

KEY PLAN



01	ISSUED FOR TENDER	01/25 2018
revisions		date
project		projct

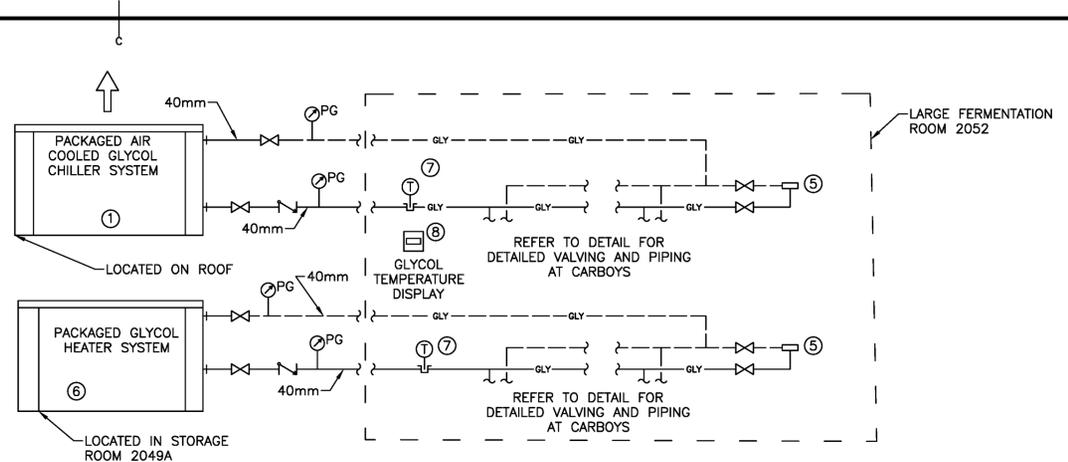
**AAFC RESEARCH CENTRE MIRCO WINERY  
AAFC KENTVILLE RESEARCH CENTRE  
KENTVILLE, NS**

drawing no. / dessin

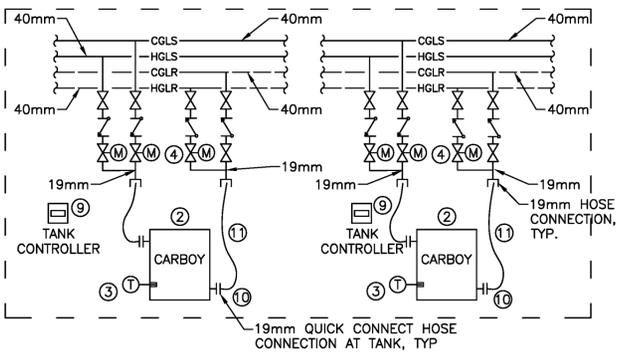
**MECHANICAL SCHEMATICS, CONTROLS AND SCHEDULES**

designed	MD/JL	conçu
date	2018-01-25	
drawn	JW	dessiné
date	2018-01-25	
approved	KB	approuvé
date	2018-01-25	
Tender	JB	Soumission
PWGSC Project Manager	Administrateur de projets TPSCG	
project number		no. du projet
<b>R.083308.001</b>		
drawing no.		no. du dessin

**M6**



- ① AIR COOLED GLYCOL CHILLER SYSTEM C/W CIRCULATION PUMP
- ② STAINLESS STEEL JACKETED CARBOY (OWNER SUPPLIED)
- ③ TEMPERATURE PROBE INSTALLED IN WELL - TYPICAL FOR EACH TANK
- ④ CONTROL VALVE - TYPICAL FOR EACH TANK
- ⑤ BYPASS VALVE - 3/4" BYPASS CONTROL VALVE, BRASS BODY, ADJUSTABLE PRESSURE
- ⑥ PACKAGED GLYCOL HEATER SYSTEM - LOW WATT DENSITY HEATER C/W CIRCULATION PUMP
- ⑦ TEMPERATURE SENSOR
- ⑧ GLYCOL TEMPERATURE DISPLAY AND ALARM
- ⑨ TANK TEMPERATURE CONTROLLER - MOUNTED ABOVE EACH TANK
- ⑩ HOSE QUICK DISCONNECT, TYP AT EACH TANK JACKET INLET/OUTLET
- ⑪ HOSE FOR GLYCOL, TYP



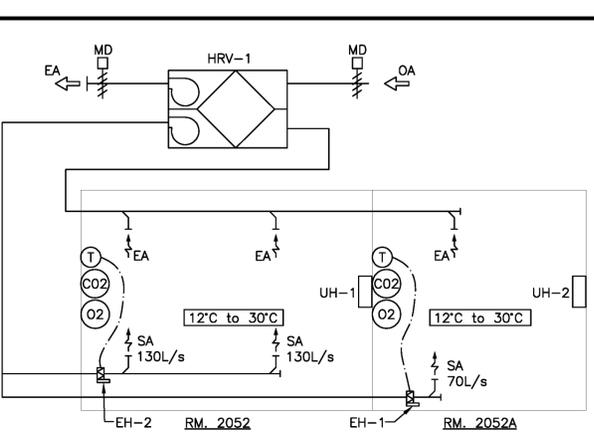
**2 CARBOY HEATING AND COOLING SYSTEM SCHEMATIC, TYP OF 20**  
SCALE : N.T.S.

TAG	FIXTURE TYPE	PLUMBING CONNECTIONS (MINIMUM, mm)					REMARKS
		DRAIN	VENT	DCW	DHW	TEMPERED	
SS-1	STAINLESS STEEL COUNTER LAV	32	32	12	12	-	1 AND 1/2 SINK
SS-2	STAINLESS STEEL COUNTER LAV	32	32	12	12	-	DOUBLE SINK
SS-3	STAINLESS STEEL COUNTER LAV	32	32	12	12	-	DOUBLE SINK
FFD	FUNNEL FLOOR DRAIN	75	-	-	-	-	-

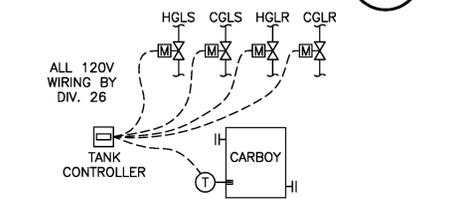
TYPE MARK	DESCRIPTION	MOUNTING	OVERALL SIZE (mm)	CONNECTION SIZE (mm)	REMARKS
S-1	SPIRAL DUCT GRILLE	DUCT	200x150		C/W BAL. DAMPER, ALUMINUM FINISH
S-2	SPIRAL DUCT GRILLE	DUCT	250x200		C/W BAL. DAMPER, ALUMINUM FINISH
S-3	LOUVERED FACE SUPPLY, 20mm BLADE SPACING, DOUBLE DEFLECTION	DUCT	200x200		C/W BAL. DAMPER, ALUMINUM FINISH
S-4	SQUARE CONE DIFFUSER	DUCT	100Ø		C/W BAL. DAMPER, ALUMINUM FINISH
S-X	SQUARE CONE DIFFUSER	SURFACE			EXISTING
R-1	LOUVERED FACE RETURN	DUCT	600x300		C/W BAL. DAMPER, ALUMINUM
R-X	SQUARE PERFORATED GRILLE	SURFACE			EXISTING
E-1	SPIRAL DUCT GRILLE	DUCT	200x150		C/W BAL. DAMPER, ALUMINUM FINISH
E-2	SPIRAL DUCT GRILLE	DUCT	250x200		C/W BAL. DAMPER, ALUMINUM FINISH

MARK	SERVICE	ARRANGEMENT	AIR FLOW RATE (L/s)	NOISE LEVEL (dBA)	FAN POWER OUTPUT (W)	SENS COOLING (kW)	RATED DB (°C)	RATED EAT WB (°C)	COMMENTS
HP-1A	MEZZANINE	CEILING	420-640	32	50	7	22	18	SENSIBLE HEATING 7kW
EU-1	2052	SUSPENDED	800	-	184	5	12	11	
EU-2	2052a	SUSPENDED	800	-	184	2.5	12	11	
EU-3	2051	SUSPENDED	400	-	92	1.4	12	11	
EU-4	2047	SUSPENDED	400	-	92	1.4	4	3.5	
EU-5	2048	SUSPENDED	400	-	92	1.4	12	11	

MARK	SERVICE	ARRANGEMENT	COP	RATED AMBIENT DB (°C)	TOTAL COOLING LOADS (kW)	TOTAL HEATING LOADS (kW)	VOLTAGE	PHASE	COOLING MODULATION
CU-1	EU-1, EU-2, EU-3, EU-4, EU-5	ROOF MOUNTED	3.43	-31.5	12	-	208	3	3 STAGES
HP-1	HP-1A	WALL MOUNTED	3.43	0	7	7	208	1	VARIABLE

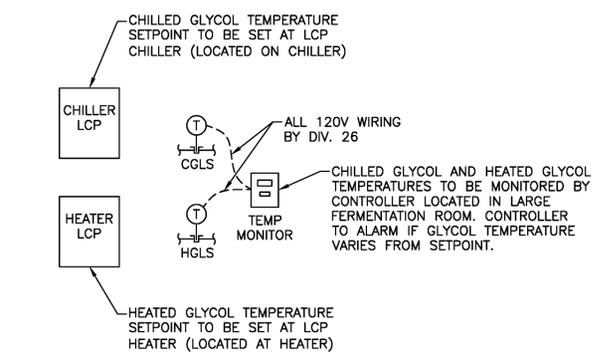


**1 CONTROLS - HRV-1**  
SCALE : N.T.S.

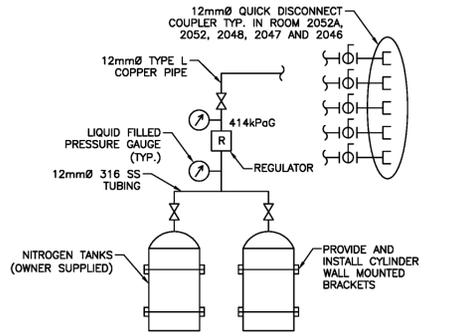


- TYPICAL TANK CONTROLLER SEQUENCE:**
- TANK TEMPERATURE SETPOINT TO BE SET BY LOCAL TANK CONTROLLER.
  - ON CALL FOR COOLING HGLS AND HGLR VALVES CLOSE, AND CGLS AND CGLR VALVES OPEN.
  - ON CALL FOR HEATING, CGLS AND CGLR VALVES CLOSE, AND HGLS AND HGLR VALVES OPEN.

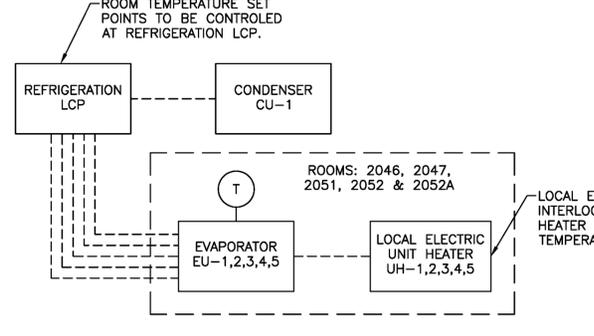
**3 TANK TEMPERATURE CONTROLS, TYPICAL**  
SCALE : N.T.S.



**4 CARBOY CHILLER AND HEATER CONTROLS**  
SCALE : N.T.S.

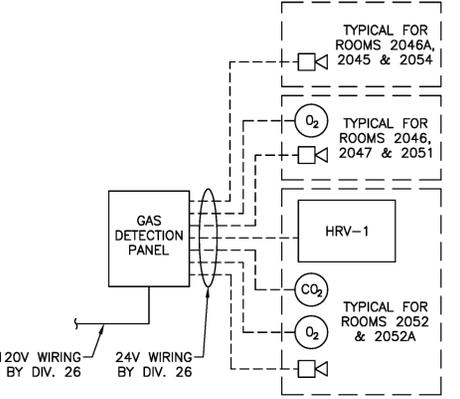


**5 NITROGEN SCHEMATIC**  
SCALE : N.T.S.



**6 CONTROL DIAGRAM - REFRIGERATION SYSTEM FOR ROOMS 2046, 2047, 2051, 2052 & 2052A**  
SCALE : N.T.S.

- CONTROL SEQUENCE FOR ROOMS: 2046, 2047 & 2051**
- GAS DETECTION PANEL TO ACTIVATE ROOM STROBE WHEN ASSOCIATED ROOM O2 SENSOR DETECTS OXYGEN LEVELS FALLING BELOW 19.0% (ADJUSTABLE). STROBE LOCATED IN ROOM 2046A SHALL ALSO ACTIVATE WHEN THE STROBE IN ROOM 2046, 2047 OR 2051 ACTIVATES.
  - GAS DETECTION PANEL TO ACTIVATE ROOM AUDITORY ALARM WHEN ASSOCIATED ROOM O2 SENSOR DETECTS OXYGEN LEVELS FALLING BELOW 17.0% (ADJUSTABLE). AUDITORY ALARM LOCATED IN ROOM 2046A SHALL ALSO ACTIVATE WHEN THE ALARM IN ROOM 2046, 2047 OR 2051 ACTIVATES.
- CONTROL SEQUENCE FOR ROOMS: 2052, 2052A, 2045 & 2054**
- GAS DETECTION PANEL TO ACTIVATE ROOM STROBE WHEN ASSOCIATED ROOM O2 SENSOR DETECTS OXYGEN LEVELS FALLING BELOW 19.0% (ADJUSTABLE) OR CO2 LEVELS RAISE ABOVE 1000 PPM (ADJUSTABLE). STROBE LOCATED IN ROOM 2045 & 2054 SHALL ACTIVATE WHEN THE STROBE IN ROOM 2052 OR 2052A IS ACTIVATED.
  - GAS DETECTION PANEL TO ACTIVATE ROOM AUDITORY ALARM WHEN ASSOCIATED ROOM O2 SENSOR DETECTS OXYGEN LEVELS FALLING BELOW 17.0% (ADJUSTABLE) OR CO2 LEVELS RAISE ABOVE 2000 PPM (ADJUSTABLE). AUDITORY ALARM LOCATED IN ROOM 2045 & 2054 SHALL ACTIVATE WHEN THE ALARM IN ROOM 2052 OR 2052A IS ACTIVATED.
  - GAS DETECTION PANEL TO SEND SIGNAL TO HRV-1 TO ACTIVATE HIGH SPEED MODE TO PURGE SPACE WHEN WARNING OR ALARM IS SENT BY THE CO2 OR O2 SENSOR IN ROOM 2052 OR 2052A



**7 GAS DETECTION SCHEMATIC**  
SCALE : N.T.S.

MARK	TYPE	S/A AIRFLOW (L/s)	S/A EA DBT (°C)	S/A LA DBT (°C)	R/A AIRFLOW (L/s)	WINTER SENSIBLE EFFICIENCY (%)	SUPPLY FAN ESP (Pa)	SUPPLY FAN MOTOR (kW)	RETURN FAN ESP (Pa)	RETURN FAN MOTOR (kW)	ELECTRICAL DATA				DISCONNECT	REMARKS
											VOLTS	PHASE	HERTZ	AMPS		
HRV-1	SENSIBLE HEAT RECOVERY	330	-20	15	330	60	75	0.19	75	0.19	120	1	60	5.7		C/W LOW SPEED SETTING TO SUPPLY 170L/s AT 75Pa ESP.