KEVIN KAMENETZ
County Executive

EDWARD C. ADAMS, JR., *Director*
Department of Public Works

April 19, 2011

RE: Contract #11003 PO0
Owings Mills Learning Center
Owings Mills District 4 c 4
J.O. #209-209-0894-0001

ADDENDUM NO. 9

To All Bidders

This addendum is hereby made a part of the Proposal and the Special Provisions, and is hereby incorporated into the Contract. Should this addendum conflict with any portion of the Special Provisions, the Proposal, or any prior addenda, this addendum shall supercede and control.

Please note the attached changes, corrections, and/or information in connection with the contract and submit bids and be otherwise governed accordingly.

For Your Information

Attached are clarifications, revisions, corrections and/or additions to the Specifications and Drawings.

In The Proposal

Revised & attached to be inserted: page 45 "Description of Work" of Volume 2 of 2 changing the bid date from Thursday, April 21, 2011 at 2:00 p.m. local time to Thursday, April 28, 2011 at 2:15 p.m. local time.

Vincent G. Kicas, Chief
Division of Construction Contracts Administration

VGK:AEC:ldh

PLEASE ACKNOWLEDGE THIS FAX BY SIGNING BELOW AND RETURNING TO TONY CREWS AT 410-887-4505 TOTAL PAGES: 12

RECEIVED BY: _____ **DATE:** _____

NAME ABOVE PRINTED: _____

COMPANY NAME PRINTED: _____

ADDENDUM 9

1.1 PROJECT INFORMATION

Project Name: Owings Mills Learning Center

Owner: Baltimore County

Owner Project Number:

Architect: Hord Coplan Macht, Inc.

Architect Project Number: 209142

Date of Addendum: April 19, 2011

1.2 NOTICE TO BIDDERS

This Addendum is issued **to all registered plan holders** pursuant to the **Instructions to Bidders and Conditions of the Contract**. This Addendum serves to clarify, revise, and supersede information in the Project Manual, Drawings, and previously issued Addenda. Portions of the Addendum affecting the Contract Documents will be incorporated into the Contract by enumeration of the Addendum in the Owner/Contractor Agreement.

The Bidder shall acknowledge receipt of this Addendum in the appropriate space on the Bid Form.

1.3 ATTACHMENTS

NOT APPLICABLE

1.4 REVISIONS TO PREVIOUS ADDENDA

See item Sheet E7.6 under REVISIONS TO DRAWING SHEETS

1.5 REVISIONS TO DIVISION 00 PROCUREMENT AND CONTRACTING REQUIREMENTS

NOT APPLICABLE

1.6 REVISIONS TO DIVISION 01 GENERAL REQUIREMENTS

NOT APPLICABLE

1.7 REVISIONS TO DIVISIONS 02 - 16 SPECIFICATION SECTIONS

Section 02300 EARTHWORK:

DELETE Paragraph E under Part 2 Execution.

Section 15400 PLUMBING:

ADD to Paragraph 2.16.A as follows: System shall be NSF-61 certified.

ADD to list of Acceptable Manufacturers noted in Paragraph 2.16.R: Tigerflow Systems.

Section 15820 PACKAGED FIRE PUMP SYSTEM:

DELETE Paragraph 1.1 B and REPLACE with:

"Pump shall be designed to deliver 750 GPM at 80 PSI, 3550 RPM. Motor shall be 60 horsepower. The pump design point horsepower shall not exceed a horsepower service factor of 1.00. In addition, the entire curve may not overload the horsepower requirement. All of the flows, pressures and horsepowers at shut-off, rated and 150% shall be illustrated as a certified curve from the factory during the submittal process. Site voltage for the fire pump and the jockey pump shall be as follows: 460 Volt, 3 Phase."

DELETE the following text in Paragraph 2.2.A:

"The motor shall not exceed 40 HP when operating at 1760 RPM...."

and REPLACE with:

"The motor shall not exceed 60 HP when operating at 1760 RPM...."

DELETE Paragraph 2.3 "CONTROLLER" and REPLACE with new paragraph 2.3 "VARIABLE SPEED TRANSFER SWITCH CONTROLLER WITH SOFT START BYPASS" as follows:

"A. The variable speed transfer switch fire pump controller shall be designed and built strictly in accordance with the 2010 edition of the National Fire Protection Association's Pamphlet No. 20.

B. It shall be a factory assembled, combination variable frequency drive with line and load isolation, bypass soft starter with line and load isolation, built-in transfer switch, and fire pump controller. The entire combination shall be listed

for fire protection service by Underwriters Laboratories and approved by Factory Mutual Research.

C. The variable frequency drive shall provide system pressure regulation through a proportional, integral, differential loop to within 1% of the pressure set point. It shall provide ramp starting and stopping of the fire pump motor. It shall also include provisions for skip frequencies (skip speeds) to avoid harmonics. Further, it shall be able to accelerate an already spinning motor and shall allow deceleration of the motor without causing a motor over-voltage shutdown.

D. The drive path shall include an AC line reactor of at least 5% impedance located in front of the drive rectifiers and a DC choke in series with the drive capacitors.

E. The controller shall have an automatic variable speed failure circuit independent of the variable frequency drive failure signals. Upon failure of the variable frequency drive, the line and load isolation contactors shall open and the controller shall bypass the variable frequency drive. The bypass operation shall include a separate dedicated 2 second restart delay to prevent out-of-phase transients when the motor is reconnected. The controller bypass operation shall keep the motor running at full voltage and line frequency until manually reset.

F. The controller shall comprise of three fully rated motor contactors with horsepower ratings equal to or greater than the labeled fire pump motor horsepower. One contactor shall isolate the line side of the variable frequency drive to provide line voltage transient isolation, the other contactor shall isolate the load side of the drive, and the third contactor shall bypass the drive completely. The load side contactor and bypass contactor shall be electrically and mechanically interlocked to prevent feeding power back to the output terminals of the drive. The bypass contactor shall also be mechanically operable by the Emergency Manual Mechanical Operator on the fire pump controller.

G. The soft start bypass power circuit shall be comprised of two reduced voltage contactors and a solid state reduced voltage motor starter. One contactor shall provide isolate the line side of the soft starter to provided voltage transient isolation and the other shall isolate the motor load.

H. The controller shall provide line side fuses ahead of the drive. These fuses shall be coordinated with the fire pump circuit breaker to prevent tripping the fire pump controller circuit breaker in the event of a drive fault.

I. The controller shall have dual independent transducer pressure switches. One shall have the controller start and stop settings that can be set to the nearest 1.0 psi. The other shall have the bypass pressure settings that are active only when the motor is running. These settings shall be readable through the door.

J. The controller shall be provided with a pressure transducer for the VFD pressure feedback loop and a second independent pressure transducer for the paperless alarm and pressure recorder.

K. The controller shall provide a normal Stop pushbutton for normal ramp down and stopping and an Emergency Stop pushbutton for immediate shutdown.

L. The controller shall have an external mode switch to select either automatic variable speed operation or bypass operation.

M. The controller shall be comprised of modular chassis with plug-in printed circuit boards, relays, and connectors. All plug-in parts shall be securely latched or locked in place.

N. Control power shall be 24 VDC and shall be derived from 3 independent, electro-statically shielded, control power transformers with redundant isolated rectifier circuits.

O. The controller shall have a dielectric strength of 5000 Vac for increased immunity to voltage surges.

P. Control logic shall be "air gap" isolated from control power until a start demand is received for additional protection from line surges.

Q. Power for the circuit breaker shunt trip solenoid shall be derived from three transformers and shall be completely independent of any one single phase A.C. voltage.

R. A digital readout capable of being read with the door closed and the motor running shall be provided to indicate the three line to line voltages, the minimum of any of these voltages, the three phase currents, and the maximum of any of these currents. A calibration sheet, traceable to the National Institute of Standards and Technology shall be provided to show that the meter accuracy is better than 2 percent or 2 digits. In the variable speed mode, the digital readout shall also display drive output frequency.

S. Status LED's visible through the door shall individually indicate: Pressure start, Deluge Valve start, Remote start, Local start, Restart timing, Breaker timing, Sequence Start timing, Accelerate timing, Commit to Run status, Lockout status, Full Voltage Run status, and Minimum Run status. The start LEDs shall be latched on until the pump is stopped.

T. Instant on control circuitry capable of starting the fire pump immediately after power is applied and a fixed 2-second restart delay to reduce motor back EMF before power is re-applied shall be provided.

U. A phase sequence switch shall be provided to switch the controller sequence from ABC to CBA.

V. A minimum run timer on/off switch shall be provided to switch the controller from manual stop to a fixed 10 minute minimum run. In the variable speed mode, the controller shall continuously maintain the set pressure for as long as a water demand exists. Slowing down the pump shall to determine if a water demand exists is not acceptable.

W. A three position circuit breaker test switch shall be provided to demonstrate the NFPA 20 locked rotor and instantaneous protection. The test current simulated by the test switch shall be displayed on the digital display.

X. PhaseSmart logic shall be provided to assure that the controller will not start the fire pump motor under single phase conditions when the voltage on any phase is lower than 65% of the rated motor voltage. However, if the motor is already running when a phase loss occurs, the PhaseSmart logic shall keep the motor running.

Local visual signals shall be provided to indicate Power Available, PhaseSmart, Phase Reversal and Supervisory Power Available, Motor Running, Transfer Switch in Emergency, Emergency Isolating Switch Open, Drive Failure, and Bypass Operation. All local visual alarms shall be indicated on individual long life LED light bars. Failure alarms shall be red, pump room trouble alarms shall be amber, and power on indications shall be green.

Y. The Power Available signal shall indicate when the controller line voltage is less than 85% of the controller rated voltage on any or all phases.

Z. SPDT remote contacts shall be provided to indicate AC Power Failure, Phase Reversal, Motor Running, Transfer Switch in Emergency, Emergency Isolating Switch Open, Drive Failure, and Bypass Operation.

AA. All transducer pressure switches, the VFD pressure transducer, and all related pressurized wet parts shall all be mounted externally to the side of the controller. They shall also be mechanically protected from damage. No water pressure connection of any kind shall be provided inside the controller enclosure.

BB. The enclosure shall be floor mounted and shall not exceed 75 inches in height, 108 inches in width, or 24 inches in depth. The controller shall be installed at least 12 inches from the back wall and 36 inches from the right side wall to provide adequate free space for cooling. All enclosure doors shall be equipped with safety mechanical interlocks to prevent the door from being opened until the disconnecting means is opened.

CC. The controller shall be provided in a, dust-tight, NEMA 12 enclosure with a drip hood. The finish shall be a baked on fire engine red paint. Internal heat shall be removed by a NEMA 12, passive, air-to-air, heat pipe type cooler. No refrigeration, vents, or vent fans shall be used. No exchange to outside air shall be allowed.

DD. A paperless pressure and alarm recorder shall record the last 4000 pressure points and the last 350 alarm points or controller status LEDs in static, non-volatile, solid state memory with no moving parts. It shall be built into the door of the fire pump controller and be provided with a battery back-up for full operation when AC power is lost.

EE. The recorder shall have its own regulated power supply and be completely independent of the fire pump controller automatic circuitry and regulated power supply. It shall be capable of recording the system pressure even if the controller circuitry or regulated power supply has failed.

FF. A through the door, NEMA 4 rated, 160 character, 4 row display shall be provided on the fire pump controller. It shall display the current pressure, time and date.

GG. A through the door, NEMA 4 rated connector, shall be provided to download data to a laptop computer without opening the door or turning off the power for access.

HH. All printed circuit boards shall be conformal coated.

II. Pressure readings shall be sampled three times a second and recorded if the sample varies by more than 5 psi from the last recording, or at least once an hour.

JJ. All pump house alarm points, controller alarm points, and controller status LEDs shall be recorded when they occur.

KK. Every data point shall be time and date stamped down to the second and shall be capable of being transmitted in ASCII over an RS-232 serial link. The serial link shall be compatible with standard laptop computer COM ports and standard dial-up smart modems.

LL. The paperless recorder shall be provided with a built-in smart modem suitable for a standard dial-up telephone line. It shall be both password protected and have a manual security switch to prevent unauthorized access.

MM. It shall also be capable of operating directly on a local area network (LAN), a wide area network (WAN), or the internet with the addition of a TCP/IP server as supplied by the controller manufacturer.

NN. Custom communication software shall be provided to download all the recorded data from the Paperless Recorder, plot the pressure data, display the alarm data, and step through the data on a second by second basis. It shall be capable of communicating through either WAN, LAN or Internet. The software shall run on Windows 95/98/2000 or XP operating systems.

OO. The controller Normal Source short circuit current rating shall be no less than 100,000 RMS symmetrical amps.

PP. A pump running LED light bar shall be provided to indicate when the pump is running and the motor current is greater than 20% of the motor's FLA.

QQ. A Failure to Start LED light bar and SPDT contacts shall be provided to indicate when a start signal is received and the motor current is less than 20% FLA after a field settable time delay of approximately 20, 40, 80, or 160 seconds.

RR. A built-in alarm system shall provide audible indication of Loss of Main A.C. Power, Phase Reversal, and Motor Running. A 92 dB vibrating alarm bell with an alarm silence switch shall be the audible means. The audible alarm shall be powered from the controller power and a separate 120 VAC supervisory power source. Visual indication of Supervisory Power On shall be provided.

SS. A motor overload LED and SPDT remote contacts shall be provided to indicate when the full voltage motor running current is greater than 125% of the FLA.

TT. Visual alarms and a common SPDT remote contact shall be provided in the controller to signal the following local pump room troubles. A precision low voltage sensor and LED light bar shall be provided with SPDT contacts to indicate when the line voltage drops below 85% of controller rated voltage during motor starting or 95% during motor running.

UU. It is intended that the manufacturer of the specified equipment shall be a business regularly engaged in the manufacture, assembly, construction, start up, and maintenance of variable speed fire pump controllers. The manufacturer shall have at least three (3) years of successful experience in providing this equipment.

VV. The manufacture's published warranty certificate for the entire controller shall be submitted to show that it covers parts and labor for a period of 2 years and parts for a period of 5 years. In addition, a guarantee shall be provided to cover parts damaged by transient voltage surges, including lightning, up to a maximum of $5,000 for a period of 5 years.

WW. Certified factory test data shall be provided, if requested, to verify that the following tests have been performed: 1) A complete visual inspection; 2) A complete operational test; 3) A plumbing leakage test done at the maximum system pressure; 4) A pressure switch accuracy test; 5) A 5000 volt dielectric voltage withstand test; 6) A 125% thermal power path test; 7) A 300% no trip test conducted through the entire power path; and 8) A 600% locked rotor test conducted through the entire power path. Further, the factory testing shall also include: 9) Running a motor from the variable frequency drive; 10) Running a variable speed regulation test, and 11) Verifying the bypass operation. The variable frequency drive unit shall be fully programmed by the factory with all settings and programmable parameters recorded and retained with the controller testing and inspection records.

XX. The controller, as manufactured in the United States of America by Master Control Systems, Lake Bluff IL, shall be a model ECVST-480-MW-125."

DELETE Paragraph 2.4 A and REPLACE with new 2.4 A as follows:

"A. The manufacturer shall furnish accessories as follows:

- Automatic Air Release Valve, 0-300 PSI, Cla-Val AARVGBK Series
- Suction and Discharge pressure gauges
- Fire Pump Casing Relief Valve shall be UL listed remote sensing direct acting/pilot type Cla-Val 55LGBK Series
- Eccentric and Concentric fittings, if applicable
- Fire Pump Test Header, 250# flanges with valves"

Section 16231 PACKAGED ENGINE GENERATORS

Paragraph 2.15.A: DELETE first sentence of this paragraph and that sentence with the following:

"Description: Vandal-resistant sound attenuated enclosure rated at 75db."

Section 16790 LOCAL SOUND SYSTEM:

Paragraph 2.2: ADD the following note:

"Conference Room Sound Systems applies to Community Meeting Room 333 and Corporate Room 509,509A & 509B"

1.8 REVISIONS TO DRAWING SHEETS

Sheet LCC-1 Title Sheet:

ADD the following to the Utility Notes:

7) "Prior to the installation of on-site water main ("fire line"), Contractor shall obtain a fire line permit from the Baltimore County Department of Permits and Development Management. Fire line permit requirements shall be strictly followed.
8) All fire line piping, joints, and fittings shall meet the requirements set forth in the NFPA. Pipe shall be UL listed, FM approved and meet the AWWA Standards for Fire Protection Use. Fittings shall have pressure class ratings compatible with the pipe used.
9) The Contractor shall maintain a minimum of 4 feet of cover over the existing and proposed water lines unless otherwise noted. The Contractor shall provide all necessary vertical bends to maintain minimum clearance at crossings with other utilities.
10) Contractor shall furnish the owner with a letter stating that all water mains have been sterilized and pressure tested in accordance with the National Standard Plumbing Code as amended by Baltimore County and procedures established by the Baltimore County Fire Department.
11) The existing 12-inch diameter fire line which runs along column lines E and E.1 of the Owings Mills Learning Center (OMLC) building must be relocated by the OMLC Contractor prior to beginning footing work along the same column lines. The OMLC Contractor shall coordinate with the Maryland Transit Administration (MTA) and the Master Developer of the Owings Mills Metro Center for the timing of the relocation of this line since this line provides service to the MTA rail station and the existing parking garage located to the east of the proposed OMLC building. The invert elevations of the existing water line vary along col-

umn lines E/E.1 from 455.0+/- near the front of the proposed building to 453.5+/- at the back (side of building closest to I-795) of the proposed building. The proposed horizontal location of the relocated water line shall be 6-feet to the east of the outside face of exterior wall of the proposed OMLC building along column lines E/E.1 where the proposed building is the widest. The vertical location of the proposed pipe shall be the same as the existing pipe. The proposed pipe shall be 12-inch diameter, Class 54 Ductile Iron Pipe. The proposed pipe shall be installed and pressure tested, except for the connections to the existing main, prior to removal of the existing main. The sections of the existing main which will be taken out of service may not be abandoned in place.
12) Install concrete anchorage for horizontal bends where the proposed 12" pipe connects to the existing 12-inch pipe using the concrete dimension as shown on Baltimore County Standard Detail W-6.
13) The existing 3/4-inch copper pipe domestic water service line for the existing parking garage shall be connected to the relocated 12-inch water line per the Baltimore County Standard Detail W-21.
14) The proposed 24" Temporary Diversion Pipes and sump areas will be installed by others prior to the OMLC Contractor beginning construction. These temporary pipes and sump areas will have to be removed and backfilled with select structural borrow/backfill by the OMLC Contractor prior to installation of the sections of the proposed OMLC building foundation and first floor slab located in the vicinity of these temporary pipes and sump areas. Prior to removal of the sumps and temporary pipes, the OMLC Contractor shall install appropriate sediment control measures, which will have to be approved by the sediment control inspector, to ensure that the disturbed areas draining to the sump areas will be conveyed to the existing sediment trap after the sumps are removed.
15) The OMLC Contractor shall backfill all excavations for utility removal and/or sediment control work within the limit of work as shown on Drawing LCC-03 with select structural borrow/backfill, compacted."

ADD the following notes:

"FIRE LINE NOTES

1. All rodding, clamps, nuts, bolts, and other restraining devices except thrust blocks, shall be cleaned and coated with bituminous or asphalt. NFPA 24, 2002 Edition, Section 10.8.1, 10.362, and Section 7-2.
2. Ferrous metal piping, if utilized, shall be lined. NFPA 24, 2002 Edition, Section 7-2.
3. All piping, fittings, and joints shall meet the requirements set forth in NFPA 24, 2002 Edition, Section 10.1 through 10.3.5.
4. Thrust blocks shall be provided at all changes in direction in the pipeline, and at all tees, plugs, caps, and bends. Thrust blocks shall conform to the bearing areas noted in the text of the standard and configurations noted in the appendix. NFPA 24, 2002 Edition, Sections 10.8.2 and 10.8.3.
5. Fire lines are subject to a minimum of a 200-PSI hydrostatic test in accordance with NFPA 24 Section 10.10.2.2.1. All thrust blocks, tie rods, valves, fit-

tings, and hydrant drain fields shall be exposed for Fire Department Inspection at the time of the test. Pipe joints may be covered at the time of the test.

6. Fire mains utilizing restrained joints systems shall utilize one of the following per NFPA 24, Section 10.8.3:
   1. Locking mechanical or push-on joints,
   2. Mechanical joints utilizing setscrew retainer glands, or
   3. Bolted flange joints"

Sheet S1.0 Foundation and First Floor Framing Plan:

Footings E.1-1, E-2, E-3, E-3.5, E-4, E-5, and E.1-6.1:
CHANGE the top of footing elevation from (- 6'-8") to (-11'-8").

Sheet E7.6 Electrical Details

Include sheet E7.6 Electrical Details dated 11/05/2010 from the original Contract Documents. This was erroneously omitted in a previous addendum.

END OF ADDENDUM 9

SECTION–V
PROPOSAL

DESCRIPTION OF WORK

Opening of bids Thursday, April 28, 2011 at 2:15 P.M. Local Time

Begin Work within Fifteen (15) Days after NOTICE TO PROCEED.

CALENDAR Days for Completion 545

Liquidated and Other Damages: FIVE THOUSAND DOLLARS ($5,000.00) PER CALENDAR DAY

Cost Group "H" (over $15,000,000.00 **Work Classification:** I-1 plus references

TO BALTIMORE COUNTY, MARYLAND: Construct a six (6) story, 120,000 square foot building. Building systems include concrete frame façade consisting of brick, EIFS, cast stone, curtain wall and storefront, "green" roof with single ply membrane. Site work includes building pad preparation, utilities and loading/receiving area. Owings Mills District 4 c 4.

Note: No successful bidder may withdraw their bid within ninety (90) days after the opening thereof.

The Contractor hereby declares that it has carefully examined the solicitation, plans and specifications, form of contract, Special Provisions and Drawings ***(drawings may be in hard copy or CD format)*** (collectively the "Contract Documents"). The Contractor also hereby declares that it has carefully examined the February 2000 "Standard Specifications for Construction and Materials" and "Standard Details for Construction," collectively the "Applicable County Law" and any and all Department of Public Works revisions thereto as of the date of advertisement. The Contract Documents, the Applicable County Law and the Department of Public Works revisions thereto are collectively the "Specifications" and are incorporated herein. Copies of any and all Department of Public Works revisions including but not limited to Addendum No. 3 and General Conditions Building Projects, are on file and available in the Division of Construction Contracts Administration, County Office Building, Towson, Maryland, and can be downloaded and printed from the internet using Acrobat Reader at: http://www.baltimorecountymd.gov/Agencies/publicworks/standardsandspecs/specsanddetails.html
Also, the Contractor has, to its satisfaction, examined the locality of the proposed work and agrees to furnish all labor, tools, materials, machinery, equipment, and other means of construction called for in the manner provided in the Specifications for the prices shown on the next page(s) and as evidenced by Contractor's signature on the last page thereof.

SCHEDULE OF PRICES

NOTE: **The Bidder shall fill out this Proposal, write in the unit prices in clear numerals, and make the extensions.**

For complete information concerning these items, see Specifications and contract forms.

Addendum No. 9
Revised April 19, 2011