



**ROCKFORD BOARD OF EDUCATION
INVITATION FOR BID ON SUPPLIES, MATERIALS, EQUIPMENT OR SERVICES
FOR SCHOOL DISTRICT NO. 205
ROCKFORD, ILLINOIS**

IFB No. 21-14 West M.S. HVAC Upgrades & Interior Finishes

DATE: February 11, 2021

RE: **ADDENDUM NO. 2**

To All Bidders:

Included are modifications, clarifications and/or corrections for the Project Manual and are hereby made a part of the contract documents. Please attach this addendum to the Project Manual(s) in your possession. Please note the receipt of this addendum on the bid form. Bidders shall review changes to all portions of this work as changes to one portion may affect the work of another.

If you plan to hand deliver your IFB submission on the due date, please note you must check in on the 2nd floor prior to coming to the bid opening. Please allow time for this as late submission will not be accepted.

Refer all questions relative to the business aspect, Instructions to Bidders, Special Conditions, and questions concerning the technical aspect of the documents to the Director of Purchasing by email at purchasingdeptstaff@rps205.com.

ROCKFORD BOARD OF EDUCATION

By: Dane Youngblood
Director of Purchasing

HVAC UPGRADES & INTERIOR FINISHES – WEST MIDDLE SCHOOL
ROCKFORD PUBLIC SCHOOLS 205
ROCKFORD, ILLINOIS

LARSON & DARBY GROUP

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Rockford, IL 61108
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TO: ALL BIDDERS

RE: ADDENDUM #2

Changes to Bidding Documents Dated January 19, 2021

PROJECT: HVAC UPGRADES & INTERIOR FINISHES – WEST MIDDLE SCHOOL
ROCKFORD PUBLIC SCHOOLS 205
ROCKFORD, ILLINOIS

DATE: February 11, 2021

Please attach this Addendum to the Project Manual and Drawings for the referenced project. Take the changes to the Project Manual and Drawings into consideration in preparing your Bid.

Bidders shall make note in writing on Bid Form that this Addendum has been taken into consideration. Failure to do so may be sufficient cause to reject the Bid.

LARSON & DARBY GROUP



By _____
Stephen M. Nelson AIA

This Addendum consists of 1 page, plus materials itemized herein.

I. ADDITIONS OR CHANGES TO THE PROJECT MANUAL

- A. The following revised specification is issued herewith:
- Specification section 23 09 93 "Sequence of Operations for HVAC" is replaced with new revised section 23 09 93R.

II. ADDITIONS OR CHANGES TO THE DRAWINGS

- A. On sheet M3.1:
- ADD "DX Coil shall be VRF compatible" to note #2 on the Classroom Unit Ventilator (UV) Schedule.
 - ADD new note #13 on the Fan Coil Unit (FCU) schedule to read: "Future DX coil shall be VRF compatible".

END OF ADDENDUM #2

SECTION 23 09 93R - SEQUENCE OF OPERATIONS FOR HVAC CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 00 Information for Bidders, and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes control sequences for HVAC systems, subsystems, and equipment.
- B. Related Sections include the following:
 - 1. Section 230900 "Instrumentation and Control for HVAC" for control equipment and devices and for submittal requirements.

1.3 DEFINITIONS

- A. DDC: Direct digital control.

1.4 CLASSROOM UNIT VENTILATORS & FAN COIL UNITS: STEAM HEAT & DX COOLING (ASHREA CYCLE II)

- A. The DDC control system shall provide time of day programming and monitor all points associated with the unit ventilators.
- B. Occupied Mode:
 - 1. O/A cfm greater than or equal to the minimum cfm scheduled to be maintained at all times.
 - 2. When O/A damper has reached the minimum position, blower fan shall energize and air flow proven.
 - 3. On a call for cooling with outside air temperature above 60°F, the F&BP damper shall be fully open to the face position, the steam control valve shall be close, and the DX cooling shall stage between stages 1 & 2 to maintain the room set point temperature of 75°F (adjustable). When the outside air temperature is below 60°F the DX cooling shall be disabled, and the unit shall go into economizer mode.
 - 4. On a call for heating, the steam valve shall be open, and the F&BP damper shall modulate to maintain required room temperature of 70°F (adjustable). When the F&BP damper is at 100% bypass position or the outside air temperature rises above 65°F, the steam valve shall close and the UV shall go into economizer mode.
 - 5. If the space relative humidity rises above 60%, the DX cooling shall be at stage 2 or full cooling and the fan speed shall go to "LOW" position until room relative humidity drops below the set (passive de-humidification cycle).

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C. Economizer Mode:

1. Economizer operation is to be controlled on enthalpy to maintain desired relative humidity.
 - a. If the enthalpy of the return air is less than that of the outside air, UV is to return to normal heating or cooling mode.
2. In the economizer mode, O/A damper and R/A damper shall modulate between their minimum and maximum positions with the DX cooling disabled, the steam control valve closed, and the F&BP damper is fully open to the face position. If M/A temperature drops below 55°F, the O/A damper is to modulate to the minimum position and UV shall go into its heating mode.

D. Unoccupied Mode:

1. Blower fan shall de-energize, O/A damper shall be closed and R/A damper shall be open.
2. On a call for heating, the fan shall energize and once flow has been proven, the steam control valve shall open, and the F&BP damper shall modulate to maintain the room night set back temperature of 55°F (adjustable).
3. On a call for cooling, the fan shall energize and once flow has been proven, the steam control valve shall be close, the F&BP damper shall be fully open to the face position, and the DX cooling shall stage to maintain the room night set back temperature of 80°F (adjustable).
4. If the space relative humidity rises above 65%, the F&BP damper shall fully open to the face position, and the DX cooling shall stage for stage 2 or full cooling with fan speed at "LOW" position until room relative humidity drops below the set point.

E. Morning warm-up heating mode:

1. The unit ventilator fan shall energize and run continuously and the outside air damper shall be closed. The return air damper and the steam control valve shall be fully open , and the F&BP damper shall be in the face position until the room occupied set point temperature is achieved and the unit shall go into occupied mode.

F. Morning Cool-down mode:

1. The unit ventilator fan shall energize and run continuously and the outside air damper shall be closed. The return air damper shall be open, and the DX cooling shall be at full cooling, and the F&BP damper shall be fully open to the face position until the room occupied set point temperature is achieved and the unit shall go into occupied mode.

G. Safety Devices:

1. Freeze Protection - If D/A temperature off steam coil falls below 40°F signal alarm. Blower fan shall de-energize. O/A damper shall close and R/A damper and steam control valve shall open.
2. Fail-Safe - Provide normally closed two-way valves so that when power is lost to the control valve steam flow will be maintained to the coil.
3. No air flow condition - If blower fan is on and no flow is detected after an adjustable time lapse, an alarm shall be signaled.
4. Sensor failure - If any of the following sensors fail, an alarm shall be sounded:
5.
 - a. Room temperature
 - b. Discharge air temperature

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- c. Return air temperature
- d. Outside air temperature
- e. Room relative humidity

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 23 09 93