



1 VENTILATION LAYOUT – MAIN FLOOR
M1.1 SCALE: 1:70

DUCTLESS MINI-SPLIT HEAT PUMP SCHEDULE														
INDOOR UNIT(S)						OUTDOOR UNIT								REMARKS
TAG	MAKE	MODEL	CAPACITY (MBH)	SUPPLY AIRFLOW (CFM)	ELECTRICAL	TAG	MODEL	CAPACITY (MBH)	ELECTRICAL	MCA	BREAKER SIZE	REFRIGERANT PIPING		
												LIQUID	GAS	
AC-1	MITSUBISHI	SLZ-KA12NAR1.7H	11.1 MBH (CLG) 13.6 MBH (HTG)	250-350	208-230V/1Ø 1.0 MCA	HP-1	MXZ-3C24NA2-U1	22 MBH (CLG) 25 MBH (HTG)	208-230V/1Ø	22.1	25	¼"Ø	½"Ø	c/w CONDENSATE PUMP, WIRED WALL-MOUNTED DIGITAL CONTROLLER, THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING AND ADDING ADDITIONAL REFRIGERANT CHARGE REQUIRED TO PROVIDE COMPLETE AND FULLY OPERATIONAL SYSTEMS. AUXILIARY HEAT SHALL BE CONTROLLED BY HEAT PUMP. REFER TO 6/M4.2
AC-2	MITSUBISHI	MSZ-GE12NA-8	12 MBH (CLG) 14.4 MBH (HTG)	109-399	208-230V/1Ø 1.0 MCA									
AC-3	MITSUBISHI	MSZ-GE12NA2/H2	12 MBH (CLG) 14.4 MBH (HTG)	109-399	208-230V/1Ø 1.0 MCA	HP-2	MUZ-GE12NA2/H2	12 MBH (CLG) 14.4 MBH (HTG)	208-230V/1Ø	12	15	¼"Ø	⅜"Ø	

GENERAL NOTES: HVAC
ALL DUCTWORK FOR SUPPLY AND RETURN DUCT COLLARS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASHRAE AND SMACNA RECOMMENDATIONS AND SHALL BE GALVANIZED STEEL. C/W DAMPERS AND LOCKING QUADRANT.

SUPPLY AND LOCATE ALL SUPPORTS, SLEEVES, ROOF CURBS ETC., REQUIRED FOR THIS WORK.

ALL DUCTS SHALL BE HUNG WITH ADEQUATE HANGERS SUPPORTED INDEPENDENTLY. ALL ANGLES AND RODS SHALL BE GALVANIZED. ALL AUXILIARY STEEL NEEDED TO HANG DUCTS OR FANS FROM JOISTS, TRUSSES OR STEEL BEAMS SHALL BE PROVIDED BY THIS CONTRACTOR.

A. DUCTS AND EQUIPMENT SHALL BE HUNG FROM THE TOP OR BOTTOM CHORDS OF JOIST AT PANEL POINTS OR FLANGES OF STEEL BEAMS.

B. ALL SQUARE ELBOWS TO HAVE DOUBLE THICKNESS AIRFOIL TURNING VANES.

C. DUCTS CANNOT IN ANY LOCATION BE SUPPORTED FROM FURRING, CEILING CONSTRUCTION, PIPING, ELECTRICAL CONDUIT OR ROOF DECK.

D. PROVIDE CANVAS FLEXIBLE CONNECTIONS AT ALL AC UNITS SUPPLY AND RETURN DUCTS AND ALL EXHAUST FANS.

THIS CONTRACTOR SHALL PROVIDE ALL LABOUR, MATERIALS & TOOLS REQUIRED FOR COMMISSIONING, CALIBRATION, ADJUSTMENT, AND SETTING OF ALL CONTROL DEVICES FOR PROPER OPERATION OF SYSTEMS. PROVE ALL MODES OF OPERATION PRIOR TO FINAL INSPECTION TO THE SATISFACTION OF THE ENGINEER.

ALL MATERIALS SHALL CONFORM TO CSA, NFPA AND CEC REQUIREMENTS AND BEAR A CSA LABEL.

THIS CONTRACTOR SHALL NOTIFY THE OWNER WHEN THE ROOF OR WALL OPENING LOCATIONS HAVE BEEN DETERMINED AND PRIOR TO CUTTING. THE OWNER OR HIS REPRESENTATIVE SHALL SUPERVISE CUTTING OF ALL OPENINGS.

THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATIONS FOR EQUIPMENT, DUCTWORK AND CONTROL DEVICES. THIS CONTRACTOR SHALL VERIFY ALL EQUIPMENT LOCATIONS ON SITE PRIOR TO INSTALLATION AND SHALL COORDINATE THE LOCATIONS SO AS NOT TO CAUSE INTERFERENCE WITH THE WORK OF OTHER TRADES.

THIS CONTRACTOR SHALL PROVIDE ALL LABOUR, MATERIAL, TOOLS, EQUIPMENT, ETC. REQUIRED FOR THE INSTALLATION/MODIFICATION OF THE HVAC SYSTEMS AS SHOWN TO PROVIDE A COMPLETE AND OPERATING SYSTEM.

VISIT THE JOB SITE AND EXAMINE ALL DRAWINGS AND CONDITIONS WHICH COULD AFFECT THE WORK. NO EXTRA COST WILL BE ALLOWED DUE TO FAILURE TO TAKE SITE CONDITIONS INTO CONSIDERATION. BE FAMILIAR WITH ALL RELATED WORK TO AVOID CONFLICTS WITH OTHER TRADES.

THE COMPLETE INSTALLATION/MODIFICATION OF THE HVAC SYSTEMS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ALL APPLICABLE CODES AND STANDARDS.

OBTAIN PERMITS AND PAY ALL FEES FOR WORK AND ALL REQUIRED INSPECTIONS.

THIS CONTRACTOR SHALL ENSURE THAT ALL REQUIRED CLEARANCES AS RECOMMENDED BY THE MANUFACTURER ARE PROVIDED TO ALLOW FOR PROPER OPERATION AND SERVICING OF MECHANICAL EQUIPMENT.

BEFORE FINAL PAYMENT IS MADE, GUARANTEE ALL MATERIALS AND WORKMANSHIP SUPPLIED IN THE PERFORMANCE OF THIS CONTRACT FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE AND BE RESPONSIBLE WHEN CALLED UPON TO MAKE GOOD WITHOUT FURTHER COST TO THE OWNER, SUCH DEFECTS AS MAY APPEAR WITHIN THIS PERIOD.

KEEP ACCURATE RECORD "AS-BUILT" DRAWINGS AND SUBMIT THESE BEFORE FINAL CERTIFICATE OF COMPLETION.

BE RESPONSIBLE FOR CARE OF THE BUILDING, COORDINATE ALL CORE DRILLING WITH OWNER'S SITE REPRESENTATIVE AND EFFECTIVE TENANTS. DO ALL CUTTING, PATCHING AND PAINTING REQUIRED FOR THE WORK OF THIS TRADE. CLEAN UP ALL DEBRIS DAILY AND REMOVE FROM THE SITE ON OR BEFORE COMPLETION OF THE CONTRACT. COORDINATE WITH ALL OTHER TRADES.

ON COMPLETION OF PROJECT, SUBMIT THREE (3) HARD COVER "OPERATING AND MAINTENANCE MANUALS" FOR APPROVAL. THE MANUALS SHALL CONTAIN AN INDEX PAGE AND TABBED DIVIDER PAGES, A LIST OF THE SUPPLIER'S NAMES, ADDRESSES AND TELEPHONE NUMBERS, OPERATING AND MAINTENANCE INSTRUCTIONS FOR ALL EQUIPMENT, COPIES OF TEST CERTIFICATES, ETC. AND INCLUDING A COMPLETE SET OF "APPROVED SHOP DRAWINGS".

FURNISH GUARANTEES FOR ALL EQUIPMENT SUPPLIED UNDER THIS CONTRACT.

ALL FLEXIBLE DUCTWORK SHALL BE INSULATED (EQUAL TO "BOFLEX") INSULATED MULTI-PLY ALUMINUM LAMINATE PMA-TYPE, MAXIMUM LENGTH 6'-0"

GENERAL SCOPE OF WORK: HEAT PUMP INSTALLATION

THIS CONTRACTOR SHALL PROVIDE ALL LABOUR, MATERIAL, TOOLS AND EQUIPMENT REQUIRED FOR THE INSTALLATION OF A MINI-SPLIT HEAT PUMP SYSTEM. WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

- HOUSEKEEPING PADS FOR OUTDOOR HEAT PUMPS,
- SUPPLY AND INSTALLATION OF HEAT PUMPS AND STANDS,
- SUPPLY AND INSTALLATION OF WALL MOUNTED EVAPORATOR,
- ALL CUTTING, PATCHING, CRACK FILLING, AND PAINTING,
- SUPPLY AND INSTALLATION OF REFRIGERATION PIPING, REFRIGERANT, AND PIPE INSULATION. ALL EXTERIOR REFRIGERATION PIPING SHALL BE THERMALLY INSULATED AND COVERED WITH PVC JACKETING. ALL INTERIOR REFRIGERATION PIPING SHALL BE INSULATED AND CONCEALED WITH PIPING CONTAINMENT MOLDINGS,
- SUPPLY AND INSTALLATION OF ALL WIRING, WIRING DEVICES, AND WP DISCONNECT SWITCHES,
- START-UP AND COMMISSIONING OF ALL UNITS, INCLUDING CONTROL DEVICES AND CONTROL WIRING.

KEY NOTES:

- EXHAUST AIR DUCTWORK FROM JANITORS ROOM, WASHROOM 204, WASHROOM 205, AND WASHROOM 206 SHALL BE THERMALLY INSULATED. REFER TO SPECIFICATION FOR DUCTWORK INSULATION REQUIREMENTS.
- WALL MOUNTED CONTROLLER FOR AC-1, AC-2 AND AC-3 SHALL BE MOUNTED AT 60" A.F.F.
- CONDENSERS SHALL BE INSTALLED ON THE EXTERIOR OF BUILDING C/W SNOW STAND. REFER TO CONDENSING UNIT SCHEDULE.
- EF-1, EF-2, AND EF-3 SHALL BE INTERLOCKED WITH MOTION SENSOR. FAN SHALL RUN FOR ADDITIONAL 15 MIN AFTER SENSOR IS DEACTIVATED.
- ALL CONTROL WIRING SHALL BE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.
- WHEREVER DUCTWORK PENETRATES A FIRE SEPARATION, CONTRACTOR SHALL INSTALL FIRE DAMPERS IN ACCORDANCE WITH NFPA 80, ARTICLE 3.1.8.7 OF THE 2010 NBC, AND ALL OTHER APPLICABLE CODES AND STANDARDS.
- FLOOR MOUNTED FORCE FLOW HEATERS, ELECTRIC RADIANT PANELS, AND ALL ASSOCIATED CONTROLS SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR

LOUVER SCHEDULE				
TAG	MANUFACTURER AND MODEL NUMBER	MODULE SIZE (WxH) mm.	AIR FLOW (LPS)	ACCESSORIES
LV1	COOK TRE	609.6x304.8	207.5	C/W BIRDSCREEN, PAINTED TO MATCH EXTERIOR, ROOF CURB, INSECT SCREEN

GRILLE AND DIFFUSER SCHEDULE					
TAG	MANUFACTURER AND MODEL NUMBER	MODULE SIZE (WxH) mm.	AIR FLOW	FINISH	ACCESSORIES
S1	PRICE LFG-F	203.2x406.4	AS SHOWN	WHITE	FLOOR MOUNTED, C/W PLENUM FOR DUCT CONNECTION
S2	FANTECH MGS4	101.6Ø	AS SHOWN	WHITE	FRAME SUITABLE FOR DRYWALL CEILING/WALL INSTALLED WITH MANUFACTURED AIR PRODUCTS MODEL CRD3 CEILING RADIATION DAMPER
R1	FANTECH MGE4	101.6Ø	AS SHOWN	WHITE	FRAME SUITABLE FOR DRYWALL CEILING/WALL INSTALLED WITH MANUFACTURED AIR PRODUCTS MODEL CRD3 CEILING RADIATION DAMPER
R2	PRICE LFG-F	203.2x406.4	AS SHOWN	WHITE	FLOOR MOUNTED, C/W PLENUM FOR DUCT CONNECTION
DG1	NAILOR 61 DGD-FR	457.2x203.2	AS SHOWN	TO MATCH DOOR	DOOR MOUNTED

HEAT RECOVERY UNIT SCHEDULE									
LOCATION	TAG	MANUFACTURER AND MODEL NUMBER	AIR FLOW (LPS)	STATIC PRESSURE	ELECTRICAL	MCA	HP	WEIGHT	ACCESSORIES
MECHANICAL ROOM 104	HRV-1	RenewAire EV450IN	141	186.8 Pa	120/1Ø	9.0A	0.6	200 lbs	VIBRATION ISOLATION HANGERS, MERV 8 (355mmx308mmx50.8mm) FILTERS, ECM MOTOR, WALL MOUNTED CONTROLLER, CONDENSATE DRAINED TO FUNNEL FLOOR DRAIN, AHRI 1060 CERTIFIED CORE, NON-FUSED DISCONNECT, 24VAC TRANSFORMER

EXHAUST FAN SCHEDULE									
AREA SERVED	TAG	MANUFACTURER AND MODEL NUMBER	AIR FLOW (LPS)	STATIC PRESSURE	RPM	ELECTRICAL	POWER (WATTS)	ACCESSORIES	
MEN'S W/R	EF-1	COOK GEMINI GCI-186	94.5	31 Pa	1100	120/1Ø/60	94	STANDARD CEILING INSTALLATION, VIBRATION ISOLATION HANGERS, BACKDRAFT DAMPER, ALUMINUM GRILLE, ENERGIZED WITH MOTION SENSOR	
WOMEN'S W/R	EF-2	COOK GEMINI GCI-186	94.5	31 Pa	1100	120/1Ø/60	94	STANDARD CEILING INSTALLATION, VIBRATION ISOLATION HANGERS, BACKDRAFT DAMPER, ALUMINUM GRILLE, ENERGIZED WITH MOTION SENSOR	
PUBLIC W/R	EF-3	COOK GEMINI GC-128	35	31 Pa	750	120/1Ø/60	30	STANDARD CEILING INSTALLATION, VIBRATION ISOLATION HANGERS, BACKDRAFT DAMPER, ALUMINUM GRILLE, OPERATION ENERGIZED WITH BATHROOM LIGHTING	
JANITOR'S	EF-4	COOK GEMINI GC-128	35	31 Pa	750	120/1Ø/60	30	STANDARD CEILING INSTALLATION, VIBRATION ISOLATION HANGERS, BACKDRAFT DAMPER, ALUMINUM GRILLE, OPERATION ENERGIZED WITH LIGHTING	
ELECT. ROOM	EF-5	COOK GEMINI GC-128	35	31 Pa	750	120/1Ø/60	30	STANDARD CEILING INSTALLATION, VIBRATION ISOLATION HANGERS, BACKDRAFT DAMPER, ALUMINUM GRILLE, REVERSE ACTING THERMOSTAT	

LEGEND	
	RECTANGULAR DUCTWORK
	ROUND SPIRAL DUCTWORK
	FLEXIBLE DUCTWORK
	ROUND CEILING DIFFUSER
	EXHAUST FAN
	BALANCING DAMPER
	CONTROL WIRING
	THERMOSTAT/TEMPERATURE SENSOR
	EQUIPMENT TAG AIRFLOW (L/S)
	FIRE DAMPER
	REVERSE-ACTING T'STAT

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3	99% DESIGN REVIEW	04/10 2017
2	99% DESIGN REVIEW	01/18 2017
1	DESIGN DEVELOPMENT – 50%	11/01 2016
0	ISSUED FOR REVIEW	09/09 2016
revisions		date
project		projet

**WEST GATE ENTRANCE
VISITOR RECEPTION CENTER
WOLFE LAKE
FUNDY, NB
ALBERT COUNTY**

drawing dessin

VENTILATION PLANS

designed	RSG	conçu
date	JAN. 11/17	
drawn	KDL	dessiné
date	JAN. 11/17	
approved	DGF	approuvé
date	JAN. 11/17	
Tender		Soumission
PWOSC Project Manager	Administrateur de projets TPSCG	
project number		no. du projet
R.075853.001		
drawing no.		no. du dessin
M1.1		