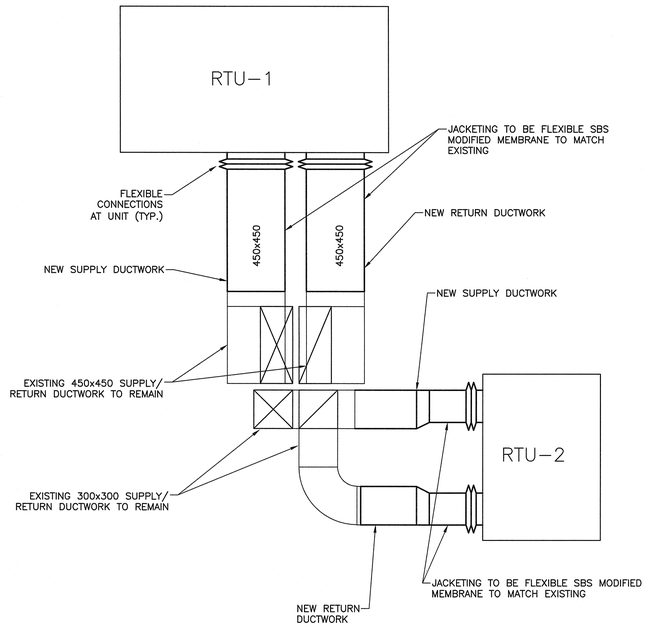
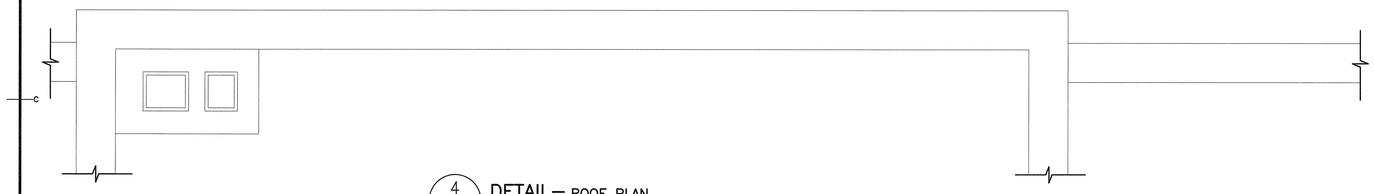
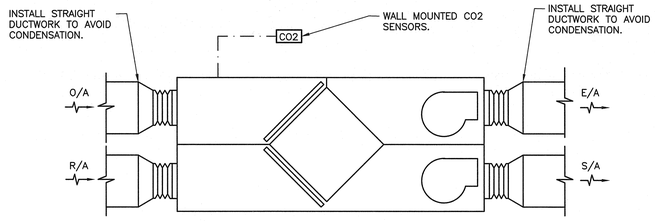




4/M2 **DETAIL– ROOF PLAN**

SCALE : 1:20

0mm 500mm 1000mm 1500mm 2000mm 2500mm

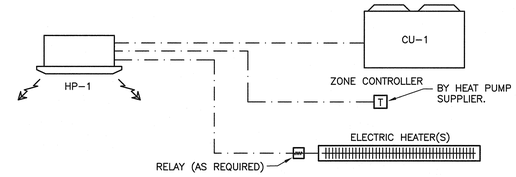


SEQUENCE OF OPERATION:

1. SF AND EF TO MODULATE BASED ON CO_2 LEVELS. SET POINT = 1200 PPM.

1/M2 **DETAIL – ERV–1**

SCALE : N.T.S.



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 AS REQUIRED WHEN HEAT PUMPS CANNOT MAINTAIN SPACE TEMP SET POINT.
3. HEAT PUMP FAN SHALL NOT RUN WHEN SET POINT IS SATISFIED.

2/M2 **DETAIL– HEAT PUMP SYSTEM ZONE CONTROL**

SCALE : N.T.S.

SEQUENCE OF OPERATION:

1. UNIT TO RECEIVE ITS OWN INDIVIDUAL FULLY MODIFIABLE SCHEDULE C/W SETBACK SETPOINT.
2. OCCUPIED MODE: UNIT SHALL OPERATE AND THE HEATING AND COOLING SECTIONS SHALL MODULATE/STAGE TO MAINTAIN SETPOINT
3. UNOCCUPIED MODE: UNIT SHALL BE NORMALLY OFF AND SHALL BE ENERGIZED TO MAINTAIN SETPOINT.
4. COOLING: DX COOLING SHALL STAGE AS REQUIRED TO ACHIEVE SETPOINTS. ECONOMIZER COOLING TO BE ENABLED AND CONTROLLED WHEN OUTDOOR AIR TEMPERATURE PERMITS AND SHALL OVERRIDE DX COOLING.
5. HEATING: HEATING SHALL BE PROVIDED BY HEAT PUMP WITH ELECTRIC COIL PROVIDING SECOND STAGE OF HEAT AS REQUIRED

3/M2 **DETAIL RTU–1,–2 CONTROLS**

SCALE : N.T.S.

AIR CONDITIONING SCHEDULE – INDOOR UNITS

TAG	AREA SERVED	TYPE	COOLING CAPACITY (KW)	HEATING CAPACITY (KW)	MAX AIRFLOW (L/S)	POWER SUPPLY (V/HZ/PH)	ZONE CONTROLLER
HP–1	SITUATION ROOM	CEILING CASSETTE	7.03 (24 MBH)	8.21 (28 MBH)	302	208–230/60/1	START WIRED

NOTES:
- COMPLETE WITH CONDENSATE LIFT PUMPS, WASHABLE FILTER AS REQUIRED
- COMPLETE WALL MOUNTED CONTROLLERS

AIR CONDITIONING SCHEDULE – OUTDOOR UNITS

TAG	LOCATION	COOLING CAPACITY (KW)	HEATING CAPACITY (KW)	POWER SUPPLY (V/HZ/PH)	REFRIGERANT TYPE	SOUND PRESSURE (DBA)	REMARKS
CU–1	WALL	7.03 (24 MBH)	8.21 (28 MBH)	208–230/60/1	R–410A	48/50	

NOTES:
- ALL UNITS TO BE PROVIDED SUPPLIED WITH A WEATHERPROOF DISCONNECT
- COOLING CAP BASED ON 81°F DB, 71.1°F WB OUTDOOR SUMMER
- ALL UNITS c/w SINGLE POINT POWER SUPPLY
- ALL UNITS c/w WIND BAFFLE AND ALUMINUM WALL BRACKET

GRILLE / DIFFUSER SCHEDULE

SYMBOL	TYPE	SIZE (MM)	NECK SIZE (MM)	CAPACITY (L/S)	REMARKS
S–1	ROUND ADJUSTABLE	150	75	AS SHOWN	COLOR: WHITE. ADJUSTABLE DIFFUSER

ERV SCHEDULE

TAG	LOCATION	AREA SERVED	TYPE	EFFICIENCY SUMMER/WINTER (%)	SUPPLY AIR CAPACITY (L/S)	EXHAUST AIR CAPACITY (L/S)	EXTERNAL STATIC PRESSURE EXHAUST (PA)	SUPPLY FAN MOTOR (KW)	FILTERS	POWER SUPPLY (V/HZ/PH)	REMARKS
ERV–1	STORAGE ROOM	SITUATION ROOM	ENERGY RECOVERY VENTILATOR; LATENT AND SENSIBLE RECOVERYCORE	60/75	113	113	19.85	0.373	50 MM MERV8	120/60/1	c/w ECM MOTORS AND CO2 WALL SENSOR STORAGE ROOM DOES NOT CONTAIN FLOOR DRAIN. ERV WITH DRAIN CONNECTION IS NOT ACCEPTABLE. c/w HANGING BRACKETS OR MOUNTING FLANGE AND HANGING BAR TO MOUNT THE UNIT AS PER MANUFACTURER'S INSTALLATION MANUAL

AIR CONDITIONING SCHEDULE – ROOF TOP HEAT PUMP

TAG	AREA SERVED	TYPE	AIR FLOW (L/S)	MINIMUM OUTSIDE AIR (L/S)	AHU SUPPLY ESP (PA)	COOLING TYPE	COOLING TOTAL CAPACITY (NOMINAL TON)	HEAT PUMP HEATING/COOLING CAPACITY (KW)	HEATING TYPE	ELECTRIC HEATING COIL CAPACITY (KW)	POWER SUPPLY (V/HZ/PH)	REMARKS
RTU–1	OFFICE SPACE	HEAT PUMP w/ ELECTRIC HEAT	566	57	375	DX	3	11.69/10.55 (36/39.9 MBH)	HEAT PUMP W/ ELECTRIC HEATING COIL	15	575/60/3	ECONOMIZER. ELECTRIC HEATING COIL. 7–DAY PROGRAMMABLE THERMOSTAT. COORDINATE BREAKER SIZE WITH ELECTRICAL. MAXIMUM RTU LENGTH: 2200 MM
RTU–2	OPERATIONS ROOM	HEAT PUMP w/ ELECTRIC HEAT	378	38	375	DX	2	7.82/7.06 (24.1/26.7 MBH)	HEAT PUMP W/ ELECTRIC HEATING COIL	15	208–230/60/1	ECONOMIZER. ELECTRIC HEATING COIL. 7–DAY PROGRAMMABLE THERMOSTAT. COORDINATE BREAKER SIZE WITH ELECTRICAL. MAXIMUM RTU LENGTH: 1400 MM

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

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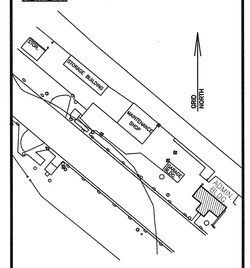
KEYPLAN:



REGISTERED PROFESSIONAL ENGINEER
DATE SEP 8/17
M. L. Casimiro Ramirez
10903
PROVINCE OF NOVA SCOTIA

revisions		date
2	ISSUED FOR TENDER	SEP 8 2017
1	ISSUED FOR TENDER	AUG 10 2017
0	ISSUED FOR TENDER	JUL 28 2017
B	ISSUED FOR REVIEW	MAY 16 2017
A	ISSUED FOR REVIEW	MAR 31 2017

project / projet

CANSO CANAL
PORT HASTINGS,
INVERNESS COUNTY, NS
HEAT PUMPS

drawing / dessin

ADMINISTRATION BUILDING
ROOF PLAN,
DETAILS AND SCHEDULES

designed MC / conçu
date SEP 8 2017
drawn DA / dessiné
date SEP 8 2017
approved / approuvé
date
Tender / Soumission
2017-09-18
PWGSC Project Manager / Administrateur de projets TPSGC
project number / no. du projet
R.090672.001
drawing no. / no. du dessin
M2

PWGSC B1 (2004)

0 10 20mm 40 60 80 100 120 140 160 180 200mm

E–DRM/GDD–E: 545152 Version 1