Provide spare washable intake filter and fuses for each drive. Turn over spare filters and fuses to Owner.

N. The variable speed drive manufacturer shall coordinate with the ATC contractor and provide all necessary devices whether optional or not to perform complete and automatic operation as described in the sequence of operation.

O. BAS Interface: Factory-installed hardware and software to enable the BAS to monitor, control, and display VFC status and alarms. Allows VFC to be used with an external system within a multidrop LAN configuration; settings retained within VFC’s nonvolatile memory.

P. Variable speed drives shall be carefully selected for the duty required. Variable speed drives shall be specifically designed for the specified equipment to be controlled.

Q. The variable speed drive shall be ABB, or approved equal of Accutrol, Cutler Hammer, York, Trane, Emerson, Danfoss, or as approved equal.

13. Section 23 0600, HEATING, VENTILATING AND AIR CONDITIONING EQUIPMENT: Add the following:

3.10 VARIABLE SPEED DRIVES

A. Provide variable speed drive controllers for equipment as indicated on the drawings unless otherwise specified with the equipment.

B. Install drive in accordance with NEC and manufacturers recommendations. Provide proper service, maintenance access around all variable frequency drives.

C. Variable speed drives shall be carefully selected for the duty required. Variable speed drives shall be specifically designed for the specified equipment to be controlled. Pump drives shall be selected for pumps.

D. Confirm wall construction can support the drive. Where the wall construction is inadequate, provide kindorf type supports extending from the slab to the structure above.

E. Provide a list of fault codes on a laminated document and attach to each drive.

F. Provide the services of manufacturer for start-up and Owner training. Training shall be a minimum of 8 hours and should include setup, normal operating instructions and trouble shooting.

G. Variable speed drives start-up shall include the minimum Hz setting of 6 Hz.

H. Variable speed start-up shall include the maximum amp draw for the motor being controlled as the high amp limit.
I. Variable speed start-up shall include the maximum frequency in Hz based on the pump impeller speed allowed.

J. Variable speed data shall be recorded for the TAB contractor to verify during testing and balancing.

K. All variable speed drive parameters set by the start-up shall be recorded for the Owner’s record.

L. All limits associated with variable speed drive setup shall be be prior to starting testing and balancing.

M. Coordinate electrical characteristics of variable frequency drives with motor served.

B. CHANGES TO DRAWINGS

1. For all drawings provide “PSC#12.053.SR23” below each sheet number.

C. RFI QUESTIONS AND ANSWERS

1. Is a street closure required for the crane?
   Answer: This is a means and methods. This is the contractor’s responsibility.

2. What is the system volume? Need to know this to be able to calculate the quantity of glycol needed. If system volume is not known, can contractor provide an allowance for a predetermined amount of glycol? What should that amount be?
   Answer: Contractor can calculate from the information on drawings. The glycol type and percentage is indicated on Drawing M0.0.

3. Please provide information about VFDs for pumps.
   Answer: Refer to CHANGES TO SPECIFICATIONS above.

4. Spec book states that all HVAC piping/equipment strainers need to be pulled and cleaned six months after project is completed - is this required?
   Answer: Yes. It is a requirement per the specification.

5. Besides the video inspection of the piping, is video and photography required for the project (pre-demo and demonstration/training)?
   Answer: See Changes to Specifications for changes to photography requirements. Video is required for training and demonstration per Section 23 0500 Paragraph 3.7.

6. Are clevis hangers acceptable instead of roller style as specified? Existing hangers are clevis type.
   Answer: Clevis hangers are acceptable.
7. ChemAqua is listed as the water treatment company - please provide a contact name and number.
   **Answer:** James.Liberto@chemaqua.com

8. Is the water treatment company to provide two years of service after the project is completed as part of this project?
   **Answer:** Yes per specification Section 23 0600 paragraph 2.3.A.

9. Spec book calls for quarterly OEM chiller inspections - is this required?
   **Answer:** Yes. It is a specification requirement.

10. Existing refrigerant is to be recovered and turned over to the customer - who provides the recovery bottles?
    **Answer:** The Contractor is to provide the recovery bottles.

11. What is the intended start date of the project?
    **Answer:** When HCPS provide the Notice to Proceed.

12. Is there a method in place to account for increases in material and labor costs between the bid due date and the start date of the project which is a year away?
    **Answer:** NO. The bid date and start date are not a year away. HCPS is planning to get the bids and forward info to IAC and then proceed to award.

13. Is certified payroll required?
    **Answer:** Refer to Specification Section 00 0200 Prevailing Wage for information.

14. Is a maintenance bond required?
    **Answer:** No.

15. Are high performance butterfly valves required?
    **Answer:** Butterfly valves are required to be high performance type per Section 23 0505 paragraph 2.2.A.1.f.

16. The power riser diagram for demolition, reflects a dotted line to demolish the chiller feed from the Switchgear to the chiller disconnect and from the chiller disconnect to the actual chiller. Does the school wish to have a completely new feed from the gear all the way out to the chiller? Can the feed be existing to remain and only replace from the disconnect to the chiller? Also, this school does not show having heat trace, will heat trace be necessary for this installation?
    **Answer:** The existing chiller feeder conduits and/or cabling to the disconnect may be reused where feasible, IF in good condition AND the size matches (or exceeds) that indicated for the new feeder. Test existing feeder cabling to verify condition per specifications. There is no heat trace required for this project.

17. I am writing for a clarification on access for the crane set up point for the Meadowvale ES Chiller. The idea set up would be on the road closest to the chiller but there was concern about reducing the traffic on that street. Please confirm in the amendment whether we are permitted to set the crane up on that road or if access to the field will be
granted without worry about potential of creating divots and damage to the grass on that side of the school. The other option which is more costly would sound like, “All craning operations should take place within school parking lots and not be extended off of the pavement”. An answer like that would confirm that all contractors would need to bring the bigger crane.

**Answer:** This is a means and method. The Contractor shall be responsible for determining the best approach in the use of a crane. The Contractor shall coordinate with local AHJ for crane use and permits. All existing surface conditions shall be restored to their original condition after any crane use.

**D. ATTACHMENTS**

1. NONE

END OF ADDENDUM NO. 2