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## SOLICITATION AMENDMENT MODIFICATION DE L'INVITATION

The referenced document is hereby revised; unless otherwise  
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Ce document est par la présente révisé; sauf indication contraire,  
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<b>Title - Sujet</b> CCGC Mechanical and Sprinklers	
<b>Solicitation No. - N° de l'invitation</b> EB144-190543/A	<b>Amendment No. - N° modif.</b> 010
<b>Client Reference No. - N° de référence du client</b> EB144-19-0543	<b>Date</b> 2018-08-16
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$PWA-121-5750	
<b>File No. - N° de dossier</b> PWA-8-80020 (121)	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2018-08-21</b>	<b>Time Zone</b> <b>Fuseau horaire</b> Atlantic Daylight Saving Time ADT
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Russell (PWA), Alex	<b>Buyer Id - Id de l'acheteur</b> pwa121
<b>Telephone No. - N° de téléphone</b> (902) 401-8180 ( )	<b>FAX No. - N° de FAX</b> (902) 496-5016
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<b>Signature</b>	<b>Date</b>

*This Addendum and all Addenda amends and forms an integral part of the Bidding and Contract documents and shall be read in conjunction with the same.*

**PART 1**      **SPECIFICATION REFERENCE**

**Item 1.1**      **SECTION 08 11 13 – METAL DOORS AND FRAMES**

- .1 Add the following to 2.4:
  - .8 Threshold: Smooth and flush, to provide a seal for door in closed position.
  - .9 Steel Astragal: Overlapping or meeting stile, supplied loose for field installation. Overlapping astragal to be a minimum 2 mm (14 ga.) thick.
  - .10 Acoustic seals: Provide perimeter and bottom seals, tested as part of the ASTM E90 assembly to meet the specified STC rating.

**Item 1.2**      **SECTION 22 42 01 PLUMBING SPECIALITIES AND ACCESSORIES**

- .1 Under 2.9 Water Meters add the following: “.5 Provide remote reader and 4-20ma output for connection to EMCS.”
- .2 Add the following document to the Specification: “Appendix E – Additional Constraints”

**Item 1.3**      **SECTION 23 30 05 DOMESTIC WATER HEATERS**

- .1 Under 2.1 Electric Hot Water Tanks, clause 2.1 change tag from “HWT10-1” to “HWT11-1” and under clause 2.2 change tag from “HWT 11-1” to “HWT10-1”.

**Item 1.4**      **SECTION 23 05 00 COMMON WORK RESULTS – MECHANICAL**

- .1 Item 1.10.1: Add: “
  - .43 Fan Coil Units.
  - .44 Wall Mounted & Floor Mounted Chilled Water A/C Units
  - .45 Vertical Stacked Chilled Water Fan Coil Units”.

**Item 1.5**      **SECTION 23 07 13 THERMAL INSULATION FOR DUCTING**

- .1 Add the following:
  - 2.7 FIRE RATED DUCTWRAP OF KITCHEN EXHAUST HOOD DUCTWORK AND CHEMICAL FUME HOOD EXHAUST DUCTWORK**
    - .1 Provide two (2) layers of 38mm (1-1/2”) fire rated duct wrap on all kitchen exhaust hood ductwork and chemical fume hood exhaust ductwork (EF1-1) located inside the building.

- .2 Duct wrap shall be certified in accordance with ASTM E2336, NFPA 96 & ULC for 2 hour fire protection.
- .3 Install in accordance with manufacturer's installation recommendations, NFPA 96 and to authorities having jurisdiction."

.2 Item 3.4 INSULATION TABLE:

- .1 In table, revise "D1/DR" to read "D1/D2".
- .2 Where fire wrap is indicated, revise thickness to 2 layers – 38mm each
- .3 Add the following to Table:

Service	Insulation	Thickness
AHU1-1 Return Air	D1/D2	25mm

**Item 1.6 SECTION 23 07 18 THERMAL INSULATION FOR EQUIPMENT**

- .1 Add the following items:

**2.8 E-6 CALCIUM SILICATE BLOCK 40°C TO 400°C**

- .1 Materials:
  - .1 CGSB 51-GP-2M-76+Amdt-Dec-76, calcium silicate.
- .2 Applications:

Service	Thickness
.1 Hot Wells	50mm
.2 Field Fabricated Breechings	50mm layers

**2.9 FINISHING CEMENT TO 450°C**

- .1 Materials:
  - .1 To CAN/CGSB-51.12-M86.
  - .2 12mm thick.
- .2 Applications:
  - .1 Breechings."

**3.4 SPECIAL REQUIREMENTS**

- .1 Breechings: weld steel clips and/or angle anchors. Stretch 25 mm mesh stainless steel wire over insulation, anchor to wire or bands. Finish with finishing cement and canvas."

**Item 1.7 SECTION 23 07 20 THERMAL INSULATION FOR PIPING**

- .1 Item 3.3 Thickness: Revise as follows:

### 3.3 THICKNESS

- .1 Provide insulation on piping per Minimum HVAC Pipe Thickness (mm) MNECB Table 5.2.4.3 as indicated on drawings. Design temperature range for each system for insulation purposes shall be as follows:

Service	Tag	Design Temperature Range (C)
Chilled Water Supply	CH.W.S.	5-13
Chilled Water Return	CH.W.R.	5-13
Heating Water Supply	H.W.S.	41-60
Heating Water Return	H.W.R.	41-60
Heating Water Supply	H.T.W.S.	61-93
Heating Water Return	H.T.W.R.	61-93
Boiler Water Supply	B.W.S	61-93
Boiler Water Return	B.W.R.	61-93
Heating Exchanger Water Supply	H.X.W.S.	Below 5
Heating Exchanger Water Return	H.X.W.R.	Below 5
Heat Rejection Water Supply(H)	H.R.W.S. (H)	41-60
Heat Rejection Water Return (H)	H.R.W.R(H)	41-60
Heat Recovery Water Supply(C)	H.R.W.S. (C)	Below 5
Heat Recovery Water Return (C)	H.R.W.R(C)	Below 5
Seawater Supply	S.W.S	Below 5
Seawater Return	S.W.R	Below 5
Make-Up Water	M.U.W.	5-13
Domestic Cold Water	D.C.W.	5-13
Domestic Hot Water	D.H.W.	41-60
Domestic Hot Water Recirculation	D.H.W.R.	41-60
Rain Water Leader	R.W.L	5-13
Heat Pump Condenser Water Supply	C.W.S	41-60
Heat Pump Condenser Water Return	C.W.R	41-60

Service	Tag	Design Temperature Range (C)
Heat Pump Evaporator Water Supply	E.W.S	5-13
Heat Pump Evaporator Water Return	E.W.R	5-13
Humidifier Steam	H.S.	94-121
Glycol Heating Supply	G.L.S.	41-60
Glycol Heating Return	G.L.R.	41-60

**Item 1.8 SECTION 23 31 13.01 METAL DUCTS – LOW PRESSURE**

**.1 “ 2.14 PREFABRICATED METAL DUCTWORK**

- .1 Provide single wall prefabricated metal ductwork type 304 stainless steel on discharge ductwork from EF1-1 up through roof. Installation complete with discharge cone and guy wire supports.”

**Item 1.9 SECTION 23 33 15 DAMPERS – OPERATING**

- .1 Item 2.1: Revise references to galvanized sheet steel to aluminum.
- .2 Item 2.3.2 Materials: Revise references to galvanized sheet steel to aluminum.
- .3 3.1 Installation: Add the following:  
“.5 All fresh air and exhaust air dampers shall be insulated aluminum dampers.

**Item 1.10 SECTION 23 34 23 PACKAGED ROOF AND WALL EXHAUSTERS**

- .1 Item 2.3 Kitchen Exhaust Fan: Add the following:  
“.10 Fan motors suitable for VSD operation with remote mounted VSD.”

**Item 1.11 SECTION 23 36 00 AIR TERMINAL UNITS**

- .1 Item 2.1 Fan Coil Units: Add the following:  
“.5 Filters: 25mm deep pleated with MERV 13 rating. Provide one set of spare filters for each unit.”
- .2 Item 3.1 Installation: Add the following:  
“.6 Provide acoustic lined return air plenums below vertical mounted units.  
.7 Provide supports from floor as required for vertical units.  
.8 Ensure filter banks are accessible. Provide filter banks in return air ducts where necessary for accessibility for servicing.”

**Item 1.12 SECTION 23 37 20 LOUVERS, INTAKES AND VENTS**

- .1 Add the following items:

“3.1.7 For louvers serving more than one air system, provide separate plenums for each air system. Divide Louvre area in proportion to the airflow of each system.”

**Item 1.13 SECTION 23 38 13 COMMERCIAL KITCHEN HOODS**

- .1 Item 2.1 Kitchen Exhaust Hood. Add the following:

“.9 Hoods complete with integral supply air plenum and supply grilles.”

- .2 Item 2.3 Demand Control Ventilation (DCV) System: Revise paragraph .9 to read:

“.9 Division 25 will be responsible for wiring all control interconnections and primary circuits. Division 25 shall provide cables between the hoods and associated control panels and room temperature sensor(s) in accordance with manufacturers installation instructions. Manufacturer shall provide two space/room temperature sensors. Division 25 shall provide labor to run low voltage and 120/1 wiring cables and required control power per submittal drawing.”

**Item 1.14 SECTION 23 72 00 AIR-TO-AIR ENERGY RECOVERY EQUIPMENT**

- .1 Item 2.2.3 Blowers: Delete EMC motors. Motors shall be sized to meet fan performance as indicated. Units with variable speed drive, speed drives for both air streams shall be provided by Division 25.

- .2 Item 2.2.5 Revise as follows:

“.1 Electrical to be as indicated on drawings.”

- .3 Item 2.2.6 Controls: Add the following:

.3 Unit shall be complete with internal defrost controls.

.4 Unit shall be complete with terminal stripe for control connections to EMCS as indicated.”

**Item 1.15 SECTION 23 81 40 WATER SOURCE HEAT PUMPS**

- .1 Item 2.3.7.3 Controls shall also include Chilled Water Discharge Temperature and Set Point adjustment.

**Item 1.16 SECTION 23 82 19 - FAN COIL UNITS**

.1 Please add the following:

**2.1 WALL-MOUNTED / FLOOR MOUNTED CHILLED A/C UNITS**

- .1 General: Ducted, ductless wall or floor mounted as indicated.
- .2 Cabinet: steel, 1.2 mm thick, wall, ceiling or recessed mounting as indicated.
- .3 Elements: stainless steel sheathed with corrosion protected steel aluminum fins covering full length of element.
- .4 Blower motors: multiple speed, single phase, ECM.
- .5 Fan delay switch.
- .6 Fresh air duct adapter where indicated.
- .7 Filter: replaceable permanent washable and reusable.
- .8 Finish: three stage phosphatized treatment followed by coats air dry baked enamel with final coat colour.
- .9 Valves: complete with cooling and heating (where indicated) control valves.
- .10 Assembly fully wired to one outlet location.
- .11 Complete with integral condensate pump.
- .12 Multiple knockouts for up to 1-1/2" (38 mm) diameter conduit.
- .13 **Drain Pan:**
- .14 Control: Complete with terminal strip for control; low, medium and high fan speed, heating and cooling valve control and unit stop/start.
- .15 Wall supports.

**2.3 VERTICAL STACK CHILLED WATER FAN COIL**

- .1 Type: Vertical Stack Chilled Water Fan Coil with Chilled Water Cooling Coil, discharge arrangement, hose kits and all accessories.
- .2 Capacity: Shall be indicated on the drawings.
- .3 Cabinets:
  - .1 The one-piece unit cabinet shall be fabricated of reinforced 22-gauge continuous G60 galvanized steel. All internal assemblies shall be welded and treated to prevent corrosion.
  - .2 The cabinet shall be insulated 13mm thick 0.9kg density thermal and acoustical insulation meeting material standard ASTM-C1071 and have an integral water repellent. The insulation shall have a fungi and bacteria resistant barrier with no growth conforming to ASTM-C1338, ASTM G21 and ASTM G22 and meet fire safety standards under NFPA90A and NFPA90B.

- .3 Cabinet return and discharge air openings shall be factory cut and flanged on all sides. All insulation located behind cabinet openings must be removed by the unit manufacturer prior to shipment. Knockouts for field cutting are unacceptable.
- .4 Cabinet design shall allow a minimum 125mm below the chassis access opening to allow for full height base- board.
- .4 Chilled Water Cooling Coil shall be copper tubes mechanically bonded to aluminum fins, multi-circuited to insure maximum coil distribution and effectiveness, and a minimum of three rows deep. The coil shall be rated to withstand 600 psig refrigerant working pressure. Face velocity shall not exceed 400 feet per minute to insure quiet operation and positive condensate drainage.
- .5 Unit complete with 2-way chilled water modulating control valve.
- .6 Drain Pan:
  - .1 The drain pan shall collect and drain condensate that may form from any component internal to the heat pump and shall be fabricated of welded and soldered 20 Ga. 304 stainless steel. The copper condensate drain shall be rolled and soldered into the pan.
- .7 Fans:
  - .1 The fan shall be slow speed forward curved centrifugal type capable of two fan speeds and shall be accessible for removal and maintenance through the return air opening.
- .8 Motors:
  - .1 Fan motors for heat pumps under 2-ton shall be of the permanently lubricated ECM type as required; suitable for the current characteristics shown on the drawings and shall have built-in thermal overload protection.
  - .2 Provide a two-speed fan switch located behind the acoustic return air panel. The fan switch must be configurable for use with available fan speed motor taps.
- .9 Return air panel complete with return air grille.
- .10 Filters:
  - .1 Filters shall be 1" thick disposable pleated media, MERV 13.
- .11 Power Supply:
  - .1 Single point field power connection is made to unit junction box through either of the 7/8" knockouts located on the side or on the top of the cabinet as shown on the drawings.
  - .2 Each unit shall include a non-fused disconnect switch, factory mounted and wired.

- .12 Control:
  - .1 Complete with terminal strip for control; low, medium and high fan speed, heating and cooling valve control and unit stop/start.
- .13 Installation:
  - .1 Install in accordance with manufacturer's installation instructions. Install units plumb and level and maintain manufacturer's recommended clearances for the unit and accessories.
  - .2 Follow manufacturer's recommendations for cleaning and flushing.

### **3.16 INSTALLATION**

- .1 Mount hang units.
- .2 Make power and control connections.
- .3 Conceal all piping and wire services.

#### **Item 1.17 SECTION 23 82 36 FINNED TUBE RADIATION AND PANEL HEATERS**

- .1 Item 2.2 Finned Tube Radiation: Delete this item.
- .2 Item 2.3 Panel Radiant Heaters: Add the following:
  - “.10 Complete with full trim covers (centre, left, right, endcaps inside and out) to conceal all valves and pipe services.
- .3 Item 3.2 Installation: Add the following:
  - “.9 Provide full trim covers to conceal all valves and pipe services for a continuous wall to wall appearance.
  - .10 Provide floor pedestals or wall supports as recommended by manufacturer.”

#### **Item 1.18 SECTION 25 30 02 EMCS: FIELD CONTROL DEVICES**

- .1 Item 2.18 Control Dampers: Dampers to be provided by Division 23.
- .2 Add the following:

### **2.26 OCCUPANCY SENSOR (OS)**

- .1 Provide occupancy sensors where indicated. Sensors shall be wall mounted or ceiling mounted where indicated (OS).
- .2 Sensor shall be complete with two (2) contacts. One for EMCS connection; one for future interfacing with lighting.
- .3 Provide interface occupancy sensors with heating and air conditioning units controlling space.”

**Item 1.19 SECTION 26 05 05 SELECTIVE DEMOLITION ELECTRICAL**

- .1 Throughout demolition contractor shall maintain services to downstream devices outside of the areas being renovated at all times.
- .2 Contractor shall refer to Asbestos Plan for known Hazardous Materials on site.

**Item 1.20 SECTION 26 05 29 HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS**

- .1 The use of t-bar support clips shall be permitted for final connections to light fixtures only (ie: on fixture drop portion of wiring before connection to fixture).

**Item 1.21 SECTION 26 27 26 WIRING DEVICES**

- .1 All wiring devices shall be specification grade throughout project.

**Item 1.22 SECTION 26 50 00 LIGHTING**

- .1 Replace section in its entirety with the attached section.

**Item 1.23 SECTION 28 31 00.01 MULTIPLEX FIRE ALARM SYSTEM**

- .1 Replace section in its entirety with the attached section.

**PART 2 DRAWING REFERENCE**

**Item 2.1 ELECTRICAL ALL DRAWINGS GENERAL**

- .1 HU#-# and HUM#-# are interchangeable. Both tags represent dehumidifiers.
- .2 Where manual ON/OFF toggle switches are indicated for controls motor rated toggle switches shall be used for fan coils (FC), wall mounted fan coils (WM) and vertical fan coils (VFC). Where toggle switches are indicated for Pumps, Exhaust Fans, Cabinet Heaters or Unit Heaters they shall be thermal overload switch c/w thermal overload protection.
- .3 New feeders shown originating from HVAC switchboard located in Cabot Electrical Room 1403D serving equipment in all buildings, except D'Iberville, Foster and Hopkins shall utilize the East Tunnel for routing.

- .4 New Feeders shown originating from HVAC switchboard located in Cabot Electrical Room 1403D serving equipment in D'Iberville shall utilize the West Tunnel for routing.
- .5 New feeders shown distributed from Board 'RVP' to residence and hotel buildings shall follow shortest pathways possible through corridors to new mechanical attic spaces. Coordinate location of floor penetrations with mechanical services routed to same.

**Item 2.2      DRAWING 01-EP-101 ELECTRICAL POWER CABOT WEST LEVEL 100 & 200 NEW WORK**

- .1 Exhaust fan located in Boardroom 2029 indicated as EF1-11 shall be labelled EF1-16.

**Item 2.3      DRAWING 01-EP-107 ELECTRICAL POWER CABOT EAST LEVEL 100 NEW WORK**

- .1 Revise equipment layout in Boiler Room 1403C, Mechanical Room 1403F and Corridor 1403G as indicated on sketch 01-EP-SK001.

**Item 2.4      DRAWING 01-EP-108 ELECTRICAL POWER CABOT EAST LEVEL 200 NEW WORK**

- .1 Locate exhaust fan EF1-15 in Washroom 2802, circuit from new 1P, 15A breaker panel PIC. Provide a wall mounted toggle switch for manual on/off control.

**Item 2.5      DRAWING 01-E-602 ELECTRICAL CABOT SCHEDULES**

- .1 Delete EF1-19.
- .2 Revise EF1-18 to be 600V, 18.65kW, located in Storage Room 4150 controlled by variable speed drive supplied by mechanical, installed and wired by electrical. Feed from splitter indicated on sketch 01-E-SK001.
- .3 Add combination magnetic breaker type starter to EF1-17 c/w 2 N.O. & 2 N.C. auxiliary contacts, hand-off auto selector switch, LED on light supplied, installed and wired by Division 26.
- .4 Revise bond wires associated with the following equipment, indicated as #12 to be #10:
  - .1 AHU1-4.
  - .2 HUM1-3.
  - .3 HUM1-5.

**Item 2.6      DRAWING 01-E-604 ELECTRICAL CABOT DETAILS**

- .1      Revise detail 5 as indicated on 01-E-SK001 (note that EF-14 shall no longer be fed from splitter located in room 4150A).
- .2      Update feeders to equipment shown in single line details as follows:
  - .1      HUM1-2 to be 3#8 AWG + #10Cu. bond, 21mmC.
  - .2      HUM1-7 to be 3#8 AWG + #10Cu. bond, 21mmC.
  - .3      HUM1-8 to be 3#8 AWG + #10Cu. bond, 21mmC.
  - .4      Bond wire in primary feeder serving transformer feeding panelboard PID to be #10.
  - .5      Bond wire in feeder to HUM1-9 to be #10.
  - .6      Bond wire in primary feeder serving transformer feeding panelboard P1E to be #10.
  - .7      Bond wire in feeder to HUM1-4 to be #10.

**Item 2.7      DRAWING 01-E-605 ELECTRICAL CABOT SCHEDULES AND DETAILS**

- .1      Update feeders to equipment shown in single line details as follows:
  - .1      Bond wire in feeder to ERV1-1 to be #10.
  - .2      Bond wire in primary feeder serving transformer feeding panelboard P1A to be #10.
  - .3      Panel P1 shall be located on wall perpendicular to panel P1H (in front of Storage Room 1403E).
  - .4      Add two (2) 3P, 20A direct connections (3#12 AWG + #12Cu. bond, 21mmC) to new pumps P-14A and P14B. Pumps shall be controlled by variable speed drives supplied and installed by mechanical, wired by electrical. Provide new breakers for dedicated feeds.

**Item 2.8      DRAWING 01-E-606 ELECTRICAL CABOT SINGLE LINE DIAGRAM REVISIONS PART I OF V**

- .1      Scope of work for panel 3080 shall be replacing the existing feeder and pathways with 2x(3#250 MCM + #1Cu. bond, 63mmC) from the HVAC switchboard in Cabot 1403D to a 200A non-fused disconnect switch located in D'Iberville P123 (disconnect switch shall also be provided by electrical).
- .2      Scope of work for panel 3152 shall be replacing the existing feeder and pathways with 3#250 MCM + #1Cu. bond, 63mmC from the HVAC switchboard in Cabot 1403D to a new panel located in Mechanical Room D112. Panel shall be new c/w breakers as indicated on sketch 01-E-SK-002. Revise breaker in HVAC Switchboard to be 200A.

**Item 2.9      DRAWING 01-MC-102 - CONTROLS – CABOT SCHEMATICS**

- .1      Delete detail 2: *Cabot Cold Storage Heat Recovery Control System*. Provide controls as per detail 11/ *MC103 - Cabot Freezer /Cooler Heat Recovery Control* (Sketch 01-MP- SK008 issued in Addendum 7).

**Item 2.10      DRAWING 01-MH – 107 HVAC PIPING – CABOT EAST LEVEL 100 NEW WORK**

- .1      Revise drawing as per Sketch 01-MH-SK003 (This Addendum).

**Item 2.11      DRAWING 01-MH – 401 HVAC PIPING – CABOT BOILER ROOM NEW WORK**

- .1      Revise arrangement in Boiler Room as per piping schematic Sketch 01-MH-SK017 (This Addendum).

**Item 2.12      DRAWING 01-MH – 601 HVAC PIPING – CABOT PIPING SCHEMATIC BOILER ROOM**

- .1      Revise piping schematic as per Sketch 01-MH-SK017 (This Addendum).

**Item 2.13      DRAWING 01-MV-101 - VENTILATION – CABOT WEST LEVEL 100 & 200 NEW WORK**

- .1      Louvre L1-19: Provide separate plenums for each air system. Divide Louvre area in proportion to the airflow of each system.
- .2      Exhaust fans EF1-11 & EF1-16: Exhaust from these systems to discharge to the outside through Louvre L-1-41 (Refer to drawing 01-MV-102). Provide separate plenums (300x 300mm) for each air system.

**Item 2.14      DRAWING 01-MV-103 - VENTILATION – CABOT CENTRAL LEVEL 100 NEW WORK**

- .1      Mark louvre located in exterior soffit near grid lines 18X & 29Y as L1-52.

**Item 2.15      DRAWING 01-MV-107 - VENTILATION – CABOT EAST LEVEL 100 NEW WORK**

- .1      Louvre L1-47: Provide separate plenums for each exhaust fan system. Divide Louvre area in proportion to the airflow of each system.
- .2      1708 Cadet Dining: Revise return grille to fan coil FC1-16 from RG11 to RG10.

- .3 1708 Cadet Dining: Revise the three (3) SG5 grilles with three (3) SG6 grilles, same airflow. Provide additional SG6 grille on FC1-1.16 system. Locate on wall above door to corridor 1706 Corridor. Revise airflows to 245 l/s through each.

**Item 2.16 DRAWING 01-MV-108 - VENTILATION – CABOT EAST LEVEL 200 NEW WORK**

- .1 Mark return grilles located in Library 2502 as RG11.

**Item 2.17 DRAWING 01-MV-601 - VENTILATION – CABOT SCHEDULES**

- .1 Add 01- Cabot Ceiling Return / Exhaust Register /Grille Schedule per Sketch 01-MV-SK010 (this Addendum).
- .2 Add 01 – Cabot – Linear Slot Diffuser Schedule per attached Sketch 01-MV-SK011 (this Addendum).

**Item 2.18 DRAWING 01-MV-603 - VENTILATION – CABOT SCHEDULES**

- .1 Louvre Schedule: Revise Louvre L1-13 to the following:  
  
Mark: L1-13, Location: Storage Room 4150, Serving: Atrium Smoke Exhaust Fan EF1-18, Airflow: 23,650 l/s, Dimensions: (Trapezoid shape) 1800mm height x 2700mm wide, Comments: Replace existing louvre with new louvre to fit opening c/w birdscreen.
- .2 Louvre Schedule: Add Louvre L1-51 as follows:  
  
Mark: L1-52, Location: Exterior soffit outside Office 1303C, Serving: Fan SF1-2, Airflow: 520 l/s, Dimensions: 450 mm height x 900mm wide, Comments: New louvre c/w birdscreen.
- .3 Cabot – Sidewall Return/Exhaust Grille Schedule: Add Return Grille RG11 as follows:  
  
Mark: RG11, Type: Linear Bar Return Grille, Style: Fixed 15 degree deflection 13 mm spacing, Grille Face: 5000 x 75 mm, Overall size: 5000 x 75 mm, Capacity: 702 l/s, NC Level: 20, SP: 3.3 Pa, Comments: 25 mm Surface mounted border with concealed bracket fastening.

**Item 2.19      DRAWING 02-E-602 ELECTRICAL ARCTIC ATLANTIC SCHEDULES AND DETAILS**

- .1      Revise bond wire indicated for HUM2-3 to be #10.

**Item 2.20      DRAWING 02-MV-601 - VENTILATION - ARCTIC/ATLANTIC SCHEDULES**

- .1      Arctic/Atlantic – Vertical Stack Chilled Water Fan Coil Schedule: Revise electrical voltage for all units to 208 volts.

**Item 2.21      DRAWING 02-MH – 501 HVAC PIPING – ARCTIC /ATLANTIC DETAILS**

- .1      Detail 5 Non-Freeze Heating Coil Piping Detail: Pump installation shall be complete with strainer on pump inlet and check valve on pump discharge.

**Item 2.22      DRAWING 02-MH-601 - HVAC PIPING - ARCTIC/ATLANTIC SCHEDULES**

- .1      Arctic/Atlantic – Wall-Mounted/Floor-Mounted Chilled A/C Unit Schedule: Revise electrical voltage for all units to 208 volts.

**Item 2.23      DRAWING 03 -MC-SK001 MECH ROOM D112 CONTROL REVISIONS (This Addendum)**

- .1      Add Control Valve CV-3 and AO control point. Refer to Sketch 03-MH-SK007 (This Addendum).

**Item 2.24      DRAWING 03-MV-601 - VENTILATION - PACIFIC/GREAT LAKES SCHEDULES**

- .1      Pacific/ Great Lakes – Vertical Stack Chilled Water Fan Coil Schedule: Revise electrical voltage for all units to 208 volts.

**Item 2.25      DRAWING 03-MC-102 - CONTROLS PACIFIC / GREAT LAKES SCHEMATICS**

- .1      Detail 1: Revise Hydronics Systems Control Schematic per Sketch 03-MC-SK001 (This Addendum).

- Item 2.26      DRAWING 03-MH – 103 HVAC PIPING – GREAT LAKES LEVEL 100 & 200 NEW WORK**  
.1      Detail 5: Revise HVAC piping in Mech Room D112 per Sketch 03-MH-SK004 (This Addendum).
- Item 2.27      DRAWING 03-MH-501 HVAC PIPING – PACIFIC/ GREAT LAKES DETAILS**  
.1      Detail 5 Non-Freeze Heating Coil Piping Detail: Pump installation shall be complete with strainer on pump inlet and check valve on pump discharge.
- Item 2.28      DRAWING 03-MH – 502 HVAC PIPING – PACIFIC/ GREAT LAKES DETAILS**  
.1      Detail 5: Revise HVAC Piping Schematic -Mechanical Room D112 per Sketch 03-MH-SK004 (This Addendum).  
.2      Replace detail 3 *Vertical Inline Pump Detail* with *Typical Pad-Mounted Detail for Vertical In-Line Pumps with VSDs* detail. (See detail 5, drawing 01-MH-502). Floor mounted pumps with speed drives shall be installed as per this detail.
- Item 2.29      DRAWING 03-MH-601 - HVAC PIPING – PACIFIC/ GREAT LAKES SCHEDULES**  
.1      Pacific/ Great Lakes – Wall-Mounted/Floor-Mounted Chilled A/C Unit Schedule: Revise electrical voltage for all units to 208 volts.
- Item 2.30      DRAWING 04-MC-101 – CONTROLS SAGUENAY/MIRAMICHI SCHEMATICS**  
.1      Provide controls to ERV4-3 in similar manner as shown for ERV4-1 & ERV4-2 in Detail 8.
- Item 2.31      DRAWING 04-MV-601 - VENTILATION – SAGUENAY/MIRAMICHI SCHEDULES**  
.1      Saguenay/ Miramichi – Vertical Stack Chilled Water Fan Coil Schedule: Revise electrical voltage for all units to 208 volts.

**Item 2.32      DRAWING 04-MH-501 HVAC PIPING – SAGUENAY/MIRAMICHI DETAILS**

- .1      Detail 5 Non-Freeze Heating Coil Piping Detail: Pump installation shall be complete with strainer on pump inlet and check valve on pump discharge.

**Item 2.33      DRAWING 04-MH-601 - HVAC PIPING – SAGUENAY/ MIRAMICHI SCHEDULES**

- .1      Saguenay/Miramichi – Wall-Mounted Chilled A/C Unit Schedule: Revise electrical voltage for all units to 208 volts.

**Item 2.34      DRAWING 05-AD-100 TELECOM LEVEL 100 – PARTIAL DEMO FLOOR PLAN**

- .1      Add the following:
  - .1      Demolish existing partitions to room CC103 STRG as shown on the drawing.

**Item 2.35      DRAWING 05-AD-100 TELECOM LEVEL 100 – PARTIAL NEW FLOOR**

- .1      Add the following:
  - .1      Door D5D2.
    - 2-610 X 2134
    - Insulated Hollow Metal Door.
    - Positive Latch, Deadlock from opening Sideonly.
    - Provide Sweep, Threshold, Steel Astragal and Acoustic Seals to Provide STC45.
    - Frame Filled with Acoustic Batt, Friction Fit Batt to Opening.
  - .2      Partition type 10 at room CC103 STRG including 1320 x 2235mm door opening and header as shown on the drawing. Wall finishes to match adjacent new.

**Item 2.36      DRAWING 05-MV-601 - VENTILATION – TELC/ MCTS/ MACKENZIE SCHEDULES**

- .1      MCTS/MacKenzie-Vertical Stack Chilled Water Fan Coil Schedule: Revise electrical voltage for all units to 208 volts.

**Item 2.37      DRAWING 05-MH-101 HVAC PIPING – TELC/MCTS LEVEL 100 & 200 NEW WORK**

- .1      Provide separate 25mm diameter branch CHWS & CHWR piping to the fan coils FC5-2.01, FC5-2.02, FC5-2.03 & FC5-2.04 from nearest CHWS & R mains located in ceiling of Level 200.

**Item 2.38      DRAWING 05-MH-501 HVAC PIPING – TELC/MCTS/MACKENZIE DETAILS**

- .1      Detail 5 Non-Freeze Heating Coil Piping Detail: Pump installation shall be complete with strainer on pump inlet and check valve on pump discharge.

**Item 2.39      DRAWING 05-MH-601 - HVAC PIPING – TELC/ MCTS/ MACKENZIE SCHEDULES**

- .1      MCTS/ MacKenzie – Wall-Mounted Chilled A/C Unit Schedule:    Revise electrical voltage for all units to 208 volts.

**Item 2.40      DRAWING 06-EP-101 ELECTRICAL POWER ALERT LEVEL 100, 200 & 300 NEW WORK**

- .1      Supply and install four (4) start/stop mushroom pushbuttons to individually control smoke exhaust fans EF1-12, EF1-13, EF1-14 and EF1-18. Switches shall be compatible with Simplex 4100U fire alarm system and be monitored through fire alarm panel. Mount switches adjacent main fire alarm panel located in Alert Level 200 Main Entrance Vestibule. Mount switches in protective, keyed cases and provided lamicoid identification.

**Item 2.41      DRAWING 06-E-601 ELECTRICAL ALERT SCHEDULES & DETAILS**

- .1      Detail 3: Delete reference to Room FF120 panel is located in Mechanical Room FF111.
- .2      Revise feeder to panel RVP to be 2x(3#250 MCM + #1Cu. bond, 63mmC).

**Item 2.42      DRAWING 06-MC-101 - CONTROLS ALERT SCHEMATICS**

- .1      Detail 9 ERV6-2 Control: Add controls for humidifier in similar manner as indicated for ERV6-1 in Detail 8.

**Item 2.43      DRAWING 06-MC-102 - CONTROLS ALERT SCHEMATICS**

- .1      Detail 2: Revise Hydronics Systems Controls Mech Room FF110 per Sketch 06-MC-SK001 (This Addendum).

**Item 2.44      DRAWING 06-MV-601 - VENTILATION – ALERT SCHEDULES**

- .1      Alert - Vertical Stack Chilled Water Fan Coil Schedule: Revise electrical voltage for all units to 208 volts.

**Item 2.45      DRAWING 06-MH – 501 HVAC PIPING – ALERT DETAILS**

- .1      Detail 5 Non-Freeze Heating Coil Piping Detail: Pump installation shall be complete with strainer on pump inlet and check valve on pump discharge.

**Item 2.46      DRAWING 06-MH – 401 HVAC PIPING – ALERT MECHANICAL ROOM NEW WORK**

- .1      Detail 6: Revise HVAC piping in mechanical Room F111A as per Sketch 06-MH-SK007 (this addendum).

**Item 2.47      DRAWING 06-MH – 502 HVAC PIPING – ALERT DETAILS**

- .1      Detail 6: Revise HVAC Piping Schematic -Mechanical Room F110 per Sketch 06-MH-SK007 (this addendum).
- .2      Replace detail 3 *Vertical Inline Pump Detail* with *Typical Pad-Mounted Detail for Vertical In-Line Pumps with VSDs* detail. (See detail 5, drawing 01-MH-502). Floor mounted pumps with speed drives shall be installed as per this detail.

**Item 2.48      DRAWING 06-MH-601 - HVAC PIPING – ALERT SCHEDULES**

- .1      Alert – Wall-Mounted Chilled A/C Unit Schedule: Revise electrical voltage for all units to 208 volts.

**Item 2.49      DRAWING 06 -MC-SK001 HYDRONIC SYSTEMS CONTROL REVISIONS (This Addendum)**

- .1      Add Control Valve CV-3 and AO control point. Refer to Sketch 06-MH-SK007(this addendum)

**Item 2.50      DRAWING 07-MV-601 - VENTILATION – ST. LAURENT SCHEDULES**

- .1      St. Laurent – Vertical Stack Chilled Water Fan Coil Schedule: Revise electrical voltage for all units to 208 volts.

**Item 2.51      DRAWING 07-MH – 501 HVAC PIPING – ST. LAURENT DETAILS**

- .1      Detail 5 Non-Freeze Heating Coil Piping Detail: Pump installation shall be complete with strainer on pump inlet and check valve on pump discharge.

**Item 2.52      DRAWING 07-MH-601 - HVAC PIPING – ST. LAURENT SCHEDULES**

- .1      St. Laurent – Wall-Mounted Chilled A/C Unit Schedule: Revise electrical voltage for all units to 208 volts.

**Item 2.53      DRAWING 08-E-601 ELECTRICAL D'IBERVILLE SCHEDULES AND DETAILS**

- .1      Revise bond wire indicated to ERV8-1 to be #10.

**Item 2.54      DRAWING 08-E-602 ELECTRICAL D'IBERVILLE CENTRE DETAILS**

- .1      Revise feeder to panel 3181 to be 2x(3#250 MCM + #1Cu. bond, 63mmC).

**Item 2.55      DRAWING 08-MC-102 - CONTROLS D'IBERVILLE CENTRE SCHEMATICS**

- .1      Detail 1: Revise HVAC Piping Control Schematic per Sketch 08-MC-SK003 (this addendum).

**Item 2.56      DRAWING 08-MH-101 HVAC PIPING D'IBERVILLE CENTRE LEVEL 100 NEW WORK**

- .1      Provide wall mounted chilled water fan coil unit in P110 Supervisor Office. Unit size similar to WM2-2.14 ( in Bldg 2). Mount on wall shared with mech room P109. Provide 19mm CHWS & CHWR piping to unit from services in mechanical room. Route condensate drain line to floor drain in mechanical room. Provide controls to room thermostat.

**Item 2.57 DRAWING 08-MH-502 HVAC PIPING D'IBERVILLE CENTRE DETAILS**

- .1 Detail 4: Revise HVAC Piping Schematic -Mechanical Room P109 per Sketch 08-MH-SK002 (this addendum).
- .2 Add *Typical Pad-Mounted Detail for Vertical In-Line Pumps with VSDs* detail to drawing. (See detail 5, drawing 01-MH-502). Pumps with speed drives shall be installed as per this detail.

**Item 2.58 DRAWING 08-MV-103 VENTILATION D'IBERVILLE CENTRE LEVEL 300 NEW WORK**

- .1 Revise round supply diffusers in Gymnasium from SR7 to SR5. Provide with safety chains.

**Item 2.59 DRAWING 11-E-601 ELECTRICAL PAVILLION SCHEDULES AND DETAILS**

- .1 Revise bond wire indicated for the following equipment to be #10:
  - .1 CU11-1.
  - .2 CU11-2.
  - .3 CU11-3.
  - .4 HWT11-1.

**Item 2.60 DRAWING 11-M-601 MECHANICAL G.L. HOPKINS PAVILION SCHEDULES**

- .1 Delete "11 – George L. Hopkins Pavilion - Plumbing Equipment Schedule" from this drawing. Contractor to refer to specifications for equipment requirements.

**Item 2.61 ADD THE FOLLOWING NEW DRAWINGS**

BLDG	SKETCH	SKETCH TITLE	DATE
01 CABOT	01-E-SK001	Smoke Exhaust Fans	2018-08-15
01 CABOT	01-E-SK002	Panel Schedule 3152	2018-08-15
01 CABOT	01-EP-SK001	Revised Equipment Layouts	2018-08-15
01 CABOT	01-S-SK001	Structural/Cabot Partial Plan and Section	2018-08-15
01 CABOT	01-MC-SK003	Controls Cabot Boiler Room HVAC Piping	2018-08-15
01 CABOT	01-MH-SK016	01 – Cabot Boiler Room 1403C HVAC Piping Revision	2018-08-15
01 CABOT	01-MH-SK017	01 – Cabot Piping Schematic Boiler Room	2018-08-15

BLDG	SKETCH	SKETCH TITLE	DATE
01 CABOT	01-MV-SK010	01 – Cabot Ceiling Return/Exhaust Register/Grille Schedule	2018-08-15
01 CABOT	01-MV-SK011	01 - Cabot Linear Slot Diffuser Schedule	2018-08-15
03 GREAT LAKES/PACIFIC	03-MC-SK001	Mechanical Room D112 Controls Schematic	2018-08-15
03 GREAT LAKES/PACIFIC	03-MH-SK004	Mechanical Room D112 – HVAC Piping Revisions	2018-08-15
05 TELC/MCTS	05-A-SK003	Telecom Level 100 Partial Demo Floor Plan	2018-08-15
05 TELC/MCTS	05-A-SK004	Telecom Level 100 Partial New Floor Plan	2018-08-15
06 ALERT	06-MC-SK001	Hydronic Systems Control Revisions	2018-08-15
06 ALERT	06-MH-SK007	Mechanical Room FF111A – HVAC Piping Schematic Revisions	2018-08-15
08 D'IBERVILLE	08-MC-SK003	HVAC Piping System Control Schematic Revisions	2018-08-15
08 D'IBERVILLE	08-MH-SK002	HVAC Piping Schematic Revisions Mechanical Room P109	2018-08-15

## ATTACHMENTS

- .1 Specifications:
- 26 50 00 – Lighting
  - 28 31 00.01 – Multiplex Fire Alarm System

- .2 Appendix E - Additional Constraints

- .3 Sketches:

01-E-SK001
01-E-SK002
01-EP-SK001
01-S-SK001
01-MC-SK003

<b>01-MH-SK016</b>
<b>01-MH-SK017</b>
<b>01-MV-SK010</b>
<b>01-MV-SK011</b>
<b>03-MC-SK001</b>
<b>03-MH-SK004</b>
<b>05-A-SK003</b>
<b>05-A-SK004</b>
<b>06-MC-SK001</b>
<b>06-MH-SK007</b>
<b>08-MC-SK003</b>
<b>08-MH-SK002</b>

END OF SECTION

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## 1. ADDITIONAL CONSTRAINTS

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The Canadian Coast Guard College will remain occupied and operational 24/7/365 for the duration of the project. There are several factors that will need to be considered during the construction that may impact the contractors phasing process and work flow. The following constraints must be considered during project planning and execution:

- .1 Domestic hot water must be available to the entire campus at all times during the course of the construction of the project. Any temporary means of heating the domestic water during downtime of the central heating plant, located in the Cabot building, or any other domestic water heating plants shall be provided by the contractor as part of the cost of the project.
- .2 During the construction of the project, if an area is renovated that requires 24/7 cooling, and the main cooling plant is not yet functional, the existing dedicated cooling systems will need to be retained and kept operational until the main plant is online. If there is a requirement for the existing systems to be removed, temporary cooling shall be provided by the contractor as part of the cost of the project. Examples of these types of spaces include, but are not limited to, simulators, Main IT Server, and MCTS.
- .3 The existing facility has several control systems in operation. These are pneumatic, electrical and digital controls. These systems must remain in operation in all areas until these areas become construction zones. Control services located in a construction zone and serving other areas shall remain in operation at all times until they become redundant, at which time they shall be removed in their entirety. Any shut down or damage to these services as a result of construction activities shall be investigated and repaired by the Division 25 contractor at no additional cost to the Departmental Representative.
- .4 As part of the new work, the operator workstation for the new controls system that is to be installed in Cabot, will need to be fully operational prior to the completion of Phase 1 of the project. At the completion of each phase of the project it shall be viewable and controllable from this new operator workstation.
- .5 The central heating plant, located in the Cabot building, must be able to provide heat to all occupied areas of the interconnected campus during the course of the project. If, at any point, heat is required and the phasing of the project will not accommodate the provision for heating, temporary heating shall be provided by the contractor as part of the cost of the project.
- .6 At points in time where the phasing of the construction will require a portion of a building or buildings to be disconnected from the central heating plant a means for temporary heating shall be provided by the contractor as part of the cost of the project.

- .7 Where the phasing of the construction requires a building to be disconnected from the existing systems, and those systems are to be kept active, a means shall be provided by the contractor to ensure the existing systems remain balanced until that phase of work is complete and the building can be reintegrated into the existing systems. Any cost associated with this work shall be provided by the contractor as part of the cost of the project.
- .8 Domestic cold water must be available to the entire campus at all times during the course of the construction of the project. Any temporary means of providing domestic cold water shall be provided by the contractor as part of the cost of the project.
- .9 Any damage to the existing building services or systems that come as a result of the construction activities of this project shall be investigated and repaired, as part of this contract, on an emergency basis at no additional cost to the Departmental Representative. Building services or systems include, but are not limited to the following systems: HVAC, Controls, Plumbing, Fire Protection, IT/Communications, Electrical and Fire Alarm.
- .10 Any interruptions and/or shut downs of new or existing building services or systems that are required as a result of the construction activities of this project need to be scheduled with Departmental Representative prior to commencement of any work.
- .11 The contractor is required to present all solutions and discuss all options for shut downs or interruptions of new or existing building services or systems that are required as a result of the construction activities of this project with the Departmental Representative prior to commencement of any work.

END OF SECTION

## **PART 1 GENERAL**

### **1.1 RELATED SECTIONS**

- .1 Division 01 – General Requirements.
- .2 Section 26 05 00 - Common Work Results - Electrical.

### **1.2 REFERENCES**

- .1 Government of Canada, latest edition of the following:
  - .1 NBC, National Building Code of Canada.
  - .2 TB OSH Chapter 3-03, Treasury Board of Canada, Occupational Safety and Health, Chapter 3-03, Standard for Fire Protection Electronic Data Processing Equipment.
  - .3 TB OSH Chapter 3-04, Treasury Board of Canada, Occupational Safety and Health, Chapter 3-04, Standard for Fire Alarm Systems.
- .2 Underwriter's Laboratories of Canada (ULC), Latest edition of the following:
  - .1 CAN/ULC-S524, Installation of Fire Alarm Systems.
  - .2 ULC-S525, Audible Signal Appliances for Fire Alarm.
  - .3 CAN/ULC-S526, Visual Signal Appliances, Fire Alarm.
  - .4 CAN/ULC-S527, Control Units.
  - .5 CAN/ULC-S528, Manual Pull Stations.
  - .6 CAN/ULC-S529, Smoke Detectors.
  - .7 CAN/ULC-S530, Heat Actuated Fire Detectors.
  - .8 CAN/ULC-S531, Smoke Alarms.
  - .9 CAN/ULC-S536, Inspection and Testing of Fire Alarm Systems.
  - .10 CAN/ULC-S537, Verification of Fire Alarm Systems.

### **1.3 SYSTEM DESCRIPTION**

- .1 System is existing (Simplex 4100U), add duct detectors and addressable relays as required on floor plans.
- .2 Update existing fire alarm graphic located at main entrance Alert Building and Cabot Building.

### **1.4 SHOP DRAWINGS**

- .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Include:
  - .1 Details for devices.
  - .2 Revised fire alarm graphic.

## **1.5 CLOSEOUT SUBMITTALS**

- .1 Provide operation and maintenance data for fire alarm system for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.
- .2 Include:
  - .1 Technical data - illustrated parts lists with parts catalogue numbers.
  - .2 Copy of approved shop drawings with corrections completed and marks removed except review stamps.

## **1.6 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal, and with the Waste Reduction Workplan.
- .2 Place materials defined as hazardous or toxic waste in designated containers.
- .3 Ensure emptied containers are sealed and stored safely for disposal away from children.

## **PART 2 PRODUCTS**

### **2.1 MATERIALS**

- .1 Equipment and devices: ULC listed and labelled and supplied by Simplex, to match existing system Simplex 4100U.
- .2 Audible signal devices: to CAN/ULC-S524.
- .3 Visual signal devices: to CAN/ULC-S526.
- .4 Manual fire alarm pull stations: to CAN/ULC-S528.
- .5 Thermal detectors: to CAN/ULC-S530.
- .6 Smoke detectors: to CAN/ULC-S529.
- .7 Duct detectors: to CAN/ULC-S529.

### **2.2 WIRING**

- .1 Twisted copper conductors: rated 300 V.
- .2 To addressable loops: 18 AWG minimum, and in accordance with manufacturer's requirements.
- .3 To signal circuits: 14 AWG minimum, and in accordance with manufacturer's requirements.

- .4 To control circuits: 14 AWG minimum, and in accordance with manufacturer's requirements.
- .5 Provide 2# 14 AWG minimum wiring to strobe circuits where indicated by fire alarm system drawings.

## **2.3 MANUAL ALARM STATIONS**

- .1 Addressable manual pull station.
  - .1 Pull lever, wall mounted type, single stage, electronics to communicate with station's status to addressable module/transponder over 2 wires and to supply power to station. Station address to be set on station in field.

## **2.4 AUDIBLE SIGNAL DEVICES**

- .1 Combination horn/strobes.
  - .1 1 and 2 watt taps complete with tenegral field adjustable strobe light.

## **2.5 AUTOMATIC ALARM INITIATING DEVICES**

- .1 Addressable smoke detector.
  - .1 Photo-electric type.
  - .2 Electronics to communicate detector's status to addressable module/transponder.
  - .3 Detector address to be set on detector in field.
- .2 Addressable duct detector.
  - .1 Photo-electric type.
  - .2 Electronics to communicate detector's status to addressable module/transponder.
  - .3 Detector address to be set on detector in field.

## **2.6 ANCILLARY DEVICES**

- .1 Remote relay unit to initiate fan shutdown – addressable located as indicated on drawings.

## **2.7 IDENTIFICATION**

- .1 All fire alarm devices are to be identified with their unique identification code number to assist in the inspection and maintenance of the Fire Alarm System.

# **PART 3 EXECUTION**

## **3.1 INSTALLATION**

- .1 Install systems in accordance with CAN/ULC-S524 and TB OSH Chapter 3-04.
- .2 Connect alarm circuits to main control panel and/or local annunciating, initiating loops.
- .3 Install remote relay units to control fan shut down.

- .4 Locate and install detectors and connect to alarm circuit wiring. Do not mount detectors within 1M of air outlets. Maintain at least 600mm radius clear space on ceiling, below and around detectors.
- .5 Locate duct detectors in straight portions of ducts in accordance with manufacturers recommendations.
- .6 Install horn/strobe devices and connect to signalling circuits.
- .7 Sprinkler system: wire alarm and supervisory switches and connect to control panel.
- .8 Provide necessary raceways, cable and wiring to make interconnections to terminal boxes, annunciator equipment and CCU, as required by equipment manufacturer.
- .9 Ensure that wiring is free of opens, shorts or grounds, before system testing and handing over.
- .10 Identify circuits and other related wiring at central control unit, annunciators, and terminal boxes.
- .11 Contractor shall be responsible for maintaining circuit continuity and system functionality to upstream and downstream devices outside the area of renovation throughout project. Isolate and/or reprogram system as required in order to complete work while maintaining a functional system throughout all phases of project.

### **3.2 FIELD QUALITY CONTROL**

- .1 Perform tests in accordance with Section 26 05 00 - Common Work Results - Electrical and CAN/ULC-S537.
- .2 Fire alarm system:
  - .1 Test such device and alarm circuit to ensure manual stations, thermal and smoke detectors, sprinkler system, transmit alarm to control panel and actuate first stage alarm general alarm ancillary devices.
  - .2 Check annunciator panels to ensure zones are shown correctly.
  - .3 Simulate grounds and breaks on alarm and signalling circuits to ensure proper operation of systems.
  - .4 Addressable circuits system style DCLB:
    - .1 Test each conductor on all DCLB addressable links for capability of providing 3 or more subsequent alarm signals on line side of single open-circuit fault condition imposed near electrically most remote device on each link. Operate Acknowledge/Silence switch after reception of each of the 3 signals. Correct imposed fault after completion of each series of tests.
    - .2 Test each conductor on all DCLB addressable links for capability of providing 3 or more subsequent alarm signals during ground-fault condition imposed near electrically most remote device on each link. Operate Acknowledge/Silence switch after reception of each of the 3 signals. Correct imposed fault after completion of each series of tests.

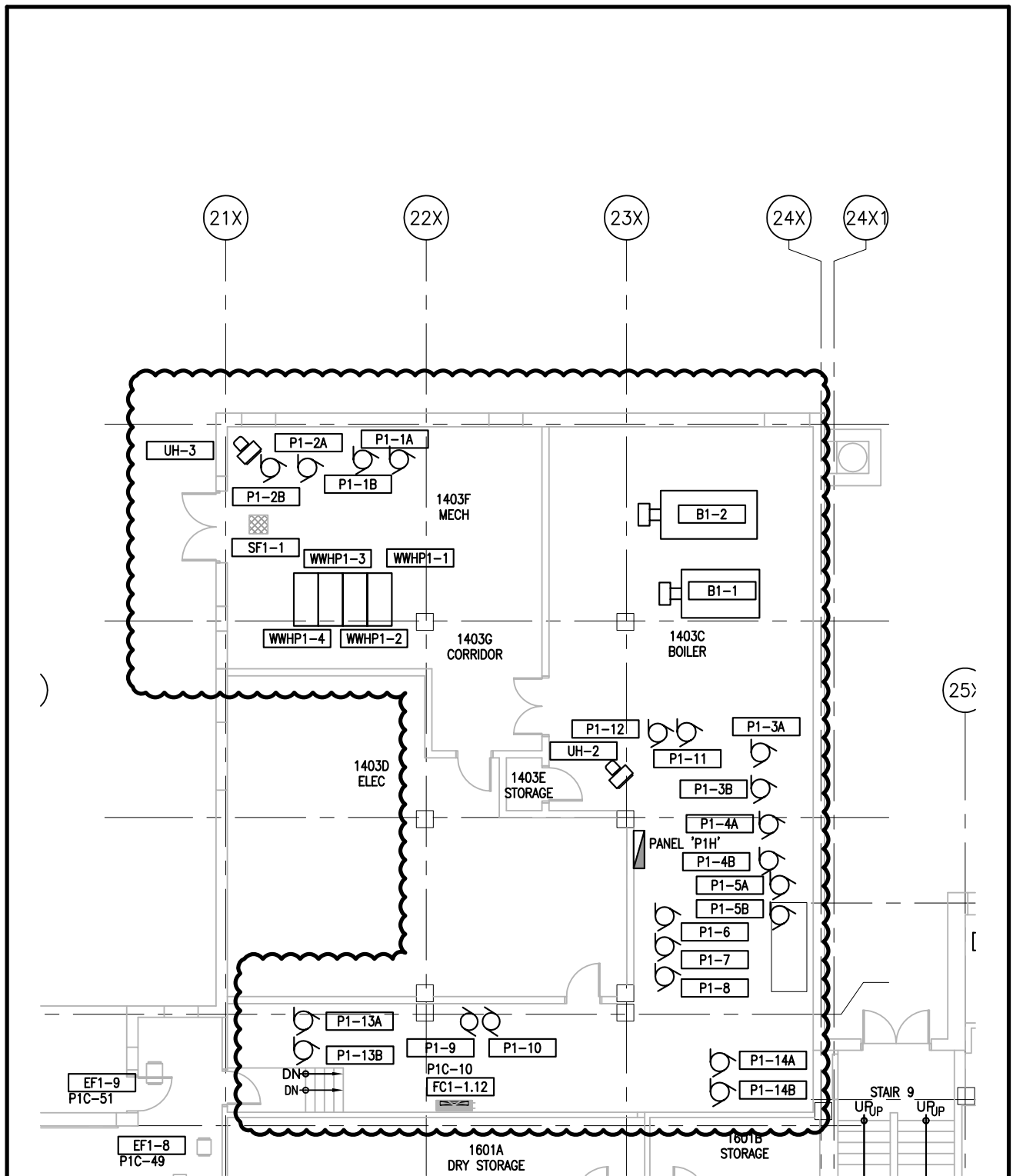
.3

.3 All testing shall be witnessed by the Fire Protection Services (Atlantic) Office.

### **3.3 COMMISSIONING**


.1 Building Commissioning is a requirement of this project in order to comply with sections of Division 01 – General Requirements. A Commissioning Agent has been engaged and will provide all systems commissioning in conjunction with all trade contractors. The Commission Agent will provide a Commissioning Plan with commissioning start-up and test procedure sheets to be performed and completed by the various trade contractors.

END



Reference Drawing: 01-EP-107

Addendum #: 9

 <p>Public Works and Government Services Canada</p>	<p>Travaux publics et Services gouvernementaux Canada</p>	<p>Drawing title Titre du dessin</p> <p><b>01 - CABOT BOILER ROOM 1403C REVISED EQUIPMENT LAYOUTS</b></p>	<p>designed CGN</p> <p>drawn MJH</p> <p>approved DJM</p>	<p>conçu date 08/15/18</p> <p>dessiné date 08/15/18</p> <p>approuvé date 08/15/18</p>	<p>date 08/15/18</p> <p>Submission</p> <p>Tender Joan Muise PWGSC Project Manager</p> <p>Administrateur de projets TPSGC</p> <p>project number R.065476.700</p> <p>no. du projet</p> <p>drawing no. 01-EP-SK001</p> <p>no. du dessin</p>
<p>project</p> <p><b>CANADIAN COAST GUARD COLLEGE, SYDNEY, NS MECHANICAL &amp; SPRINKLER UPGRADES</b></p> <p>project</p>					

TO NEW 3P, 100A BREAKER  
IN LIFE SAFETY BOARD E3102  
ROOM 1403B

4#3RW90 + 6Cu.  
BOND, 41mmC

RM. 4115A  
SPLITTER:  
600V, 100A, 3Φ, 4W

3#12RW90 + #12Cu.  
BOND, 21mmC

30A FUSIBLE D/C SWITCH  
FUSED AT 15A (RK5  
TIME-DELAY FUSES)

3#12RW90 + #12Cu.  
BOND, 21mmC

3#12RW90 + #12Cu.  
BOND, 21mmC

EF1-12  
CABOT  
RM. 4115A

3#12RW90 + #12Cu.  
BOND, 21mmC

30A FUSIBLE D/C SWITCH  
FUSED AT 15A (RK5  
TIME-DELAY FUSES)

3#12RW90 + #12Cu.  
BOND, 21mmC

3#12RW90 + #12Cu.  
BOND, 21mmC

EF1-13  
CABOT  
RM. 4133A

3#12RW90 + #12Cu.  
BOND, 21mmC

30A FUSIBLE D/C SWITCH  
FUSED AT 15A (RK5  
TIME-DELAY FUSES)

3#12RW90 + #12Cu.  
BOND, 21mmC

3#12RW90 + #12Cu.  
BOND, 21mmC

EF1-14  
CABOT  
RM. 4143A

3#10RW90 + #10Cu.  
BOND, 21mmC

60A FUSIBLE D/C SWITCH  
FUSED AT 45A (RK5  
TIME-DELAY FUSES)

3#10RW90 + #10Cu.  
BOND, 21mmC

3#10 "DRIVE" CABLE  
TECK90


EF1-18  
CABOT  
RM. 4150

# NEW DISTRIBUTION EQUIP.-RM. 4115A

SCALE : N.T.S. E-604

Reference Drawing: 01-E-604

Addendum #: 9

	Public Works and Government Services Canada	Travaux publics et Services gouvernementaux Canada	project	CANADIAN COAST GUARD COLLEGE, SYDNEY, NS MECHANICAL & SPRINKLER UPGRADES	project	Drawing title SMOKE EXHAUST FANS	Titre du dessin SMOKE EXHAUST FANS	designed	date
								CCN	08/15/18
								drawn	date
								MJH	08/15/18
								approved	date
								DJM	08/15/18
Tender Joan Muise			Submission 08/15/18			project number R.065476.700		no. du dessin drawing no. 01-E-SK001	
PWSSC Project Manager			Administrateur de projets TPSSC						

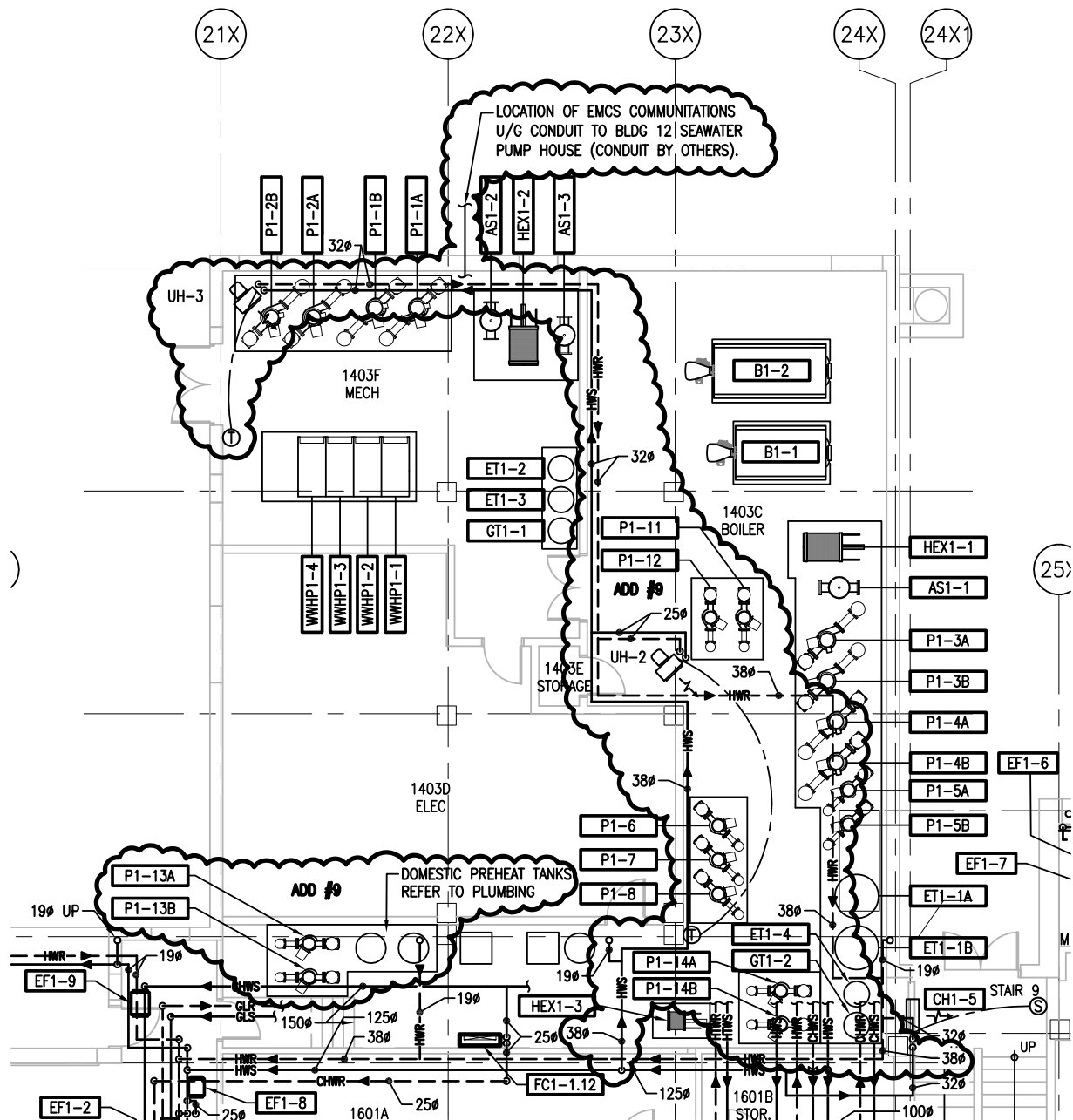
VOLTAGE		600		PANEL		'3152'		SOURCE		HVAC SWITCHBOARD				
PHASE/WIRE		3/3		LOCATION		MECHANICAL ROOM D112		FEEDER		SEE SINGLE LINE DIAGRAM				
MAINS		225A		MOUNTING		SURFACE		I.C.		18 KA				
NOTES	DESIGNATION			WATTAGE		CIR NO.	BKR	Ø	CIR NO.	WATTAGE		DESIGNATION	NOTES	
		PH A	PH B	PH C						PH A	PH B	PH C		
P3-1A		1350			1	3P	-0-		2	1350			P3-2B	
			1350		3	15A	-b-		4		1350			
				1350	5		-c-		6			1350		
P3-1B		1350			7	3P	-0-		8	1350			P3-3	
			1350		9	15A	-b-		10		1350			
				1350	11		-c-		12			1350		
P3-1C		1350			13	3P	-0-		14	1350			P3-4	
			1350		15	15A	-b-		16		1350			
				1350	17		-c-		18			1350		
P3-2A		1350			19	3P	-0-		20					
			1350		21	15A	-b-		22					
				1350	23		-c-		24					
					25		-0-		26					
					27		-b-		28					
					29		-c-		30					
					31		-0-		32					
					33		-b-		34					
					35	20A	-c-		36					
					37	20A	-0-		38					
					39	20A	-b-		40					
					41	20A	-c-		42					
ø "A" TOTAL	9450			TOTAL LOAD:		NOTES:								
ø "B" TOTAL	9450			28350 W										
ø "C" TOTAL	9450			27 AMPS										

Reference Drawing: 01-E-606

Addendum #: 9


 Public Works and Government Services Canada	Travaux publics et Services gouvernementaux Canada	project	project	Titre du dessin	designed	date	
Tender	Joan Muise	PWGSC Project Manager	Submission	08/15/18	Canadian Coast Guard College, Sydney, NS	CGN	08/15/18
					MECHANICAL & SPRINKLER UPGRADES	MJH	08/15/18
						approved	date
						DJM	08/15/18
						drawing no.	no. du dessin
						R.065476.700	01-E-SK002





Reference Drawing: 01-MH-107

Addendum #: 9

 Public Works and Government Services Canada	Travaux publics et Services gouvernementaux Canada	Drawing title Titre du dessin		designed conçu RJK	date 08/15/18
		01 - CABOT BOILER ROOM 1403C HVAC PIPING REVISION		drawn dessiné RAFH	date 08/15/18
project CANADIAN COAST GUARD COLLEGE, SYDNEY, NS MECHANICAL & SPRINKLER UPGRADES	project	Tender Joan Muise PWGSC Project Manager		approved approuvé RJK	date 08/15/18
		project number R.065476.700		drawing no. 01-MH-SK016	no. du dessin




# 01 – CABOT – CEILING RETURN/EXHAUST REGISTER/GRILLE SCHEDULE ADD #9

MARK	TYPE	STYLE	CLG. SIZE (mm)	CAPACITY (L/s)	NC LEVEL	SP (Pa)	COMMENTS
R1/E1	AIRFOIL EXHAUST/RETURN	SURFACE MOUNT	150x150	0–30	NC–17	17.4	19mm GRILLE SPACING, c/w OPPOSED BLADE DAMPER, SURFACE MOUNT BORDER, COUNTER SUNK SCREWS, BLADES PARALLEL TO LONG DIMENSION
R2/E2	AIRFOIL EXHAUST/RETURN	SURFACE MOUNT	200x150	31–45	NC–20	22.4	
R3/E3	AIRFOIL EXHAUST/RETURN	SURFACE MOUNT	200x200	45–65	NC–21	17.4	
R4/E4	AIRFOIL EXHAUST/RETURN	SURFACE MOUNT	250x250	66–85	NC–20	12.4	
R5/E5	AIRFOIL EXHAUST/RETURN	SURFACE MOUNT	300x300	86–120	NC–19	12.4	
R6/E6	AIRFOIL EXHAUST/RETURN	SURFACE MOUNT	350x350	121–150	NC–21	12.4	
R7/E7	AIRFOIL EXHAUST/RETURN	SURFACE MOUNT	400x400	151–225	NC–23	12.4	
R8/E8	AIRFOIL EXHAUST/RETURN	SURFACE MOUNT	450x450	226–295	NC–22	12.4	
R9/E9	AIRFOIL EXHAUST/RETURN	SURFACE MOUNT	500x500	296–375	NC–27	14.9	
R10/E10	AIRFOIL EXHAUST/RETURN	SURFACE MOUNT	600x600	376–485	NC–28	–	
R11	EGG CRATE RETURN	LAY-IN	600x600	–	–	–	–

Reference Drawing: 01–MV–601


Addendum #: 9

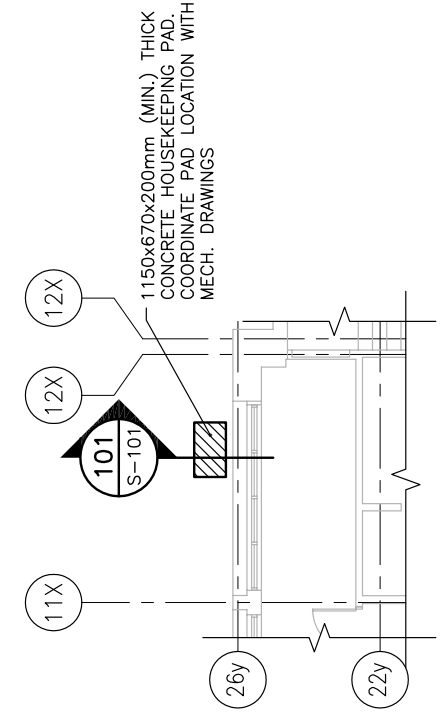
 Public Works and Government Services Canada	Travaux publics et Services gouvernementaux Canada	project	project	Drawing title	designed RJK	conçu date	08/15/18
	CANADIAN COAST GUARD COLLEGE, SYDNEY, NS MECHANICAL & SPRINKLER UPGRADES		01 – CABOT CEILING RETURN/EXHAUST REGISTER/GRILLE SCHEDULE	drawn RAFK	dessiné date	08/15/18	
Tender	Joan Muise PWGSC Project Manager	Submission	Administrateur de projets TPSGC	approved RJK	approuvé date	08/15/18	
			project number R.065476.700	no. du projet	drawing no. 01–MV–SK010	no. du dessin	

01 – CABOT – LINEAR SLOT DIFFUSER SCHEDULE						ADD #9
MARK	STYLE	NO. OF SLOTS	SLOT SIZE (mm)	DIFFUSER LENGTH(mm)	CAPACITY (L/S)	REMARKS
SL1	LINEAR SLOT SUPPLY	2	13	1220	10–83	C/W MATCHING INSULATION PLENUM. SEE NOTE BELOW.
SL1	LINEAR SLOT SUPPLY	3	13	1220	84–136	C/W MATCHING INSULATION PLENUM. SEE NOTE BELOW.
RL1	LINEAR SLOT RETURN	2	13	1220	10–83	C/W MATCHING INSULATION PLENUM. SEE NOTE BELOW.
RL1	LINEAR SLOT RETURN	3	13	1220	84–136	C/W MATCHING INSULATION PLENUM. SEE NOTE BELOW.
NOTES: 1. REFER TO ARCHITECTURAL REFLECTED CEILING FOR LOCATIONS OF DIFFUSERS IN DRYWALL CEILINGS AND EXPOSED (NO CEILING) AREAS. CONTRACTOR SHALL PROVIDE PLENUM/DIFFUSER SUPPORTS AS NECESSARY TO SUIT INSTALLATION. DUCT CONNECTIONS TO PLENUMS SHALL BE WITH RIGID DUCTWORK C/W BALANCING DAMPER.						

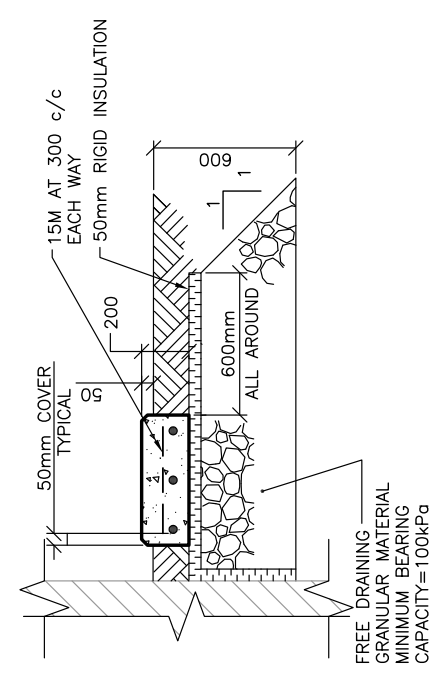
Reference Drawing: 01 – MV – 601

Addendum #: 9

 Public Works and Government Services Canada Tender	Travaux publics et Services gouvernementaux Canada	project <b>CANADIAN COAST GUARD COLLEGE, SYDNEY, NS</b> project <b>MECHANICAL &amp; SPRINKLER UPGRADES</b>	Drawing title <b>01 – CABOT LINEAR SLOT DIFFUSER SCHEDULE</b>	designed RJK	conçu RJK	date 08/15/18
	Joan Muise PWGSC Project Manager			drawn RAFK	dessiné RAFK	date 08/15/18
				approved RJK	approuvé RJK	date 08/15/18
				drawing no. <b>01–MV–SK011</b>		no. du dessin



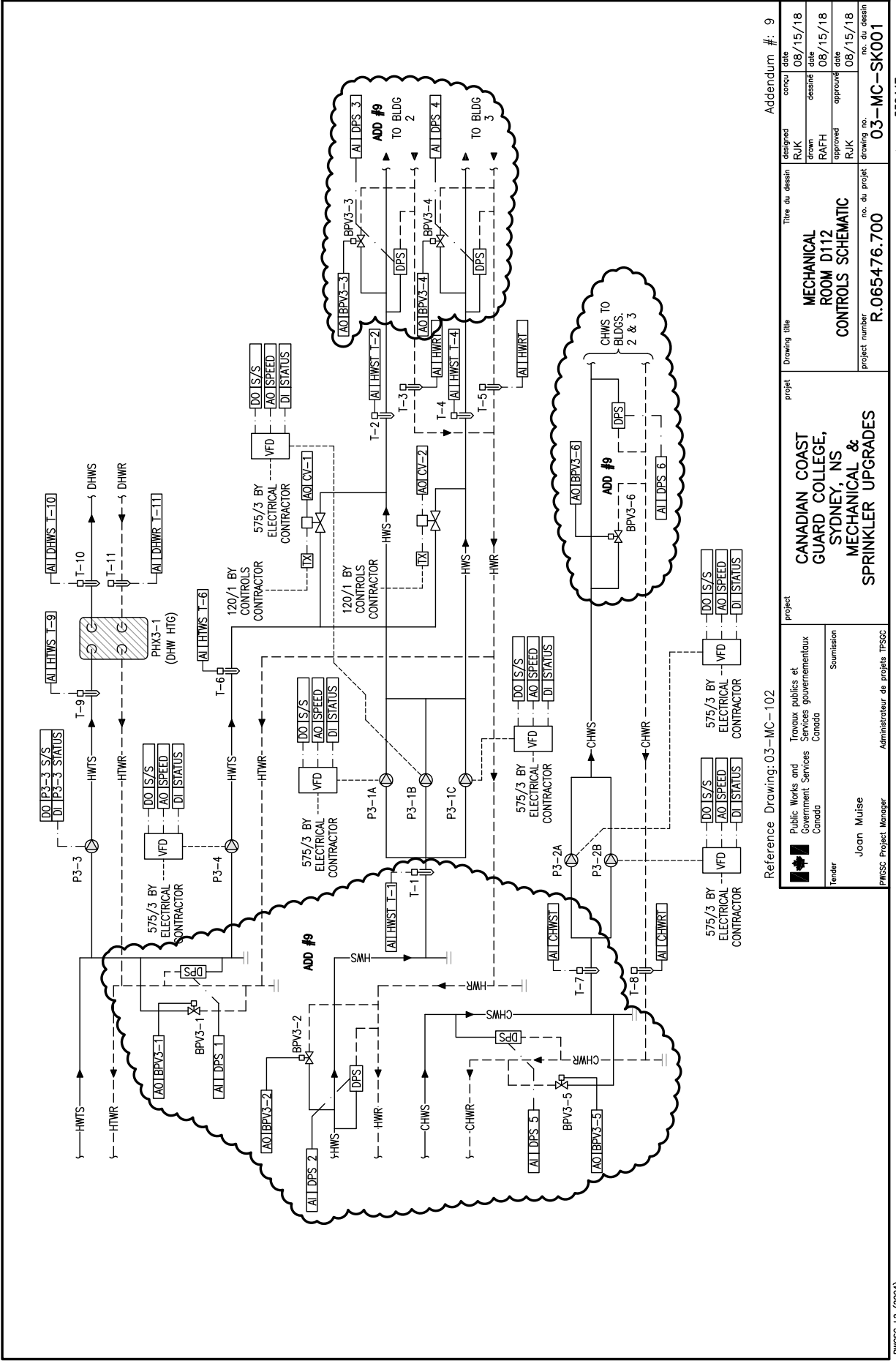
# PARTIAL FOUNDATION PLAN



# SECTION 101




Reference Drawing:		Addendum #: 9	
<div> <div>Public Works and Government Services Canada</div> <div>Tender</div> </div>	<div> <div>Travaux publics et Services gouvernementaux Canada</div> <div>08/15/18</div> </div>	<div> <div>designed</div> <div>M.F.</div> </div>	<div> <div>date</div> <div>08/15/18</div> </div>
	<div> <div>Joan Muise</div> <div>PWOSC Project Manager</div> </div>	<div> <div>approved</div> <div>STAFF</div> </div>	<div> <div>date</div> <div>08/15/18</div> </div>
<div> <div>Canadian Coast Guard College, Sydney, NS</div> <div>SEAWATER SYSTEM &amp; PUMPHOUSE CONSTRUCTION</div> </div>	<div> <div>project</div> <div>R.065476.711</div> </div>	<div> <div>no. du projet</div> <div>01-S-SK001</div> </div>	<div> <div>no. du dessin</div> <div>01-S-SK001</div> </div>



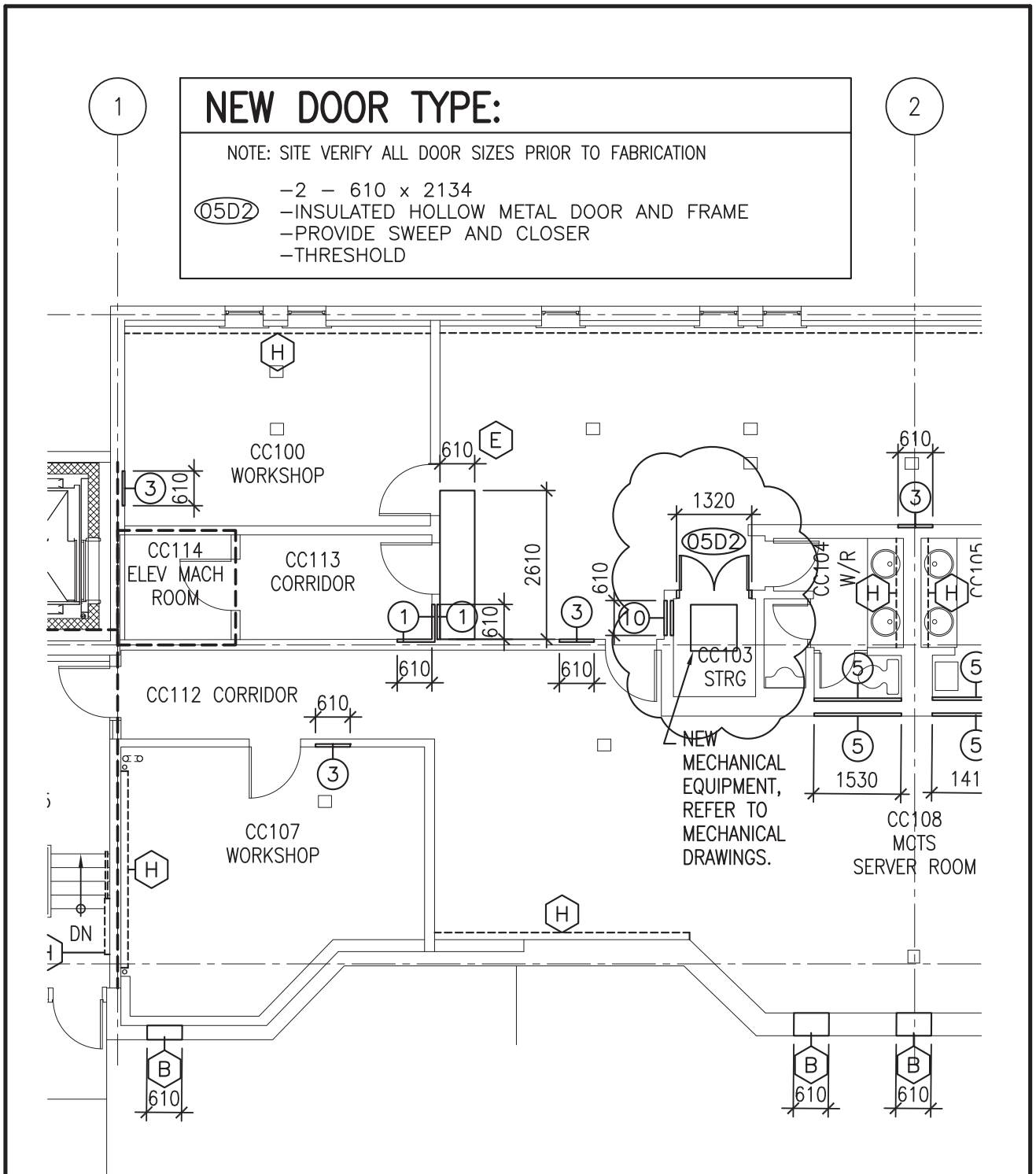
Reference Drawing: 03-MC-102

Addendum #: 9

	Public Works and Government Services Canada	Travaux publics et Services gouvernementaux Canada	project	CANADIAN COAST GUARD COLLEGE, SYDNEY, NS	project	Drawing title	MECHANICAL ROOM D112 CONTROLS SCHEMATIC	no. du projet	drawing no.	no. du dessin	conçu	date	08/15/18
Tender		Submission											
Joan Muise													
PWSSC Project Manager		Administrateur de projets TPSSC											




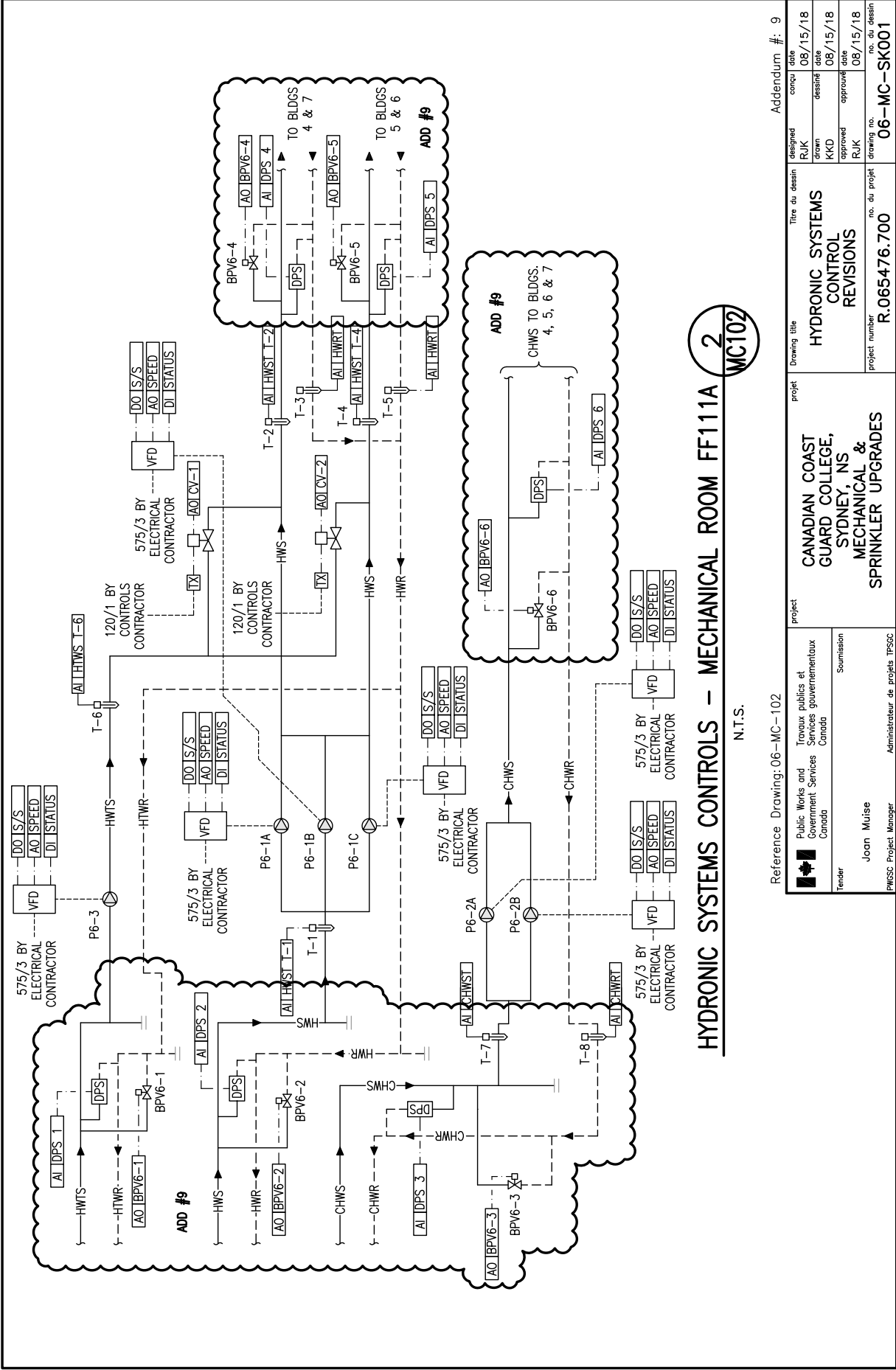




REFERENCE DRAWING: 05-A-100

ADDENDUM: #10

 Public Works and Government Services Canada		Travaux publics et Services gouvernementaux Canada		Drawing title  Titre du dessin		designed LLA		conçu		date 08/09/18	
project  CANADIAN COAST GUARD COLLEGE, SYDNEY, NS MECHANICAL & SPRINKLER UPGRADES		proj  CANADIAN COAST GUARD COLLEGE, SYDNEY, NS MECHANICAL & SPRINKLER UPGRADES		TELECOM LEVEL 100 PARTIAL NEW FLOOR PLAN		drawn LLA		dessiné		date 08/09/18	
						approved LLA		approuvé		date 08/09/18	
						Tender Joan Muise PWGSC Project Manager		Soumission			
				project number R.065476.710		no. du projet		drawing no. 05-A-SK004		no. du dessin	




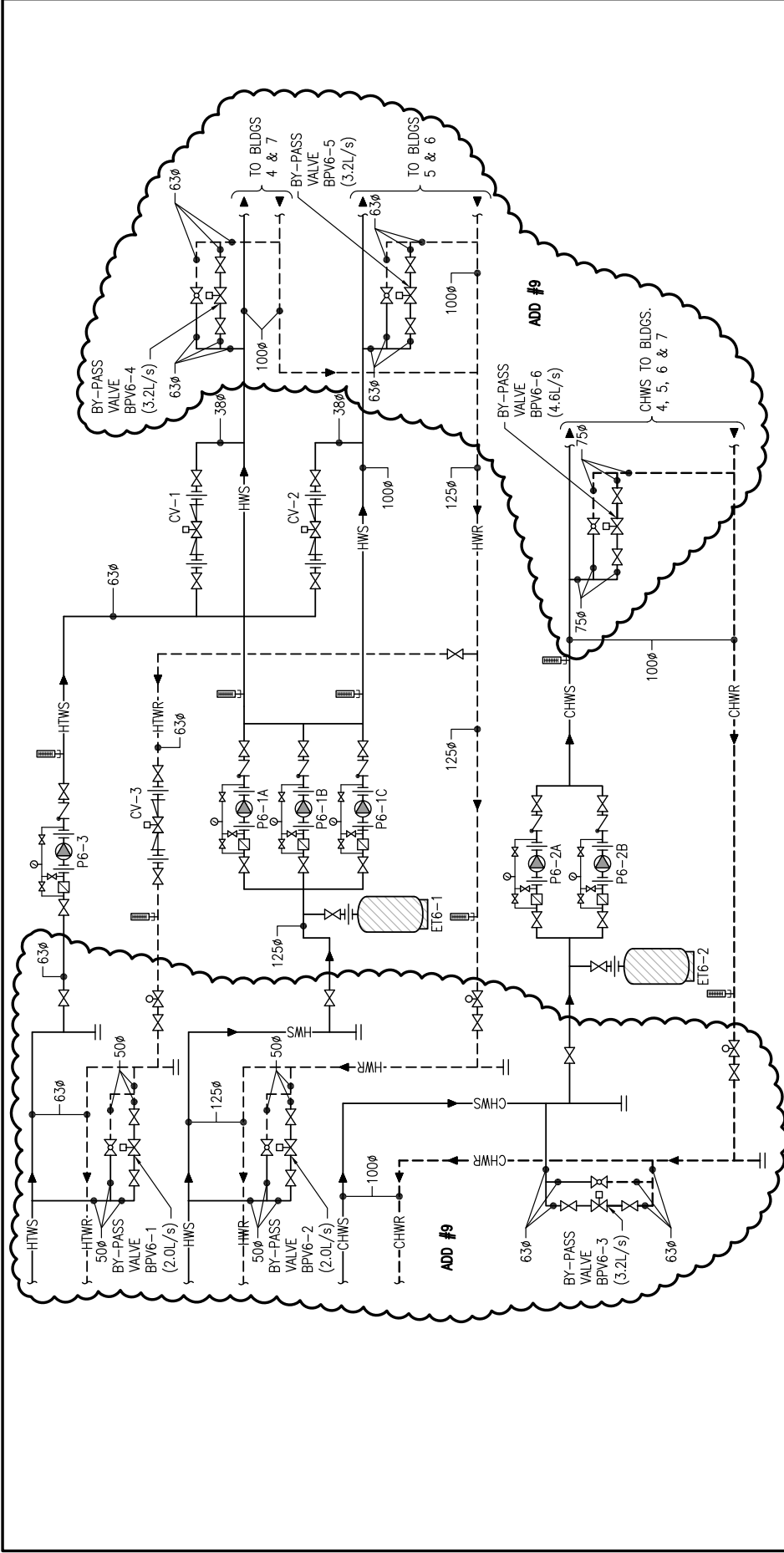
# HYDRONIC SYSTEMS CONTROLS – MECHANICAL ROOM FF11A

N.T.S.

Reference Drawing: 06-MC-102

Addendum #: 9

<div><div><div><div></div><div>Public Works and Government Services Canada</div></div><div><div>Travaux publics et Services gouvernementaux Canada</div><div>Submission</div></div></div><div><div>Joan Muise</div><div>WPSC Project Manager</div></div><div>Administrateur de projets TPSCC</div></div>	project	CANADIAN COAST GUARD COLLEGE, SYDNEY, NS MECHANICAL & SPRINKLER UPGRADES	project	Drawing title		no. du projet	
				HYDRONIC SYSTEMS CONTROL REVISIONS		R.065476.700	
				designed	date	drawing no.	no. du dessin
				RJK	08/15/18	06-MC-SK001	06-MC-SK001
				drawn	date	approved	date
				KKD	08/15/18		
						RJK	08/15/18




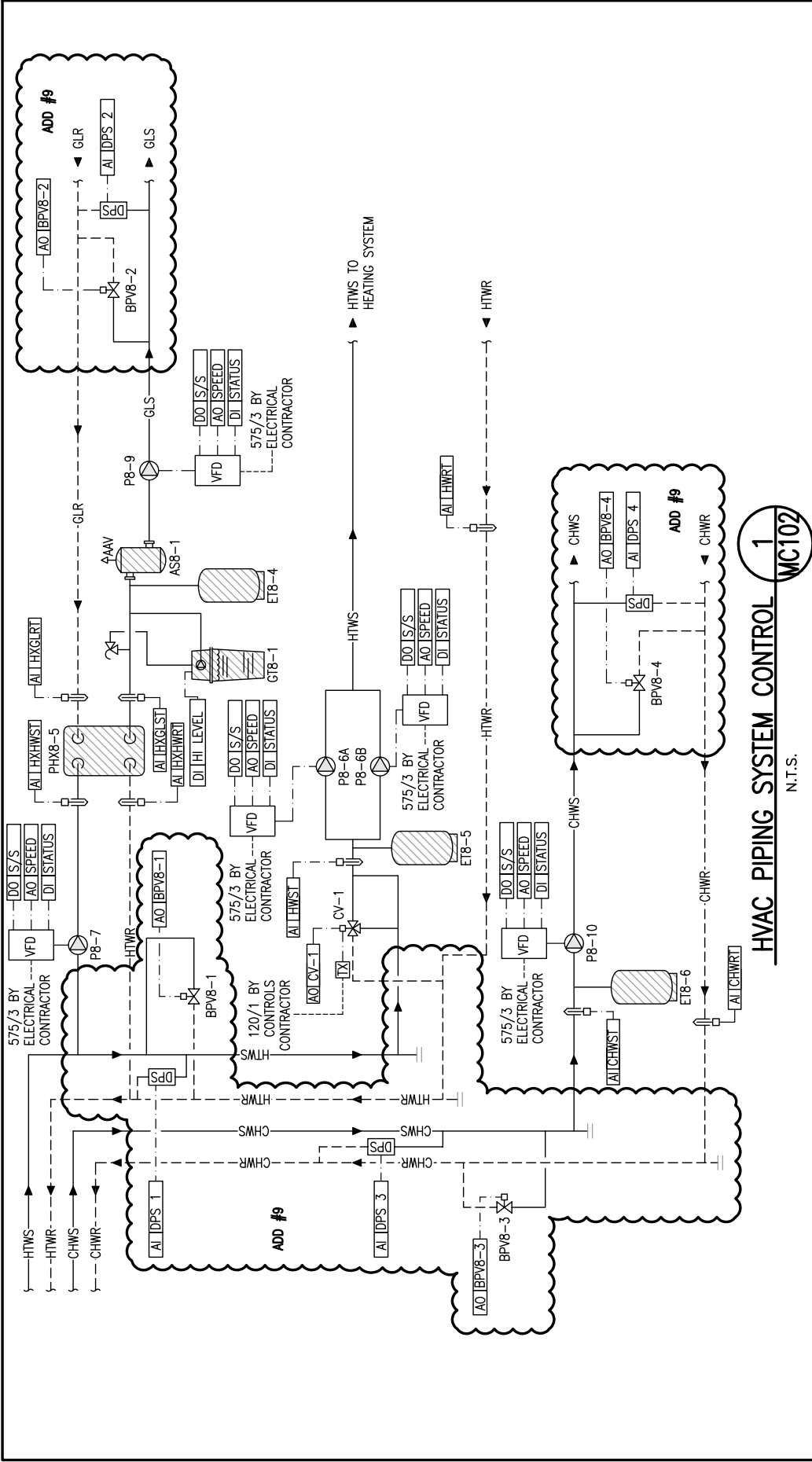
# HVAC PIPING SCHEMATIC – MECHANICAL ROOM FF111A 6 WH502

Reference Drawing: 06-MH-502

SCALE : N.T.S.

Addendum #: 9

<div><div><div></div><div>Public Works and Government Services Canada</div></div><div><div>Travaux publics et Services gouvernementaux Canada</div></div></div>	<div>Submission</div> <div>Joan Muise</div> <div>PWSSC Project Manager</div>	<div>project</div> <div>CANADIAN COAST GUARD COLLEGE, SYDNEY, NS</div> <div>MECHANICAL &amp; SPRINKLER UPGRADES</div>	<div>Drawing title</div> <div>MECHANICAL ROOM FF111A – HVAC PIPING SCHEMATIC REVISIONS</div> <div>project number R.065476.700</div>	<div>designed</div> <div>RJK</div>	<div>date</div> <div>08/15/18</div>
				<div>checked</div> <div>RAFH</div>	<div>date</div> <div>08/15/18</div>
				<div>approved</div> <div>RJK</div>	<div>date</div> <div>08/15/18</div>
				<div>no. du projet</div> <div>06-MH-SK007</div>	




# HVAC PIPING SYSTEM CONTROL 1 MC102

N.T.S.

Reference Drawing: 08-MC-102

Addendum #: 9

<div><div><div></div><div>Public Works and Government Services Canada</div></div><div>Tender</div></div>	<div>Travaux publics et Services gouvernementaux Canada</div> <div>Soumission</div>	<div>project</div> <div>CANADIAN COAST GUARD COLLEGE, SYDNEY, NS MECHANICAL &amp; SPRINKLER UPGRADES</div>	<div>project title</div> <div>HVAC PIPING SYSTEM CONTROL SCHEMATIC REVISIONS</div>	<div>no. du projet</div> <div>R.065476.700</div>	<div>no. du dessin</div> <div>08-MC-SK003</div>	<div>designed</div> <div>RJK</div> <div>08/15/18</div>		
						<div>drawn</div> <div>KKD</div> <div>08/15/18</div>		
						<div>approved</div> <div>RJK</div> <div>08/15/18</div>		
<div>Joan Muise</div> <div>PWSSC Project Manager</div>	<div>Administrateur de projets TPSSC</div>		<div>project number</div> <div>R.065476.700</div>	<div>drawing no.</div> <div>08-MC-SK003</div>	<div>no. du dessin</div> <div>08-MC-SK003</div>			



Addendum #: 9

PWGSC L2 (2004)

E-DRM/GDD-E: 538447