



Addendum #2

Bid Opportunity: 7198-RW-22 - Tait St. Public School

HVAC Renovations

Closing Date: Tuesday, February 22, 2022 2:00 PM

The following issued by the Board shall form part of the Bid / Proposal Solicitation document. The revisions and additions noted herein along with any attachments shall be read in conjunction with all other related documents. This Addendum shall, take precedence over the previously issued documents where differences occur. Receipt of this addendum must be acknowledged in the Bidding System, bids&tenders.

If you have already submitted a Bid / Proposal, it will be automatically withdrawn as a result of this addendum. You must resubmit the Bid / Proposal acknowledging all addenda and revising your Bid / Proposal to comply with all addenda.

Question 1:

Please confirm no security and/or sprinkler scope of work has been specified for this tender.

Answer 1: There is no security work indicated on the electrical drawings. Any required security work will be included in the cash allowance. Sprinkler work is included in the base contract. Refer to mechanical

drawings and specifications for fire protection work and specifically M501 – Ground & Second Floor Fire Suppression Plan.

Question 2:

Please confirm no new tackboard and whiteboard has been specified for this tender. The existing to be modified.

Answer 2: There is no new tackboard and whiteboard work. The architectural drawings indicate that existing tackboards are to be modified as required to accommodate new work.

Question 3:

Please advise if modification of existing Tackboards shall be performed by pre-qualified millwork subtrades.

Answer 3: Contractor is to determine who is to perform the modification to tackboards.

Question 4:

Please confirm no new doors & frames has been specified for this tender as the specification section has been shared.

Answer 4: There are no new doors and frame in this project. There is a new insulated hollow metal panel that is to be supplied and installed into an existing window frame. The new panel is to provide a cutout for the exterior wall louvre for the vertical unit ventilator in Staff Room 140. Refer to architectural floor plan 1/A2.2 for additional notes.

Question 5:

Please advise if any exiting/modified openings are in loadbearing assemblies. If yes, please provide shoring details.

Answer 5: Contractor is responsible to review the tender documents to confirm which existing walls are loadbearing. Shoring details are the

responsibility of the Contractor alone. Shoring will be required at all exterior wall openings where wall louvres will be installed.

Question 6:

Please confirm the entire roofing scope of work will be covered by allocated Cash Allowance.

Answer 6: The entire roofing scope of work is carried in the Cash Allowance and is to be completed by Spinton Roofing Limited as noted in Specification Section 01 21 00. Roofing work was awarded to Spinton Roofing Limited as per Tender #7238-AA-22 Tait St PS Roofing.

Question 7:

Please advise if data & communication scope of work shall be performed by pre-qualified electrical subcontractors.

Answer 7: Work related to wireless access points is described on the electrical drawings and is to be completed by the Electrical Contractor. Demolition of existing data receptacle in Classroom 9 as described on architectural drawing A2.1, ground floor demolition note 9, is to be completed by the Electrical Contractor.

Question 8:

Please advise if ACM panels shall be performed by the pre-qualified glazing/window subtrades.

Answer 8: Aluminum composite panels are to be provided at the mechanical dog houses. The Contractor is to determine if the Mechanical Contractor or Window Subtrade is to complete this work.

Question 9:

Please see below email by Aim Industrial Inc.

Hi Arash. Unless this is extended to march 14th we will not be quoting. The closing date is to close for the construction climate right now.

Answer 9: No comment.

Question 10:

Hello,

Where in the plans can I find the doors and windows listed in the specifications 08 11 13 & 08 51 13. Are there new windows and doors in this project?

Answer 10: Regarding specification section 08 11 13, refer to answer to question 4 above. Refer also to notes on architectural drawing 1/A2.2 regarding Staff Room 140. Regarding specification section 08 51 13, refer to paragraph 2.1.2 in the specification that describes the scope of work related to provision for new insulated aluminum panel. Refer also to exterior elevation drawing 3/A4.1 on architectural drawing A4.1.

Question 11:

Since the initially scheduled site visit has been canceled via Addendum#01, please advise if any alternate date and timeframe will be available.

Answer 11: Refer to Specification Section 00 21 13 – Instructions to Bidders, paragraph 1.12 Supplemental Site Visits.

Note: Addendum No.2 forms part of the Contract Documents and amends Addendum No.1 and the original Specifications and Drawings issued for tender as noted above and below.

1.Project Manual Specifications:

1.1 REF: Section 00 21 14 - Vendors of Record: The following Electrical Contractors are to be added to the list of Electrical Contractors:

| Electrical Contractor | Phone | Email |
|-----------------------|----------------|--|
| Eby Electric Inc. | (519) 635-7642 | todd@ebyelectric.com |
| Mendler Electric Inc. | (519) 616-1733 | mendlers@rogers.com |

1.2 REF: Section 01 21 00 Allowances

1. Under paragraph 1.4 Allowance Schedule, add the following, "6. Security work". There is no change to the total cash allowance value.

1.3 REF: Mechanical Specifications:

1. Attached Mechanical Addendum, dated February 17, 2022 and prepared by DEI Consulting Engineers, is hereby issued and forms an integral part of this addendum.

2.Architectural Drawings: No revisions to architectural drawings.

3.Structural Drawings: No revisions to structural drawings.

4.Mechanical Drawings:

- 4.1. Attached Mechanical Addendum, dated February 17, 2022 and prepared by DEI Consulting Engineers, is hereby issued and forms an integral part of this addendum.
- 4.2. Demolish and dispose of the existing exhaust fan assembly in the window transom in Classroom 9 as described on architectural reflected ceiling plan drawing 1/A3.1 and architectural exterior elevation drawing 3/A4.1.

5. Electrical Drawings and Specifications:

- 5.1. The Electrical Contractor is responsible to disconnect and remove in their entirety, the data and power receptacles noted to be demolished in Classrooms 9 and 10 along the exterior window frames, as noted on architectural drawing 1/A2.1.

END OF ADDENDUM NO.2.

February 17, 2022

Client: ward99 architects inc.

RE: Tait Street Public School - HVAC Renovations
Cambridge, Ontario

Job #: 21047

Attn: Ms. Tina Ranieri-D'Ovidio, Principal, B.Arch, OAA, MRAIC, LEED, AP® BD + C

MECHANICAL ADDENDUM

MECHANICAL

Item 1 – Specification Clarification

1.0 Refer to Mechanical Specifications

- .1 Mechanical specifications issued for tender include 316 pages total. Pages 1 thru 158 correspond to the sections indicated in Section 20 00 01 'Mechanical Specification Index'. Pages 159 thru 316 are duplicate prints or misprints and are to be removed from the project. Information included in pages 159 thru 316 shall not be considered relevant to this project.

Item 2 – Chemical Pot Feeder – 4 Port

2.0 Refer to Specification Section 23 25 13 'Water Treatment for Closed Loop Hydronic Systems'

- .1 Chemical pot feeder shall be 4 port configuration.

Item 3 – Unit Ventilators and Condensing Units

3.0 Refer to Specification Section 23 82 23A 'Hydronic Unit Ventilators – Vertical Floor Mount'

- .1 Revise Item 2.1.5.1 to include Carrier as an acceptable manufacturer.
- .2 Remove Item 2.1.6 "Equipment shall include terminal strip as indicated in sentence 2.1.14." Equipment shall not include on-board microprocessor controller.
- .3 Revise Item 2.1.6 to read as follows:
"Factory installed freeze stat wired to shut down fan and close outside air damper."

Item 4 – Building Control System and Control Sequence Drawings

4.0 Refer to Specification Section 25 40 11 'Building Control System' and Attached BAS Sequence Drawings

- .1 Item 4.2.1 reads as indicating that graphical sequence of operations will be provided by BAS contractor. This graphical sequence has been provided by the BAS contractor and is attached to this addendum.



Item 5 – Exhaust Fan Renumber

5.0 Refer to Drawing M302

.1 Existing exhaust fan located in Vestibule 807 shall be re-tagged as EF-5.



Jesse Anderson, P.Eng.,

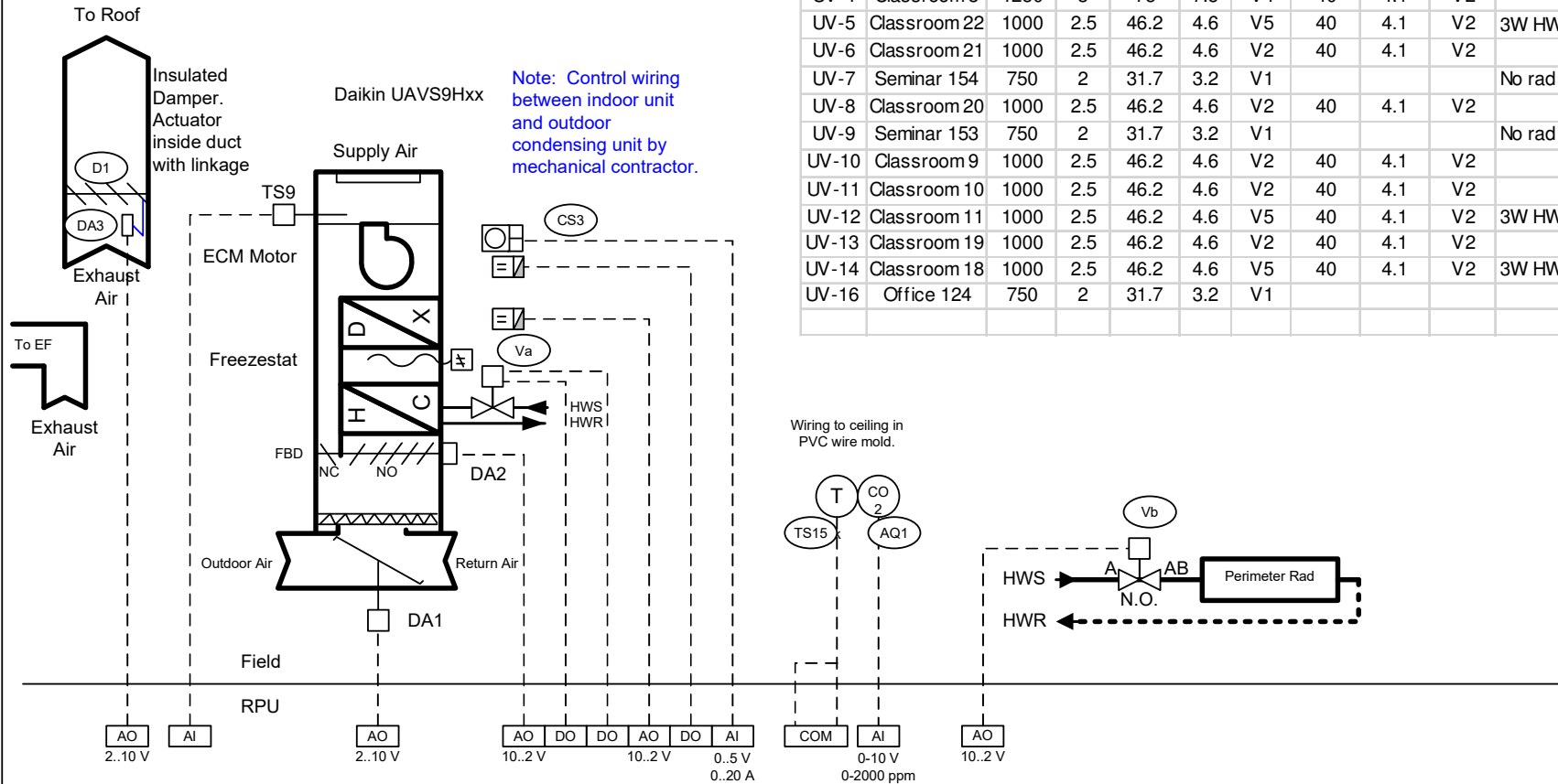
21047 Addendum (M-controls and specs) Feb 17 22

ja/sad



Notes:

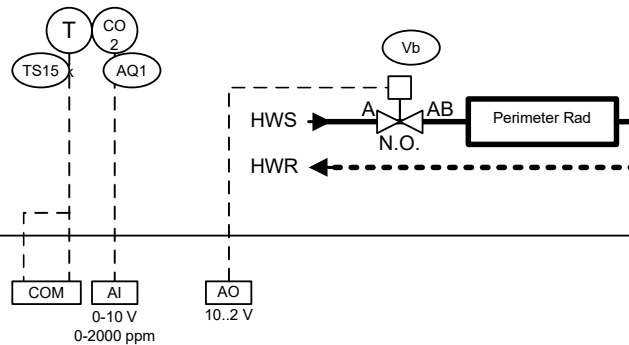
- 1) 120V power for controls is provided by Div. 16.
- 2) Freezestat is factory wired to shut down fan and close outside air damper.
- 3) DA1: Belimo actuator supplied with unit (SR) "A1".
- 4) DA2: Belimo actuator supplied with unit (NSR) "A2".
- 5) TS9: Supply air sensor supplied with unit (10 k).



13 Systems As Shown

| UV | Room | Supply (cfm) | DX (tons) | Htg (MBh) | HW (gpm) | HtgVlv (Va) | Rad (MBh) | Rad (gpm) | RadVlv (Vb) | Notes |
|-------|--------------|-----------------|--------------|--------------|-------------|----------------|--------------|--------------|----------------|--------|
| UV-3 | Classroom 7 | 1000 | 2.5 | 46.2 | 4.6 | V5 | 40 | 4.1 | V2 | 3W HWV |
| UV-4 | Classroom 8 | 1250 | 3 | 75 | 7.5 | V4 | 40 | 4.1 | V2 | |
| UV-5 | Classroom 22 | 1000 | 2.5 | 46.2 | 4.6 | V5 | 40 | 4.1 | V2 | 3W HWV |
| UV-6 | Classroom 21 | 1000 | 2.5 | 46.2 | 4.6 | V2 | 40 | 4.1 | V2 | |
| UV-7 | Seminar 154 | 750 | 2 | 31.7 | 3.2 | V1 | | | | No rad |
| UV-8 | Classroom 20 | 1000 | 2.5 | 46.2 | 4.6 | V2 | 40 | 4.1 | V2 | |
| UV-9 | Seminar 153 | 750 | 2 | 31.7 | 3.2 | V1 | | | | No rad |
| UV-10 | Classroom 9 | 1000 | 2.5 | 46.2 | 4.6 | V2 | 40 | 4.1 | V2 | |
| UV-11 | Classroom 10 | 1000 | 2.5 | 46.2 | 4.6 | V2 | 40 | 4.1 | V2 | |
| UV-12 | Classroom 11 | 1000 | 2.5 | 46.2 | 4.6 | V5 | 40 | 4.1 | V2 | 3W HWV |
| UV-13 | Classroom 19 | 1000 | 2.5 | 46.2 | 4.6 | V2 | 40 | 4.1 | V2 | |
| UV-14 | Classroom 18 | 1000 | 2.5 | 46.2 | 4.6 | V5 | 40 | 4.1 | V2 | 3W HWV |
| UV-16 | Office 124 | 750 | 2 | 31.7 | 3.2 | V1 | | | | |

Wiring to ceiling in
PVC wire mold.



Job #:

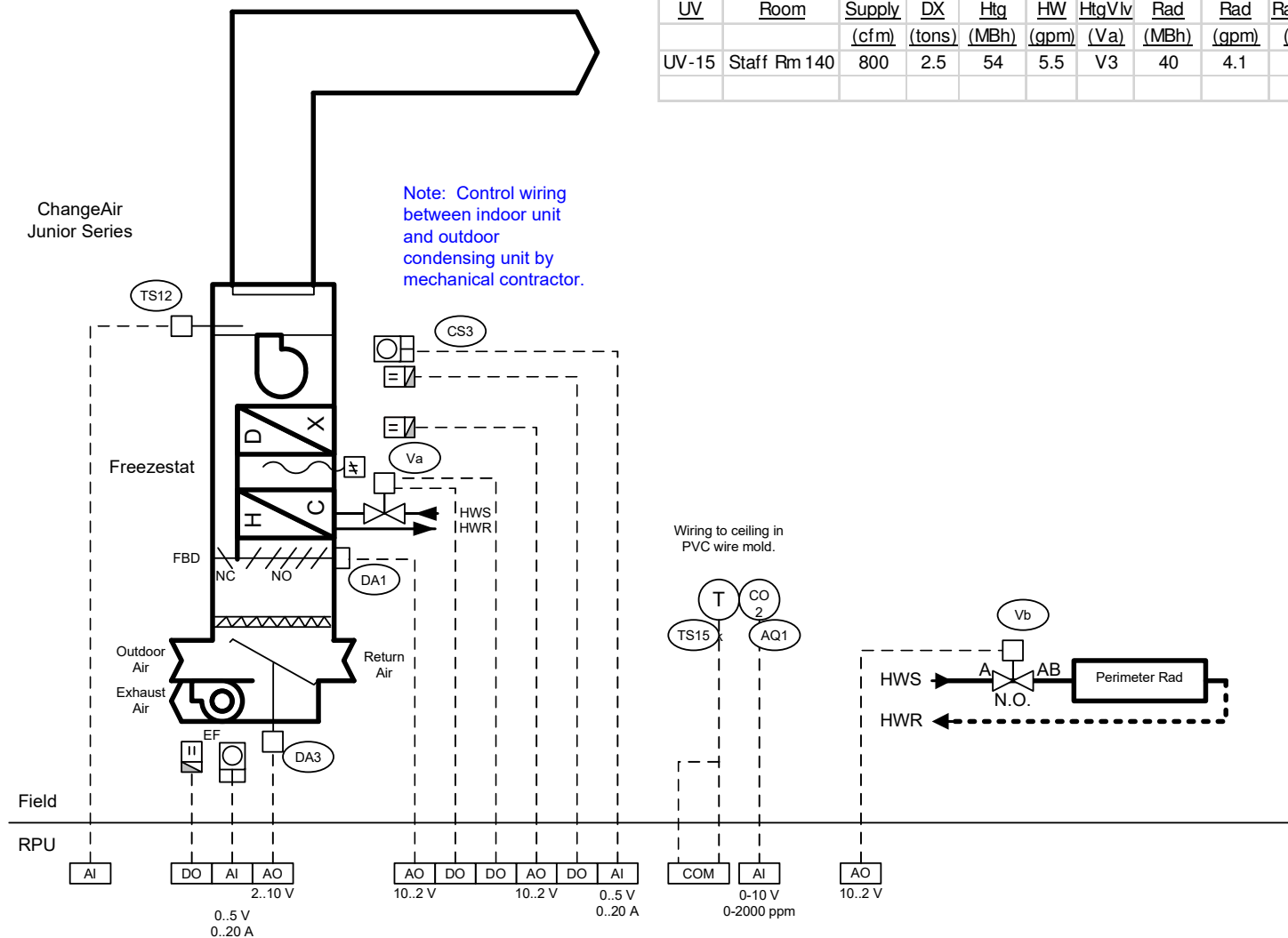
Job Name: Tait Street Public School
HVAC Renovations

Owner:
Waterloo Region
District School Board

Drawn By:

Revision Date:
February 10, 2022

Title: **Unit Ventilator Controls**



| 1 System As Shown | | | | | | | | | | |
|-------------------|--------------|-----------------|--------------|--------------|-------------|----------------|--------------|--------------|----------------|------------------|
| UV | Room | Supply (cfm) | DX (tons) | Htg (MBh) | HW (gpm) | HtgVlv (Va) | Rad (MBh) | Rad (gpm) | RadVlv (Vb) | Notes |
| UV-15 | Staff Rm 140 | 800 | 2.5 | 54 | 5.5 | V3 | 40 | 4.1 | ? | Vertical, Ducted |

Job #:

Job Name: Tait Street Public School
HVAC Renovations

Owner:
Waterloo Region
District School Board

Drawn By:

Revision Date:
February 10, 2022

Title: **Ducted Unit Ventilator Controls**

Sequence of Operation

Unoccupied Mode

The fan is off, the mixing dampers are in the 0% outdoor air position, the heating valve is open, the DX cooling is off and the face & bypass damper is in the face position. The convector valve modulates (as first stage heating) and the fan cycles (as second stage heating) to maintain the unoccupied heating setpoint. If the pushbutton on the room sensor is pressed, the system returns to the occupied mode for a period of two hours.

Occupied Mode

An optimized start routine for heating calculates the system occupancy time for the convector. The fan runs continuously. Fan status is monitored by a current sensor. The room temperature sensor controls the mixing dampers (for free cooling) face and bypass dampers (for heating), coil heating valve and convector valve in sequence to maintain setpoint. The convector valve is the first stage of heating. The setpoint can be adjusted +/-2°C at the room sensor. The associated exhaust fan exhausts the air as the outdoor air damper opens to 35%, then the exhaust damper in the room modulates open as the damper opens further.

Limits and Safeties

The supply air temperature sensor acts as a low limit to open the face and by-pass damper as required to maintain setpoint which is reset from outside air temperature.

Mixed air damper minimum position control is provided during occupied periods (initially 10% OA).

If the outside air temperature exceeds the free cooling setpoint based on networked outdoor humidity, the mixing dampers return to minimum position.

The mixed air temperature sensor modulates the outdoor air dampers as a low limit to ensure temperature does not fall below setpoint.

If the hot water heating supply water temperature is below 40°C and the OAT is below 2°C, the UV turns off.

If the freezestat trips, the fan shuts down, OAD closes, F&BP damper goes to bypass, the heating valve opens and an alarm is generated at the BAS.

When the outside air temperature is below 3°C, the heating valve is fully open (5-2°C).

The supply air temperature sensor acts as a software freezestat, and will shut down the system if the temperature falls below 3/5°C for more than 30 seconds (5 minute delay on auto-reset).

The CO₂ sensor will increase the amount of minimum outside air from minimum to 40% as the CO₂ level increases from 1000 ppm to 1200 ppm.

The supply fan has a delay-off time of 90 seconds.

DX cooling has a minimum-off time of 5 minutes.

DX cooling is disabled when the outside air temperature is below the global DX disable setpoint or when the fan is off.

Alarms

An alarm is indicated at the operator's terminal if any of the following occur:

Fan status does not match fan start/stop signal.

Room temperature too low (14/15°C) or too high (35/34°C).

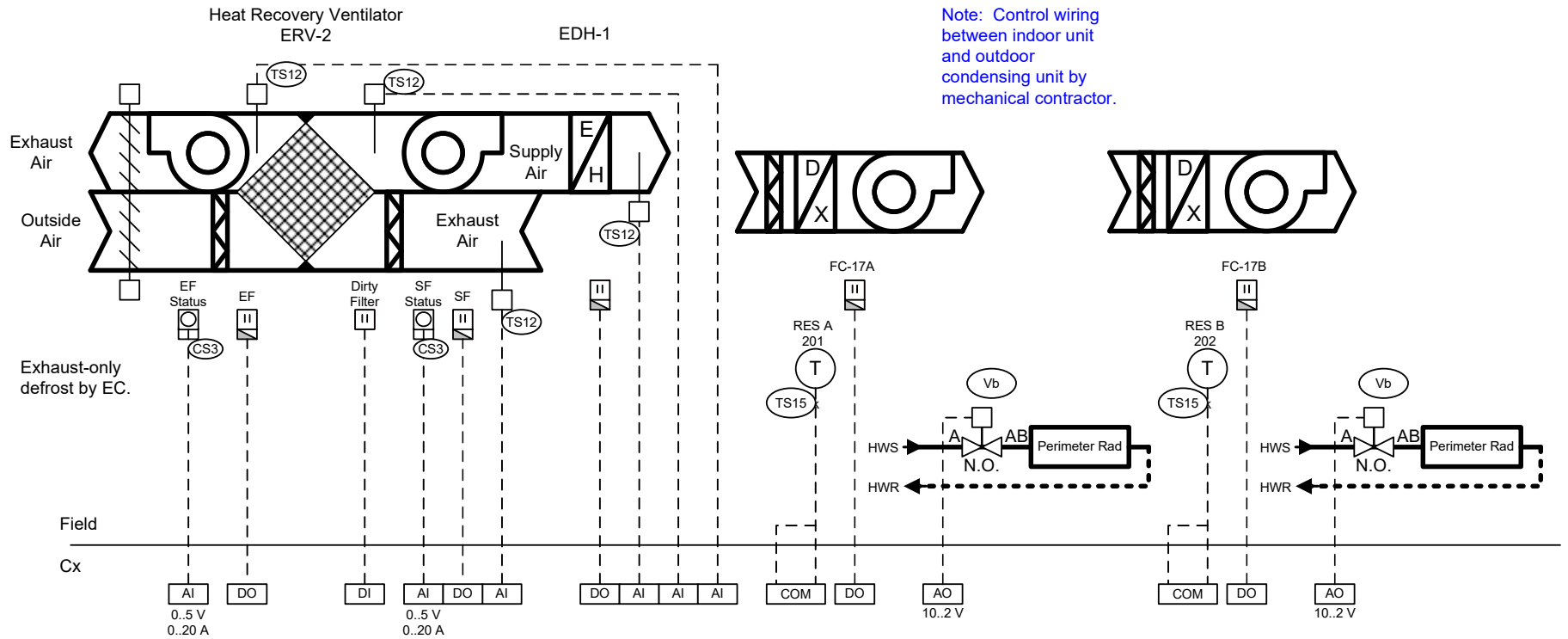
Mixed air temperature too low (5/7°C) or too high (40/38°C).

Supply air temperature too low (5/8°C) or too high (65/55°C).

Software freezestat tripped or hard-wired freezestat tripped.

CO₂ too high (1700/1600 ppm) or too low (250/300 ppm).

| | | | | | |
|--|---|--|-------------------------------------|---|---|
| | Job #: | Owner: Waterloo Region District School Board | Drawn By: | Title: Unit Ventilator Sequence of Operation | 3 |
| | Job Name: Tait Street Public School HVAC Renovations | | Revision Date: February 10, 2022 | | |



| One System As Shown | | | | |
|---------------------|-----|-------------|-------|-------|
| UNIT | CFM | Aldes Model | Cntrl | Notes |
| ERV-2 | 80 | E80-HRX | x | |
| | | | | |
| | | | | |

| | | | | | |
|--|---|--|-------------------------------------|--------------------------------|---|
| | Job #: | Owner: Waterloo Region District School Board | Drawn By: | Title: Floor 2 RES HVAC | 4 |
| | Job Name: Tait Street Public School HVAC Renovations | | | | |
| | | | Revision Date: February 10, 2022 | | |

SEQUENCE OF OPERATION

Unoccupied Mode

The heat recovery unit and fan coils are off. The rads provide heating to maintain the unoccupied heating setpoints.

Occupied Mode

The HRV runs continuously when the ventilation time schedule is on. The room temperature sensors modulate the rad valves to maintain the heating setpoint and cycle the fan coils to maintain the cooling setpoint (minimum 23.5°C).

Limits & Safeties

- 1) The unit has internal frost controls (exhaust fan stops, supply fan recirculates air).
- 2) The supply air temperature sensor acts as a software freeze-stat (-1/5°C, 3 minute delay, auto reset after 5 minute delay).
- 3) The fans stop on a fire alarm condition.
- 4) The whole building heating and cooling are enabled by outdoor air temperature and calendar.

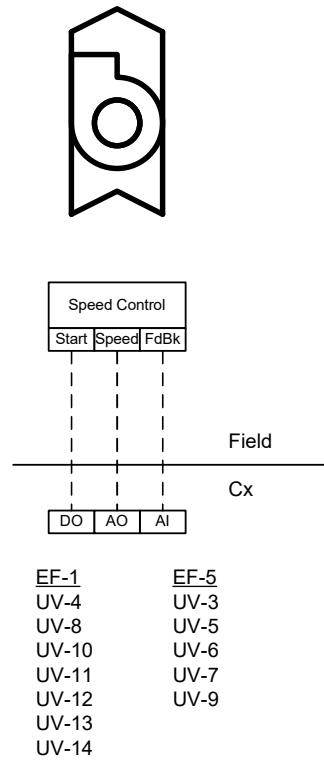
Alarms

An alarm will be generated upon the following conditions:

- 1) Room temperature is too cold (14/16°C) or too hot (36/34°C).
- 2) Supply fan or exhaust fan in incorrect state.
- 3) Supply air temperature too high (35/33°C) or too low (1/3°C).
- 4) Return air temperature too high (40/38°C) or too low (14/15°C).
- 5) Exhaust air temperature too high (40/38°C) or too low (-10/-8°C)..
- 6) Fan runtime exceeded weekly setpoint.

| | | | | | |
|--|---|--|-------------------------------------|--|---|
| | Job #: | Owner: Waterloo Region District School Board | Drawn By: | Title: Floor 2 RES HVAC Sequence of Operation | 5 |
| | Job Name: Tait Street Public School HVAC Renovations | | Revision Date: February 10, 2022 | | |

CLASSROOM EXHAUST

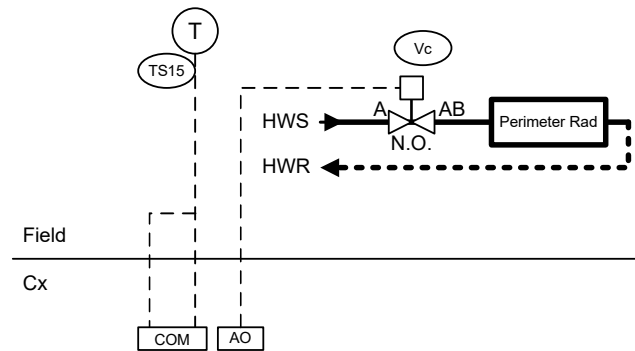


SEQUENCE OF OPERATION

The fan operates according to the Minimum outdoor air time schedule. Fan speeds ramp up from 30% to 100% as average UV OAD increases from 10% to 35%.

An alarm is generated at the BAS if the fan status does not match the start/stop signal.

PERIMETER RADIATION

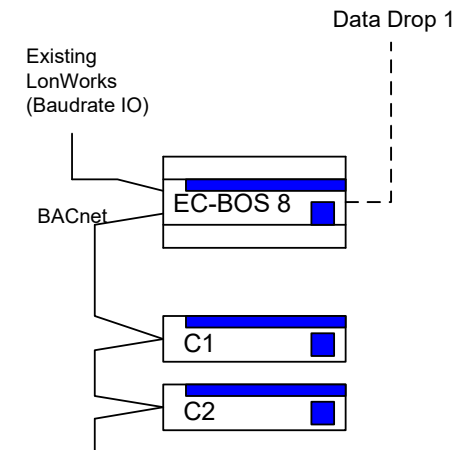


| Two Systems As Shown | | | |
|----------------------|-------|-------|------------------------|
| Room | (MBh) | Valve | Notes |
| Storage 125 | ? | ? | No rad info on M301 |
| Stage 148 | 60 | V4 | No stat show n on M301 |
| | | | |
| | | | |

SEQUENCE OF OPERATION

Room temperature sensor TS15 controls valve V4 for heating and cycles unit heater to maintain setpoint, which is reduced during unoccupied hours. Local setpoint adjust and pushbutton override is provided. An alarm is generated at the BAS if the room temperature is too cold (14/16°C) or too hot (38/36°C).

NEW WEBSERVER



Job #:

Job Name: Tait Street Public School
HVAC Renovations

Owner:
Waterloo Region
District School Board

Drawn By:

Revision Date:
February 10, 2022

Title: **Miscellaneous Controls**