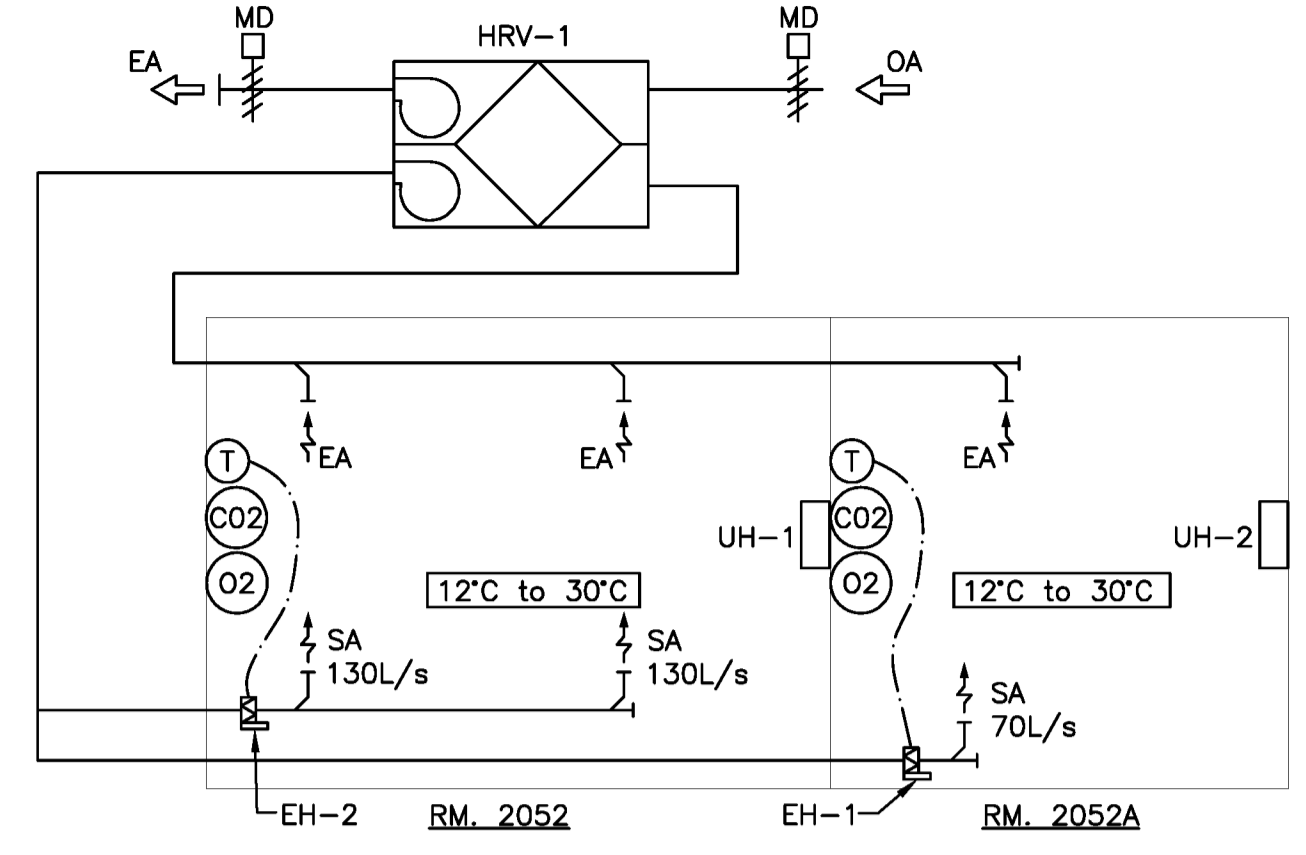


**HRV-1**  
COMMERCIAL HEAT RECOVERY VENTILATOR WITH ALUMINUM HEAT RECOVERY CORE, 330 l/s @ 186 Pa SUPPLY AND EXHAUST. TWO SPEED SUPPLY AND EXHAUST FANS WITH RECIRCULATION DEFROST.

**EH-1**  
ELECTRIC DUCT HEATER - 1.6 kW, SCR CONTROL, 208/3/60 C/W BUILT IN CONTROL TRANSFORMER AND TEMPERATURE SENSOR, HIGH LIMIT SAFETIES AND AIR FLOW SWITCH. WALL MOUNTED DUCTSTAT TO CONTROL SCR TEMPERATURE SETTING.

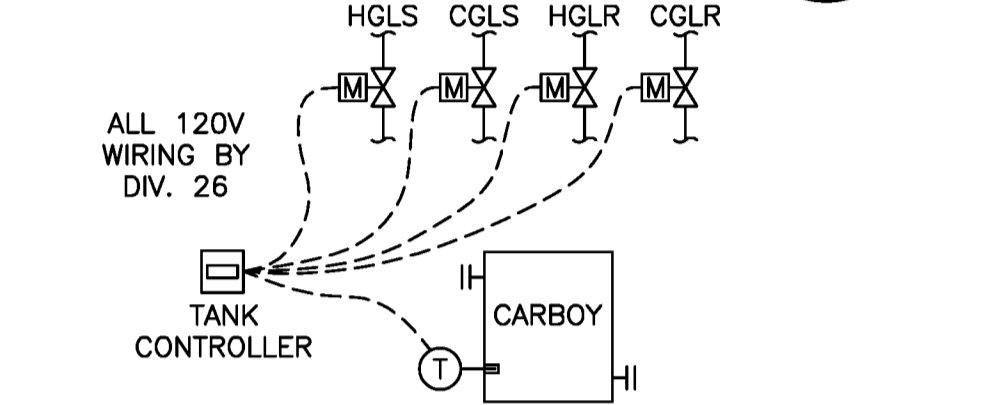
**EH-2**  
ELECTRIC DUCT HEATER - 5.2 kW, SCR CONTROL, 208/3/60 C/W BUILT IN CONTROL TRANSFORMER, HIGH LIMIT SAFETIES AND AIR FLOW SWITCH. WALL MOUNTED TEMPERATURE CONTROLLER TO CONTROL SCR TEMPERATURE SETTING.

**MODE OF OPERATION**  
1. WALL MOUNTED TEMPERATURE CONTROLLER TO MAINTAIN SPACE SUPPLY AIR TEMPERATURE BY MODULATING ELECTRIC HEATER.  
2. HRV-1 RUNS ON LOW SPEED (330 l/s @ 186 Pa), CYCLES ON HIGH SPEED FOR CO2 AND O2 READINGS.



### 1 CONTROLS - HRV-1

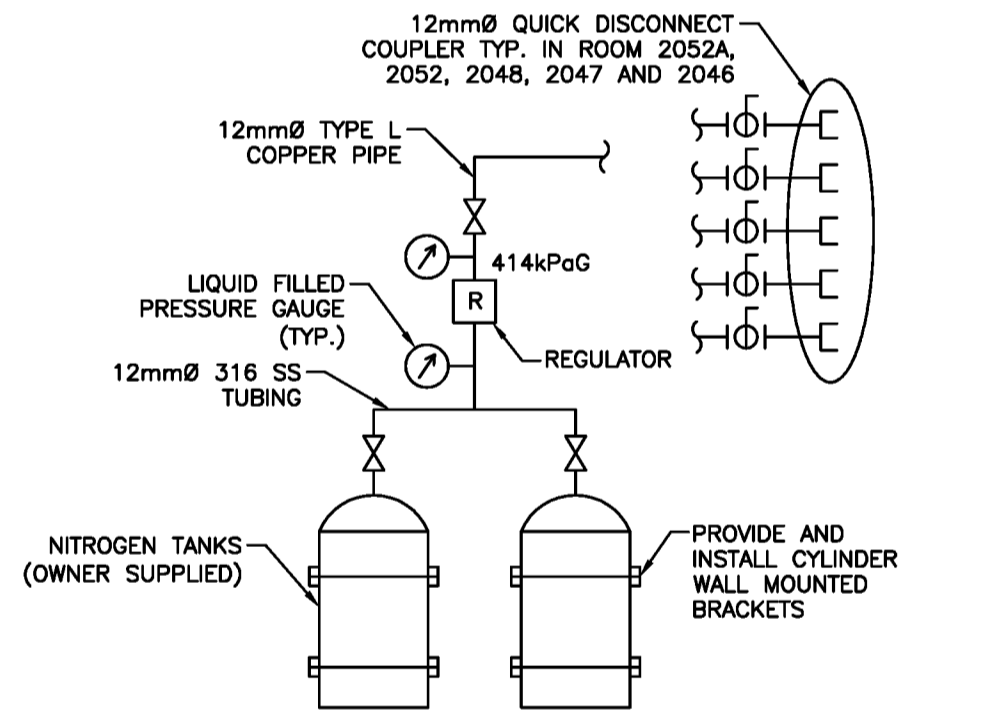
SCALE : N.T.S.



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

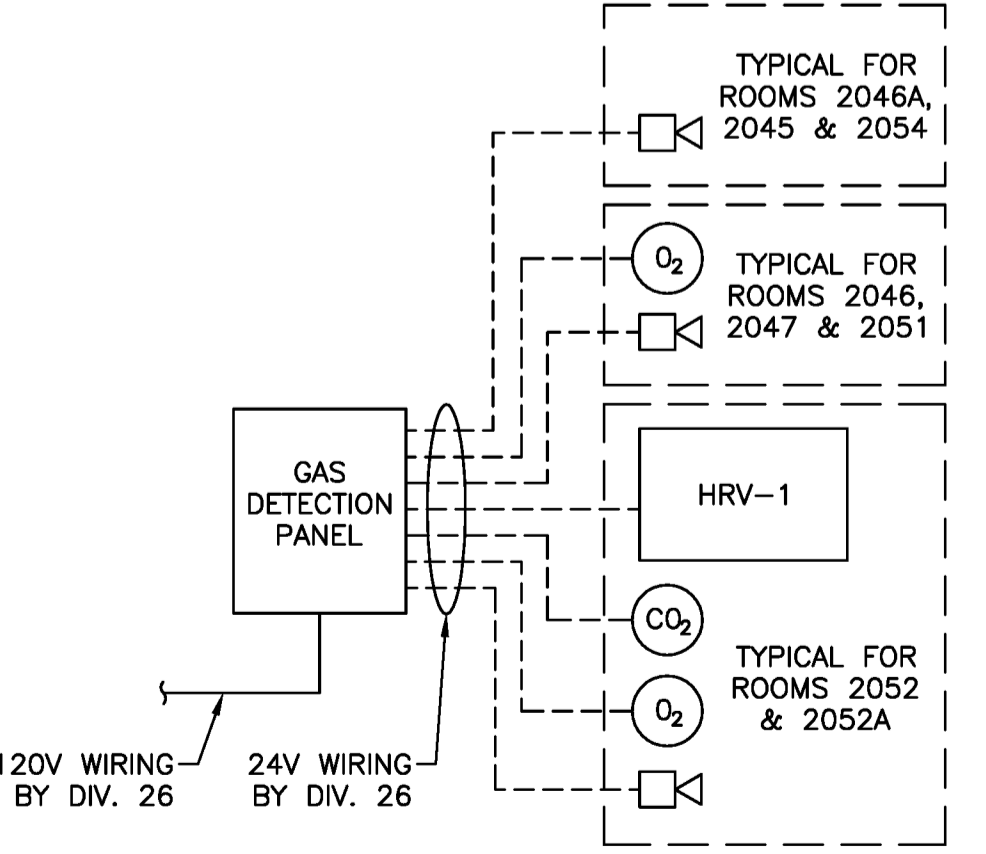
### 3 TANK TEMPERATURE CONTROLS, TYPICAL

SCALE : N.T.S.



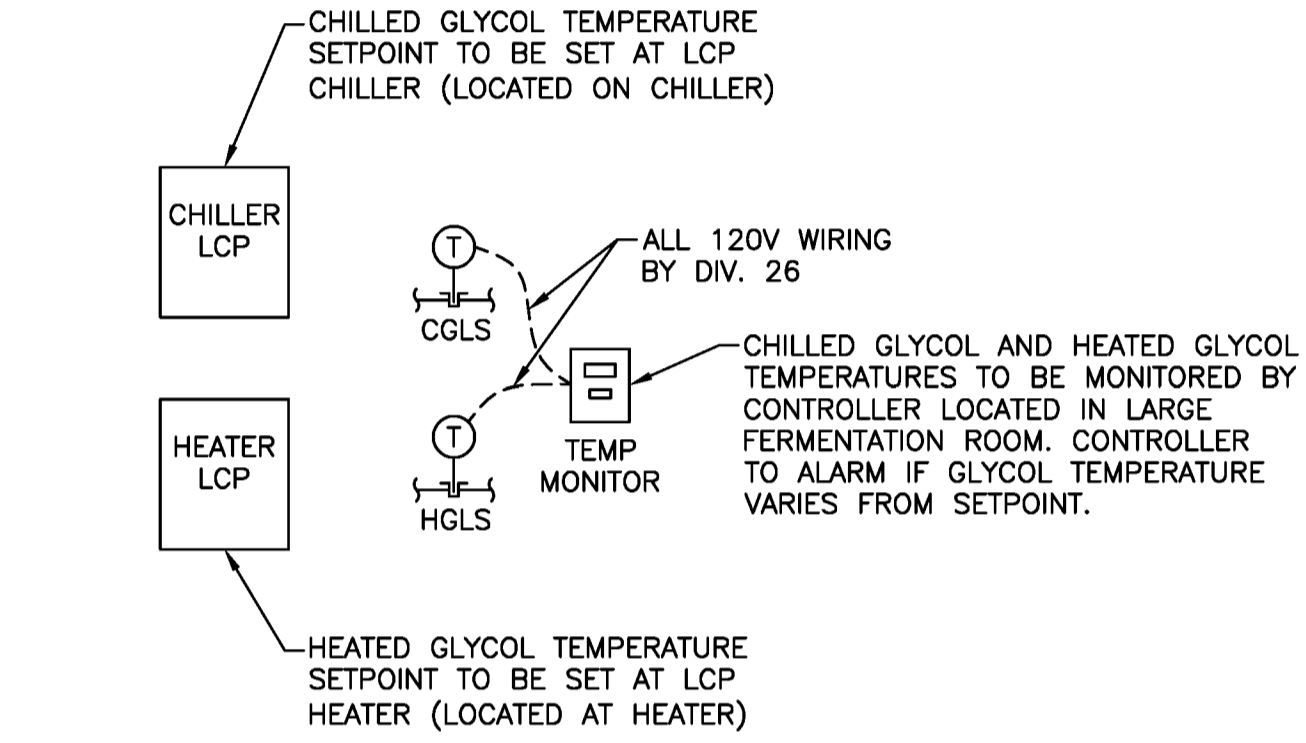
### 5 NITROGEN SCHEMATIC

SCALE : N.T.S.



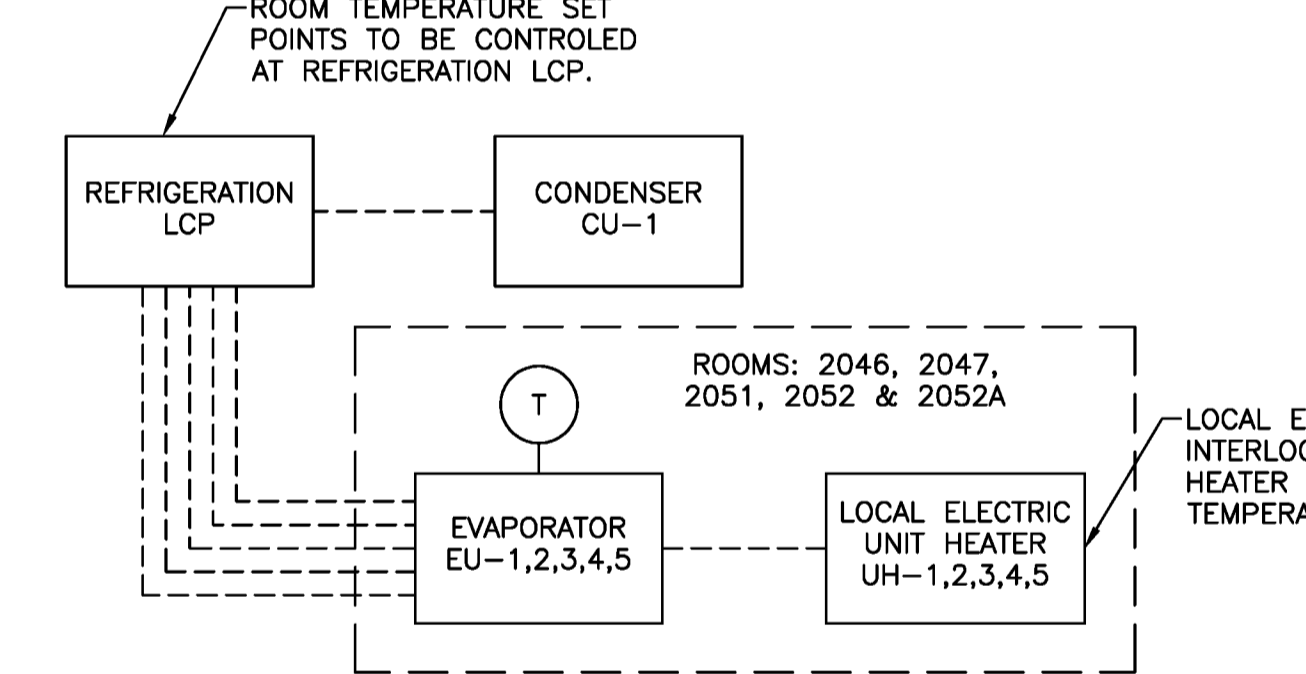
### 7 GAS DETECTION SCHEMATIC

SCALE : N.T.S.



### 4 CARBOY CHILLER AND HEATER CONTROLS

SCALE : N.T.S.

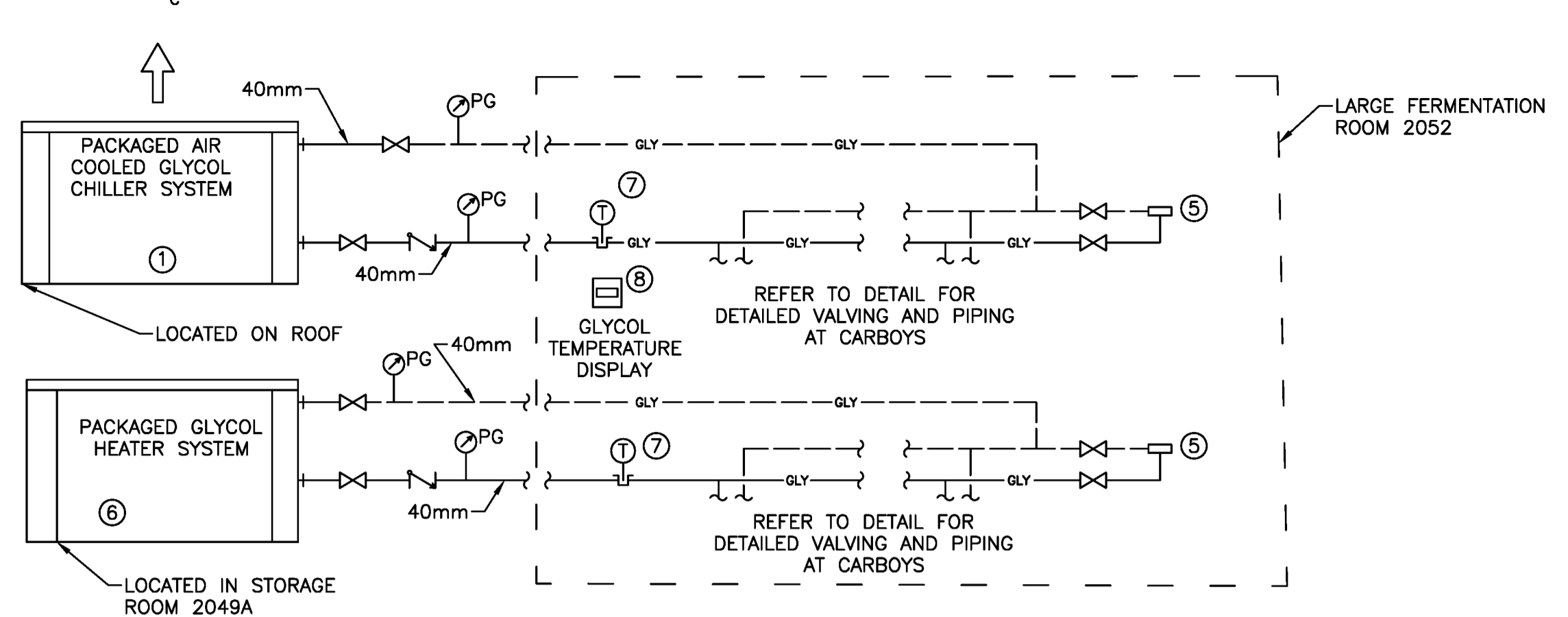


### 6 CONTROL DIAGRAM - REFRIGERATION SYSTEM FOR ROOMS 2046, 2047, 2051, 2052 & 2052A

SCALE : N.T.S.

**CONTROL SEQUENCE FOR ROOMS: 2046, 2047 & 2051**  
1. 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.  
2. 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**  
1. 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.  
2. 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.  
3. 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



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.

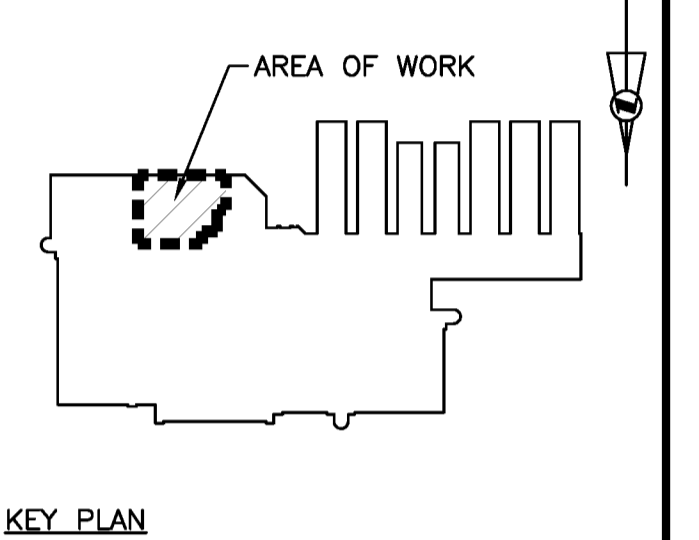
PLUMBING FIXTURE SCHEDULE							
TAG	FIXTURE TYPE	PLUMBING CONNECTIONS (MINIMUM, mm)					REMARKS
		DRAIN	VENT	DCW	DHW	TEMPERED	
SS-1	STAINLESS STEEL COUNTER LAV	32	32	12	12	-	1 AND 1/2 SINK
SS-2	STAINLESS STEEL COUNTER LAV	32	32	12	12	-	DOUBLE SINK
SS-3	STAINLESS STEEL COUNTER LAV	32	32	12	12	-	DOUBLE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

DIFFUSER / GRILLE SCHEDULE					
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

DUCTLESS AC SPLIT SYSTEM SCHEDULE - EVAPORATOR COMPONENTS									
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	

REFRIGERATION SPLIT SYSTEM SCHEDULE - CONDENSER COMPONENTS									
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

HEAT RECOVERY VENTILATOR (HRV) SCHEDULE														
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			
											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



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 / 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 JB
PWSC Project Manager	Administrateur de projets TPSC	
project number		no. du projet
<b>R.083308.001</b>		
drawing no.		no. du dessin
<b>M6</b>		

