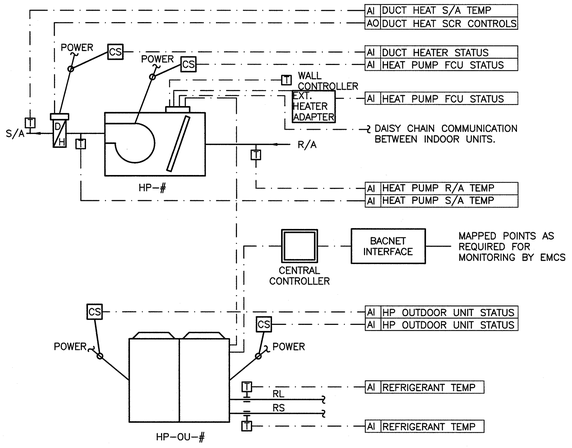


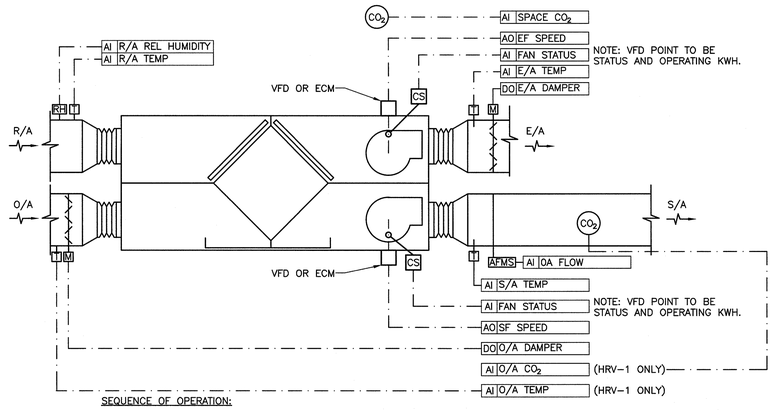
SEQUENCE OF OPERATION:

1. INDOOR HEAT PUMP UNIT IS TO MAINTAIN SPACE TEMPERATURE SET POINT BY PROVIDING EITHER COOLING OR HEATING AS REQUIRED.
2. AUXILIARY ELECTRIC HEATING IS TO BE ENABLED BY HEAT PUMP CONTROLLER AS REQUIRED WHEN HEAT PUMPS CANNOT MAINTAIN SPACE TEMP SET POINT. IF ENABLED, DUCT HEATER IS TO MODULATE AS REQUIRED TO MAIN DISCHARGE AIR TEMP OF 38°C.
3. HEAT PUMP FAN SHALL NOT RUN WHEN SET POINT IS SATISFIED.
4. SPACE TEMP SET POINTS ARE TO BE AS FOLLOWS:

	OCCUPIED	UNOCCUPIED
HEATING	70°F	65°F
COOLING	75°F	80°F

5. SET POINTS AND SCHEDULE ARE TO BE USER ADJUSTABLE AT CENTRAL CONTROL SYSTEM. ZONE CONTROLLER SET POINT SHALL OVERRIDE CENTRAL SYSTEM FOR 3 HOURS.

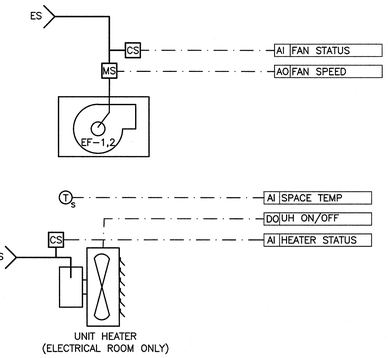
DETAIL – HEAT PUMP SYSTEM ZONE CONTROL 1 M04/M04



SEQUENCE OF OPERATION:

1. UNIT TO RUN DURING OCCUPIED HOURS AND TO BE OFF DURING UNOCCUPIED HOURS. TO BE USER ADJUSTABLE AT EMCS.
2. DAMPERS ARE TO OPEN WHEN UNIT RUNS AND CLOSE WHEN UNIT IS NOT RUNNING.
3. LOBBY (HRV-2) AND OFFICES (HRV-4):
   3.1. UNIT TO RUN AT CONSTANT VOLUME WHEN ENABLED. FAN SPEEDS ARE TO BE DETERMINED WITH AIR BALANCER TO PROVIDE FLOWS INDICATED.
4. GIFT SHOP (HRV-1) AND EXHIBIT SPACE (HRV-3):
   4.1. UNIT TO RUN AT MINIMUM SPEED WHEN ENABLED. FAN SPEED IS TO BE DETERMINED WITH AIR BALANCER TO PROVIDE MINIMUM FLOWS INDICATED.
   4.2. UNIT IS TO MODULATE SUPPLY AND EXHAUST FANS AT THE SAME RATE TO KEEP SPACE CO_2 NO GREATER THAN 700 PPM ABOVE O/A CO_2 CONCENTRATION.
   4.3. MAXIMUM FAN SPEED IS TO BE DETERMINED WITH AIR BALANCER TO PROVIDE MAXIMUM FLOWS INDICATED.

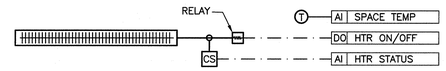
DETAIL – HRV'S 2 M04/M04



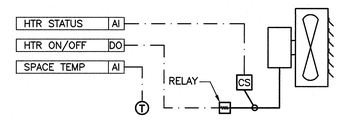
SEQUENCE OF OPERATION:

1. ON A CALL FOR COOLING, FAN TO MODULATE ON A PID LOOP TO MAINTAIN ROOM TEMP SET POINT. COOLING SET POINT = 24°C.
2. ON A CALL FOR HEATING, UNIT HEATER TO RUN. HEATING SET POINT = 15°C.

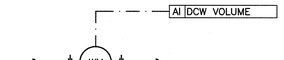
DETAIL – ELECTRICAL AND TELECOM ROOM CONTROLS 3 M04/M04



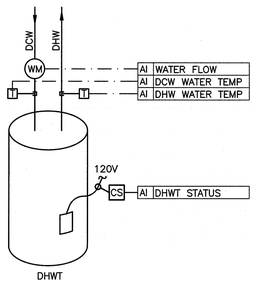
DETAIL – BB HEAT CONTROLS (TYP.) 4 M04/M04



DETAIL – UNIT HEATER, FORCE FLOW CONTROLS 5 M04/M04



DETAIL – DCW WATER ENTRANCE 6 M04/M04

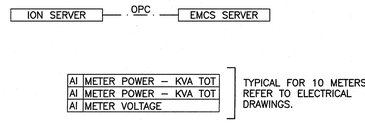


DETAIL – DHW TANK, DHWT-1, DHWT-2 7 M04/M04

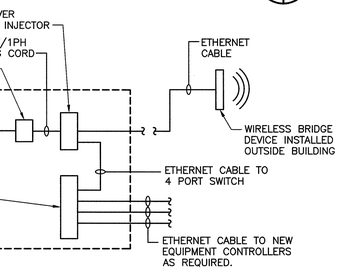
SEQUENCE OF OPERATION:

1. PUMP TO RUN CONTINUOUS DURING OCCUPIED HOURS.

DETAIL – DHWR PUMP, CP-1 8 M04/M04



DETAIL – INTERFACE WITH ENERGY METERING 9 M04/M04



1. REMOTE ACCESS:
   1.1. ALL POINTS AND GRAPHICS PROVIDED TO ON-SITE OWS TO ALSO BE ACCESSIBLE REMOTELY FROM EXISTING OWNER WORKSTATION.
   1.2. REMOTE OWNER WORKSTATION TO BE CAPABLE OF READING AND WRITING ALL POINTS AS DESCRIBED IN POINTS LIST ON THIS DRAWING.
2. WIRELESS BRIDGE:
   2.1. WIRELESS BRIDGE DEVICE TO BE GENERALLY INSTALLED BELOW OVERHANG UNLESS OTHERWISE NOTED. LOCATION OF DEVICE TO BE APPROVED BY DESIGN ENGINEER OR PARKS CANADA REPRESENTATIVE PRIOR TO INSTALLATION.
   2.2. DEVICE TO BE UBIQUITI NETWORKS NANO STATION M5 OR APPROVED EQUAL.

DETAIL – CONTROLS SCHEMATIC – NETWORK ARCHITECTURE 10 M04/M04

Public Works and Government Services Canada / Travaux Publics et Services gouvernementaux Canada

root ARCHITECTURE

CBCL LIMITED
Consulting Engineers

NOTES:

1. SPACE TEMPERATURES, CO_2 LEVELS, RELATIVE HUMIDITY ARE TO BE SHOWN ON FLOOR PLAN GRAPHIC.

LEGEND:

T	TEMPERATURE SENSOR
(T)	TEMPERATURE SENSOR
CS	CURRENT SENSOR
(WM)	WATER METER
AFMS	AIRFLOW MONITORING STATION
ES	ELECTRICAL SUPPLY, SEE ELECTRICAL DRAWINGS
MS	MOTOR STARTER OR ECM CONTROLLER

revisions		date
5	ISSUED FOR TENDER	09.15 2017
4	RS4 100% SUBMISSION	09.01 2017
3	RS4 99% SUBMISSION	06.30 2017
2	RS4 66% SUBMISSION	05.31 2017
1	RS4 33% SUBMISSION	04.30 2017
0	RS3 SUBMISSION	03.31 2017

project / projet
GREEN GABLES–PHASE 2
NEW VISITOR CENTRE

QUEENS CO., PEI

drawing / dessin
MECHANICAL

CONTROL SCHEMATICS

designed CJR / conçu
date MAR–2017
drawn DTA / dessiné
date MAR–2017
approved / approuvé
date
Tender / Soumission
PWGSC Project Manager / Administrateur de projets TPSGC

THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF THE PROVINCE OF PRINCE EDWARD ISLAND
VALID FOR THE YEAR 2017
C.J. Ruddick
No. 1459
DATE: Sept 15/17
LICENSED PROFESSIONAL ENGINEER
PROVINCE OF PRINCE EDWARD ISLAND

project number / no. du projet
R.081199.001

drawing no. / no. du dessin
M04 OF 5

E-DRM/GDD-E: 551163

PWGSC B1 (2004)