**KAWARTHA PINE RIDGE DISTRICT SCHOOL BOARD**

**Tender**
**PUR19-24-ITT**

**Norwood District High School Renovations Phase 2**

**ADDENDUM NO. 2**

This addendum shall form an integral part of the Tender documents for the above noted Tender and shall be read in conjunction therewith. This addendum shall, however, take precedence over all requirements as it pertains to the particular and specific items noted below.

1. **Add:** Mechanical Addendum (March 5, 2019) by DEI Consulting Engineers (10 pages)

**END OF ADDENDUM NO. 2**

DEI Consulting Engineers
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March 5, 2019

Client: Moffet & Duncan Architects Inc.
5052 Dundas St. W.
Toronto, Ontario
M9A 1B9

RE: Norwood District High School
Asphodel-Norwood, Ontario
Job #: 18296
**Tender No. PUR-19-24-ITT**

Attn: Mr. Robert Ferkul, M.Arch. OAA Partner/Ms. Mariana Vaca

# MECHANICAL ADDENDUM

## MECHANICAL

**Item 1**

1.0 Refer to Attached Specification Section 23 25 13
- .1 Add Specification Section 23 25 13 'Water Treatment for Closed Loop Hydronic System'.

**Item 2**

2.0 Refer to Specification Section 25 20 11
- .1 Add item 3.6.10 as follows:
  - .1 **Lighting Control**
    - .1 Provide programmable control of two(2) plug control network through the OWS. Connect to nearest electrical contractor where indicated.
      - .1 Plug control network, 2 point.

**Item 3**

3.0 Refer to Drawing M1.1
- .1 In General Notes, delete "NFPA-13 Sprinkler Contractors Material and Test Certificate", "Mechanical Seismic Restraint Engineer's Inspection/Conformance Letter", and "TSSA Certificate of Authorization for Split Refrigeration Systems (exceeding 3 or 5 tons)" from point 'G'.

**Item 4**

4.0 Refer to Drawing M2.2
- .1 Add note '10' to remove existing grilles in Classroom 116.
- .2 Revise note "Freeze existing 80Ø HWS&R main, cut and remove existing 32Ø HWS&R piping" to read "Freeze existing 32Ø HWS&R main, cut and remove existing 32Ø HWS&R piping".

**Item 5**

5.0 Refer to Drawing M3.2 and Attached Sketch SKM-1
- .1 Connect new grilles to existing ductwork in Classroom 116.
- .2 Revise notation in Boys 132, Girls 131, and Corridor H06A on domestic and hydronic piping to be existing piping as per SKM-1.

**Item 6**

6.0 Refer to Drawing M3.4 and Attached Sketches SKM-2 and SKM-3

.1 Add note to connect new grille to existing ductwork in Art Classroom 107 as per SKM-2.

.2 Revise notation in Prep Room 1058 and Corridor H08 on domestic and hydronic piping to be existing piping as per SKM-2.

.3 Run thermostat wiring outside of Lecture Room/Cafetorium 173 as per SKM-3.

.4 Remove and reinstall/re-pipe radiator to suit new drywall in Lecture Room/ Cafetorium 173 as per SKM3.

Matthew White, P.Eng.,
Associate
18296 Addendum (M)(SKM-1, 2, 3) to M&D Mar 5 19
kv

## Part 1 General

### 1.1 RELATED SECTIONS

.1 Plumbing Specialties and Accessories.

.2 Hydronic Systems – Steel

### 1.2 REFERENCES

.1 All codes, standards, etc. as referenced shall be the latest edition

.2 American Society of Mechanical Engineers (ASME).

.3 ANSI/ASME Boiler and Pressure Vessel Code, Section VI

### 1.3 SHOP DRAWINGS AND PRODUCT DATA

.1 Submit shop drawings and product data in accordance with general requirements.

### 1.4 CLOSEOUT SUBMITTALS

.1 Submit operation and maintenance data for incorporation into manual specified in general requirements

.2 Include the following:

.1 Log sheets as recommended by manufacturer

.2 Test reports

## Part 2 Products

### 2.1 MANUFACTURER

.1 Equipment, chemicals, service by one supplier.

.2 Acceptable manufacturer:

.1 Ashland Inc. (no alternates)

### 2.2 POT FEEDER

.1 Welded steel, pressure rating 1200 kPa (175 psi). Temperature rating: 90°C (194°F).

### 2.3 CHEMICAL FEED PIPING

.1 Resistant to chemicals employed. Pressure rating: 1200 kPa (175 psi).

**2.4 CHEMICAL FEED PUMPS**

.1 Top-mounted electronic metering diaphragm type: flow range 0-100%, adjustable, plus or minus 1.0% accuracy (repetitive), on-off operation, with pressure relief valve, check valve, foot valve, injection fitting.

.2 Piston type: flow range 0-100%, adjustable, plus or minus 1.0% accuracy (repetitive), on-off operation, with stainless steel piston, pressure relief valve, double ball and check valves.

**2.5 SHIPPING/FEEDING CHEMICAL CONTAINERS**

.1 High density moulded polyethylene, with liquid level graduations, cover.

.2 Agitators: as required by manufacturer.

**2.6 CONDUCTIVITY CONTROLLER**

.1 Fully transistorized, suitable for wall or flush panel mounting, linear over full measuring range of 0-5000 micro omhs.

.2 Insensitive to phase angle shifts, capable of operating on 95-130 Volts without affecting accuracy, power, bleedoff status lights.

**2.7 CONDUCTIVITY PROBES**

.1 Dual carbon elements in PVC holder, quick disconnect, self-locking connection.

**2.8 WATER TREATMENT FOR HYDRONIC SYSTEMS**

.1 Hot water heating system: Pot feeder, 25 l (6.6 gal) or 19 l (5 gal).

.2 Micron filter for each pot feeder:

.1 Capacity 2% of pump recirculating rate at operating pressure.

.2 Six (6) sets of filter cartridges for each type, size of micron filter.

.3 Balancing valve set for 2% pump capacity.

**2.9 CHEMICALS**

.1 Provide 1 year's supply.

**2.10 TEST EQUIPMENT**

.1 Provide one set of test equipment for each system to verify performance.

.2 Complete with carrying case, reagents for chemicals, all specialized or supplementary equipment.

**2.11 CLEANING CHEMICALS**

.1 Provide as required to make system clean.

.2 Cleaner chemical: compatible and of the same manufacturer of the water treatment supplier.

**2.12 RECORD MANAGEMENT**

.1 Provide cards and card holder mounted on wall adjacent to each pot feeder.

**Part 3 Execution**

**3.1 INSTALLATION**

.1 Install HVAC water treatment systems in accordance with ASME Boiler Code Section VII, and requirements and standards of authorities having jurisdiction, except where specified otherwise

.2 Ensure adequate clearances to permit performance of servicing and maintenance of equipment

**3.2 CHEMICAL FEED PIPING**

.1 Install crosses at all changes in direction. Install plugs in all unused connections

**3.3 WATER TREATMENT SERVICES**

.1 After entire new and existing system is cleaned as specified elsewhere, provide monthly water treatment monitoring and consulting services for period of one year after system start-up. Provide written report to consultant after each visit. Service to include:

.2 Initial water analysis and treatment recommendations.

.3 System start-up assistance.

.4 On site system testing and recording of treated hydronic system.

.5 Operating staff training.

.6 Visit plant every 7 days during first month of operation and as required until system stabilizes, and advise consultant in writing on treatment system performance..

.7 Provide monthly visits with reports after system has stabilized to the satisfaction of the owner.

.8 Provide necessary monthly recording charts and log sheets for one year operation.

.9 Provide necessary laboratory and technical assistance.

.10 Instructions and advice to operating staff to be clear, concise and in writing.

**3.4 START-UP**

.1 Start-up water treatment systems in accordance with manufacturer's instructions.

**3.5 SYSTEM COMMISSIONING AND TRAINING**

.1 Commissioning and training shall be provided by installing water treatment sub-contractor and water treatment supplier.

.2 Timing:

.1 After start-up deficiencies rectified.

.2 After start-up and before TAB of connected systems.

.3 Pre-commissioning Inspections:

.1 Verify:

.1 Presence of test equipment, reagents, chemicals, details of specific tests to be performed, operating instructions.

.2 Suitability of log book.

.3 Currency and accuracy of initial water analysis.

.4 Required quality of treated water.

.4 Commissioning procedures - applicable to all Water Treatment Systems:

.1 Establish, adjust as necessary and record all automatic controls and chemical feed rates.

.2 Monitor performance continuously during commissioning of all connected systems and until acceptance of project.

.3 Establish test intervals, regeneration intervals.

.4 Record on approved report forms all commissioning procedures, test procedures, dates, times, quantities of chemicals added, raw water analysis, treated water analysis, test results, instrument readings, adjustments made, results obtained.

.5 Establish, monitor and adjust automatic controls and chemical feed rates as necessary.

.6 Visit project at monthly intervals after commissioning is satisfactorily completed to verify that performance remains as set during commissioning (more often as required until system stabilizes at required level of performance).

.7 Advise Engineer in writing on all matters regarding installed water treatment systems.

**.5 Commissioning procedures - Closed Circuit Hydronic Systems:**

.1 **Analyse water in system.**

.2 **Based upon an assumed rate of loss approved by Engineer, establish rate of chemical feed.**

.3 **Record types, quantities of chemicals applied.**

.4 **Provide written verification of glycol solution concentration.**

.6 Training:

.1 Commission systems, perform tests in presence of, and using assistance of, assigned O&M personnel.

.2 Train O&M personnel in softener regeneration procedures.

.7 Certificates:

.1 .1 Upon completion, furnish certificates confirming satisfactory installation and performance.

.8 Commissioning Reports:

.1 To include system schematics, test results, test certificates, raw and treated water analyses, design criteria, all other data required by Consultant.

.9 Commissioning activities during Warranty Period:

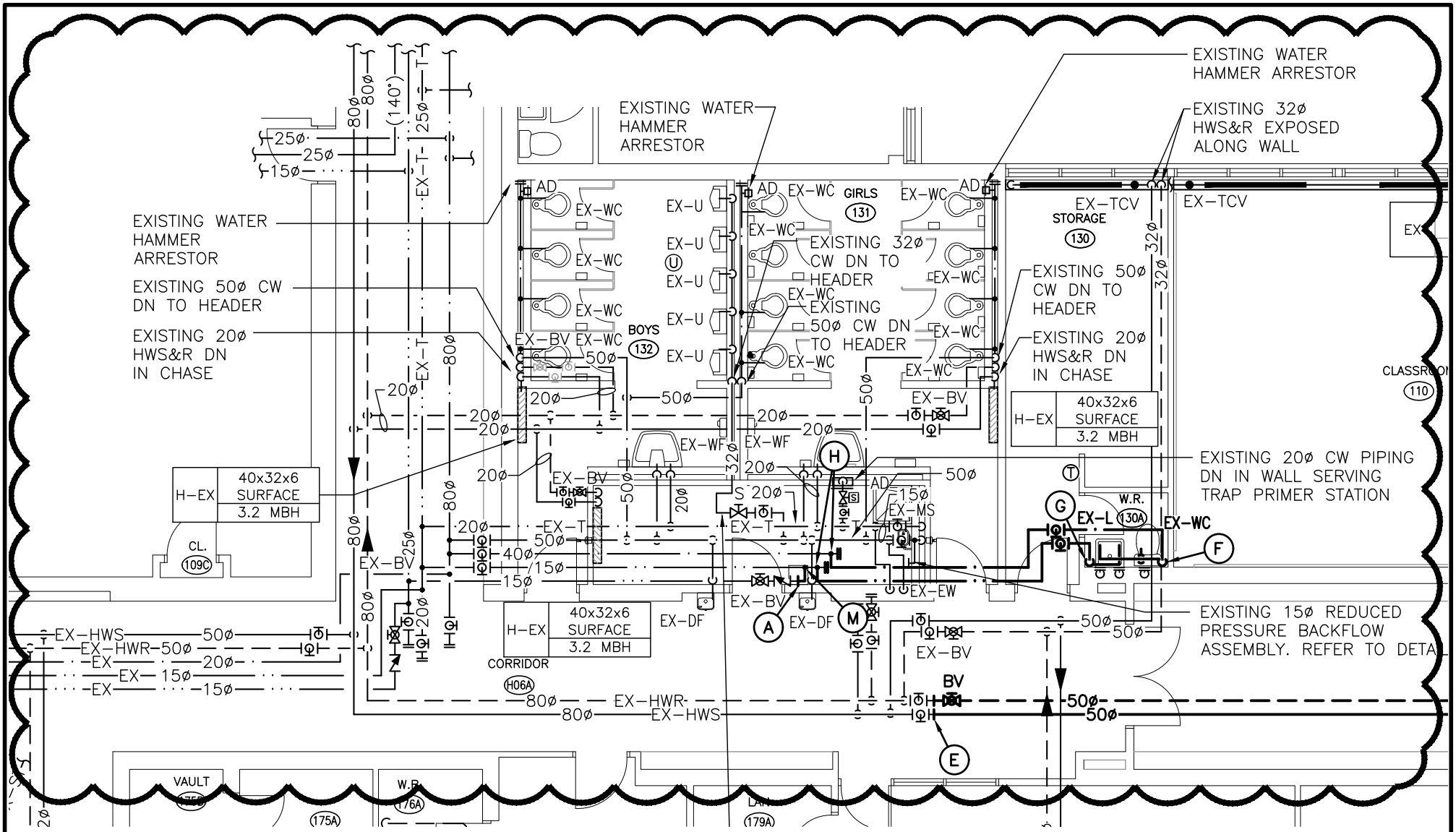
.1 Check out water treatment systems on regular basis and submit written report to Consultant.

**3.6 CLEANING OF MECHANICAL SYSTEM**

.1 Coordinate cleaning of mechanical systems with mechanical contractor.

.2 Provide copy of recommended cleaning procedures and chemicals for approval by Consultant.

**END OF SECTION**




# PART PLAN 'A' – RENOVATION

SCALE: 1:100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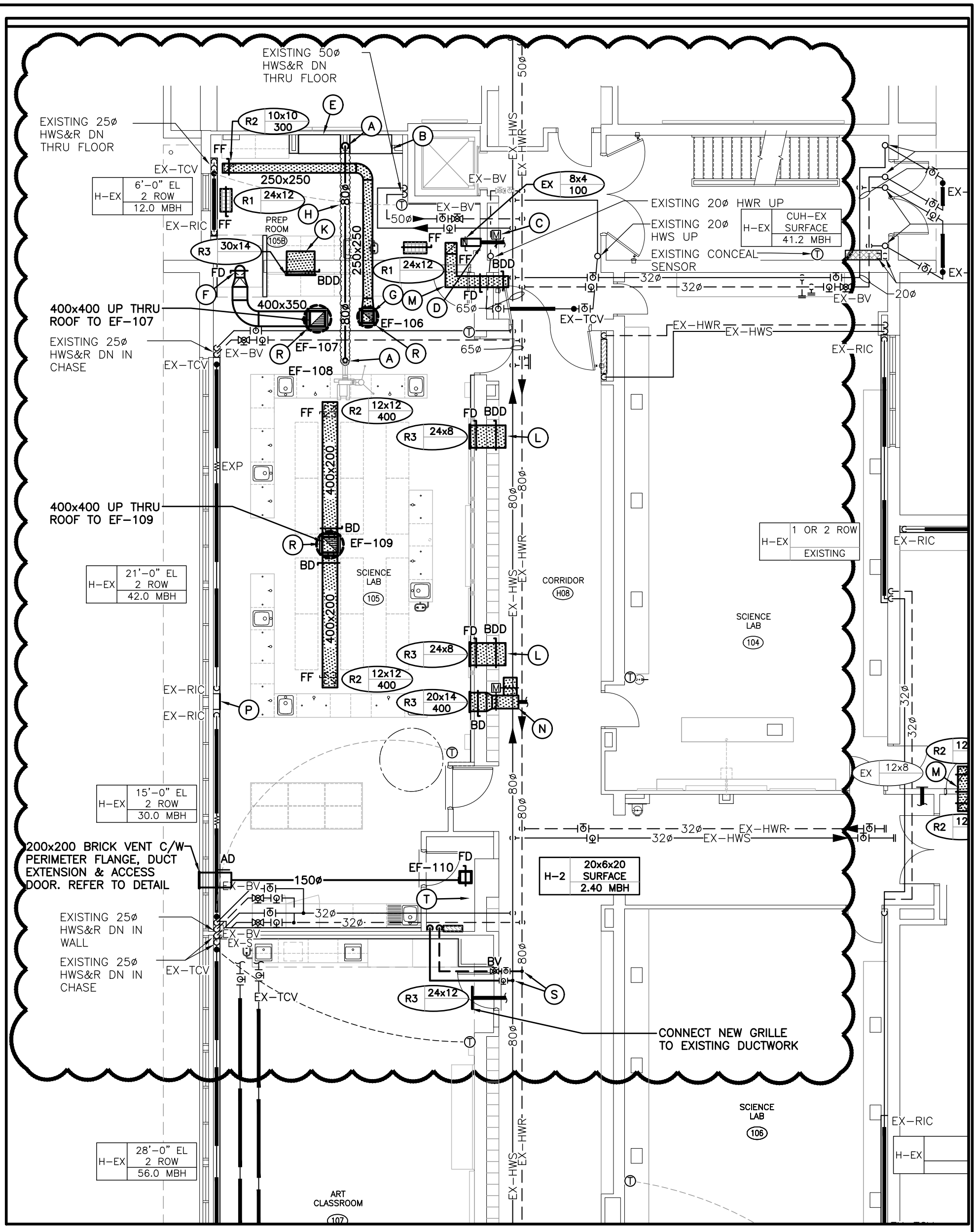
NORWOOD DISTRICT HIGH SCHOOL RENOVATIONS 2019 ADDENDUM

SKM-1




# PART PLAN 'B' – HYDRONIC & VENTILATION RENOVATION

SCALE: 1:100

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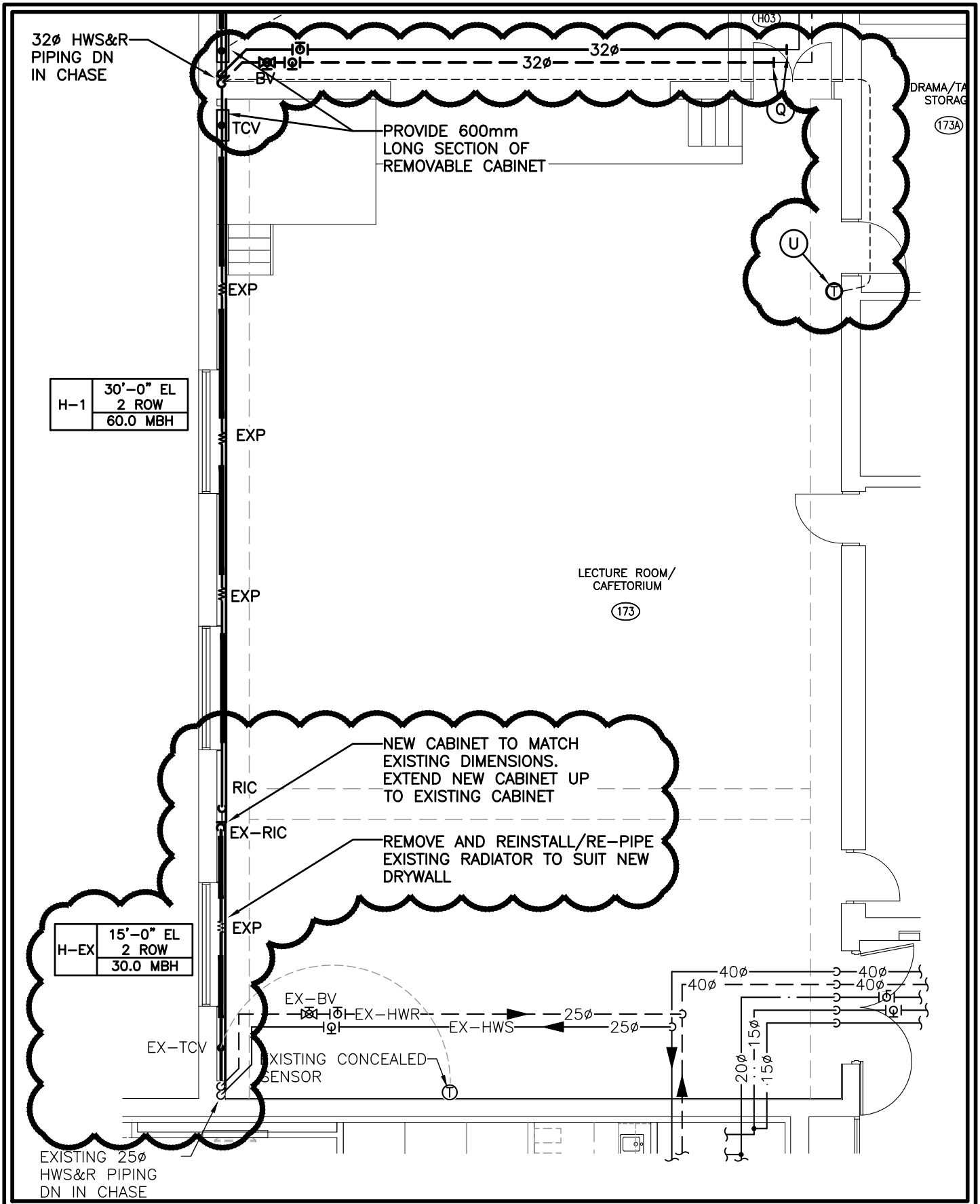
NORWOOD DISTRICT HIGH SCHOOL RENOVATIONS 2019 ADDENDUIM

SKM-2




# PART PLAN 'C' – RENOVATION

SCALE: 1:100

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NORWOOD DISTRICT HIGH SCHOOL RENOVATIONS 2019 ADDENDUM

SKM-3