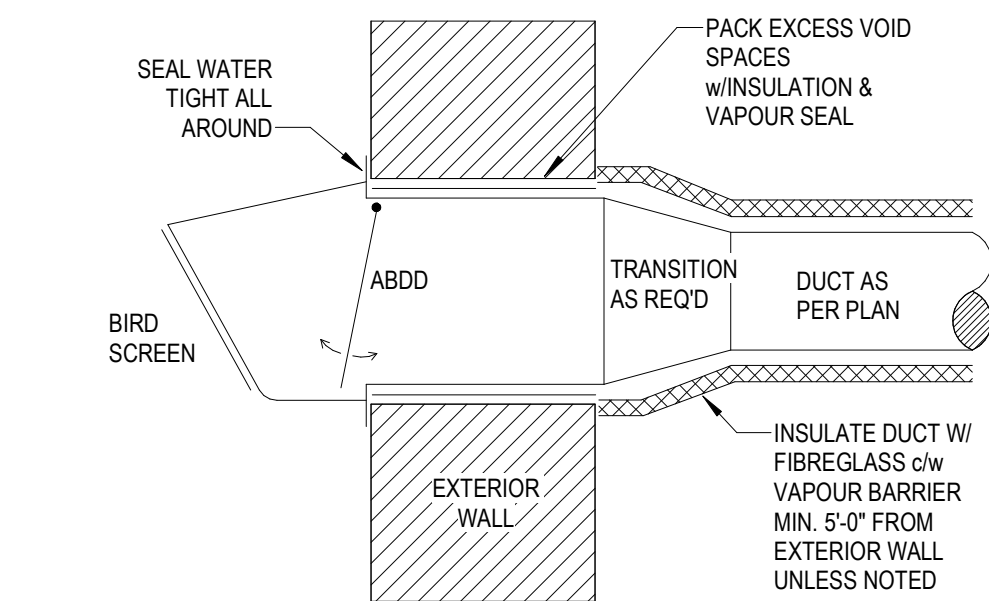
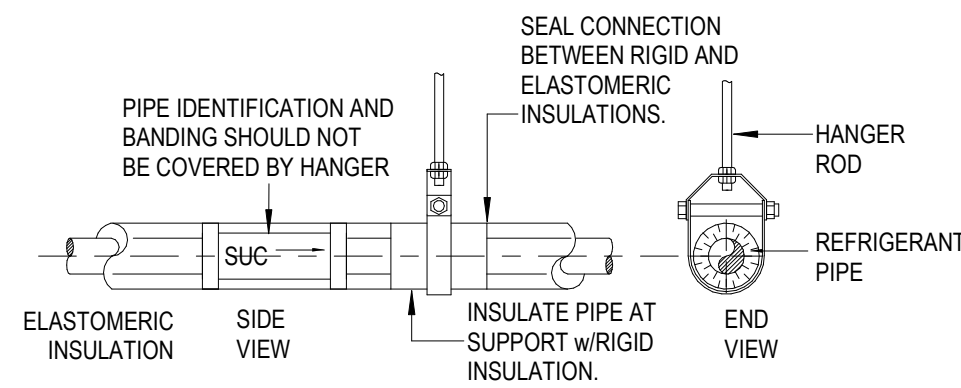


Mechanical & Electrical Consultants:

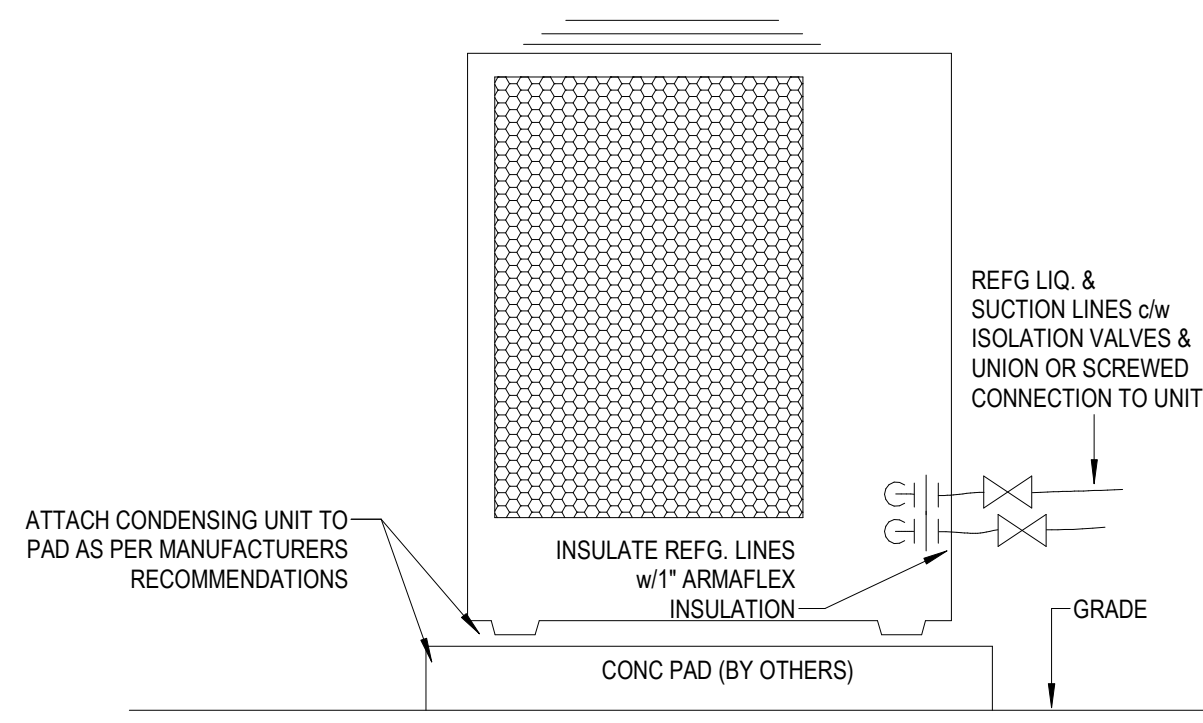
o n s a F.C. O'Neill, Scriven
& Assoc's Limited
Consulting Engineers
7071 Bayers Road, Suite 2001, Halifax, NS



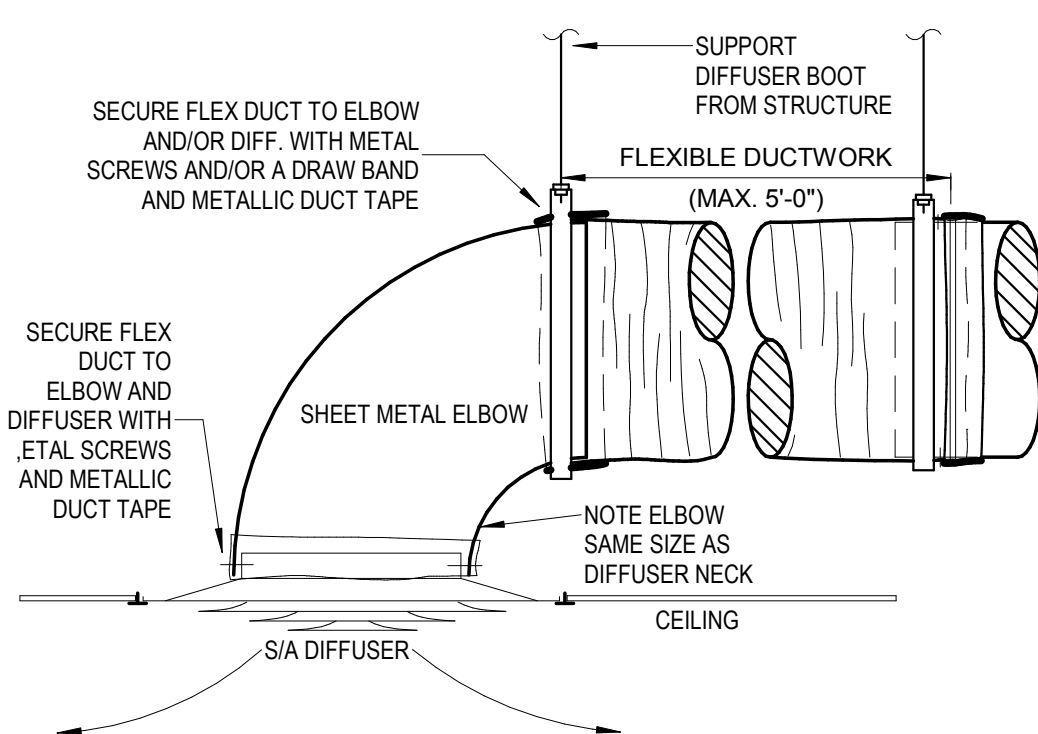
1 EXHAUST AIR WALL CAP
M-6 N.T.S.



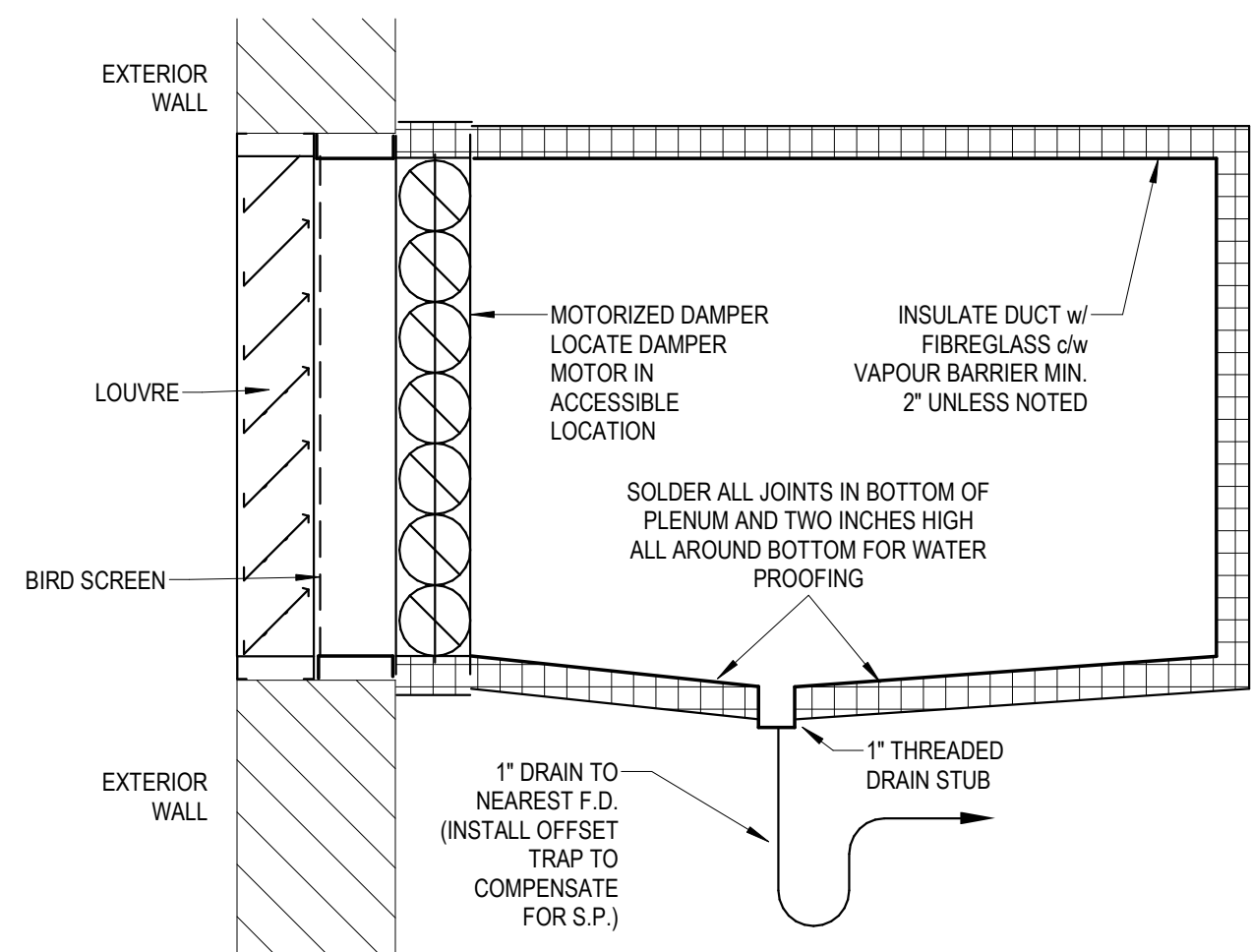
2 REFRIGERANT PIPE SUPPORT
M-6 N.T.S.



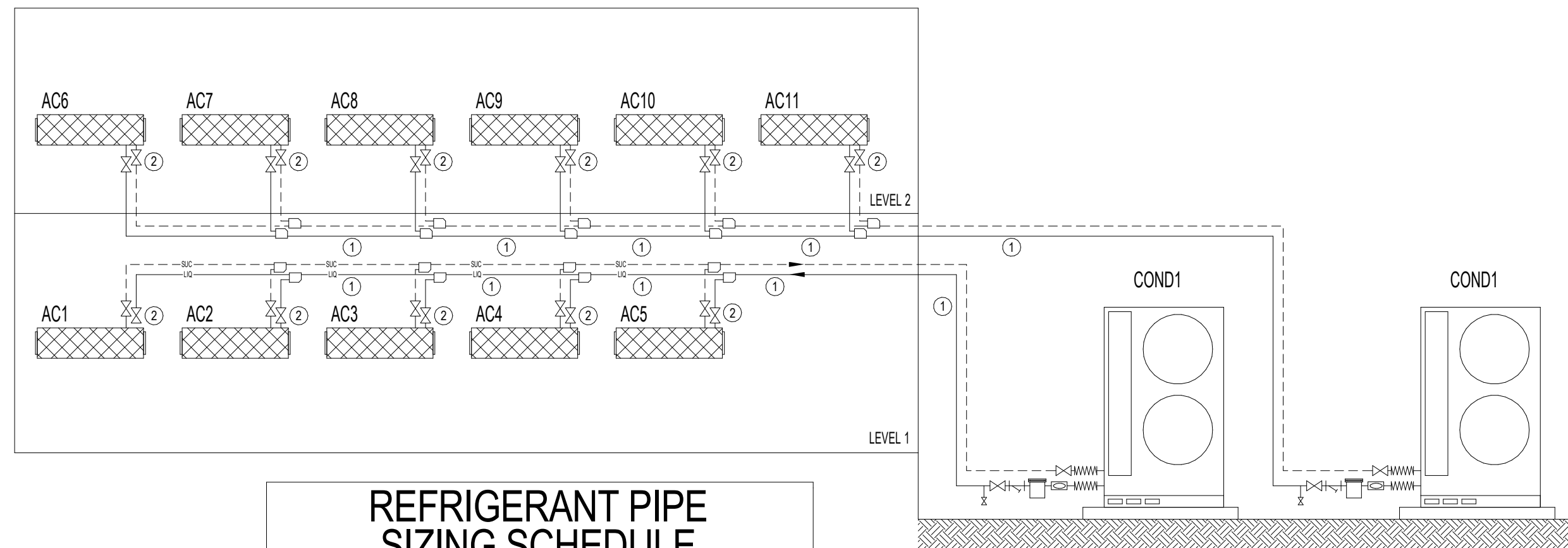
3 SMALL OUTDOOR CONDENSER
M-6 N.T.S.



5 DIFFUSER FLEX CONNECTION
M-6 N.T.S.



6 LOUVRE PLENUM DRAIN
M-6 N.T.S.



REFRIGERANT PIPE SIZING SCHEDULE

1	16mm SUCTION, 10mm LIQUID
2	13mm SUCTION & 6mm LIQUID

4 REFRIGERANT SYSTEM PIPING SCHEMATIC

M-6 SCALE: N.T.S.

OUTDOOR CONDENSING UNIT SCHEDULE

DESIG.	SERVING	SIZE (mm)			WT.(kg)	NOMINAL COOLING CAPACITY	NOMINAL HEATING CAPACITY	ELECTRICAL		PIPE SIZE		COMMENTS	
		H	W	D				KW	MCA/MAX BRKR	POWER	LIQUID		SUCTION
COND1	LEVEL 1	1338	1050	355	122	48,000	54,000	5.1	31/44	208/1	3/8"	5/8"	LOW AMBIENT KIT (-40°F), SEA COAST MODEL
COND1	LEVEL 1	1338	1050	355	122	48,000	54,000	5.1	31/44	208/1	3/8"	5/8"	LOW AMBIENT KIT (-40°F), SEA COAST MODEL
ABBREVIATIONS : NOTES : COND TO BE old W/ SNOW BAFFLE													

ABBREVIATIONS :

NOTES : COND TO BE c/w WIND & SNOW BAFFLE

INDOOR HEAT PUMP SCHEDULE

UNIT	SERVING	AIRFLOW (CFM)	S/A	COOLING TOTAL CAPACITY(MBH)	HEATING (MBH)	REFRIG. TYPE	ELECTRICAL		
							MCA	KW	VOLTS/PH
AC1	103 PPE STORAGE	170-210		6	6.7	R-410A	-	0.03	208/1
AC2	103 PPE STORAGE	170-210		6	6.7	R-410A	-	0.03	208/1
AC3	106 TRAINING ROOM	320-415		12	13.5	R-410A	-	0.03	208/1
AC4	106 TRAINING ROOM	320-415		12	13.5	R-410A	-	0.03	208/1
AC5	107 OFFICE	320-415		12	13.5	R-410A	-	0.03	208/1
AC6	205 BEDROOM	320-415		8	9	R-410A	-	0.03	208/1
AC7	207 BEDROOM	320-415		8	9	R-410A	-	0.03	208/1
AC8	208 BEDROOM	170-210		6	6.7	R-410A	-	0.03	208/1
AC9	204 BEDROOM	170-210		6	6.7	R-410A	-	0.03	208/1
AC10	202 TRAINING ROOM / LIVING SPACE	170-210		6	6.7	R-410A	-	0.03	208/1
AC11	202 TRAINING ROOM / LIVING SPACE	170-210		6	6.7	R-410A	-	0.03	208/1

ABBREVIATIONS :

EDB - ENTERING DRY BULB TEMP. IN °F
EWB - ENTERING WET BULB TEMP. IN °F
LDB - LEAVING DRY BULB TEMP. IN °F

NOTES:

1- ELECTRICAL DISCONNECTS FOR ALL UNITS BY ELECTRICAL CONTRACTOR.
2- INSULATE ALL INTERNAL PIPING INTEGRAL TO THE HEAT PUMP UNITS.
3- INSULATE CONDENSATE DRAINAGE PIPING FOR ALL UNITS.
4-

EQUIP. & FIXTURE CONNECTIONS

ITEM	DESCRIPTION	WATER		WASTE		VENT
		COLD	HOT	INDIRECT	DIRECT	
L1	DROP IN LAVATORY	13	13	-	32	32
L2	WALL HUNG LAVATORY (BARRIER FREE)	13	13	-	32	32
L3	WALL HUNG LAVATORY	13	13	-	32	32
WC1	WATER CLOSET (BARRIER FREE)	19	-	-	76	-
WC2	WATER CLOSET	19	-	-	76	-
SH1	SHOWER	13	13	-	38	-
SH2	SHOWER (BARRIER FREE)	13	13	-	38	-
BT	BATH TUB	13	13	-	38	-
S1	DROP IN SINK (BARRIER FREE)	13	13	-	38	-
JS1	JANITOR SINK	13	13	-	76	38

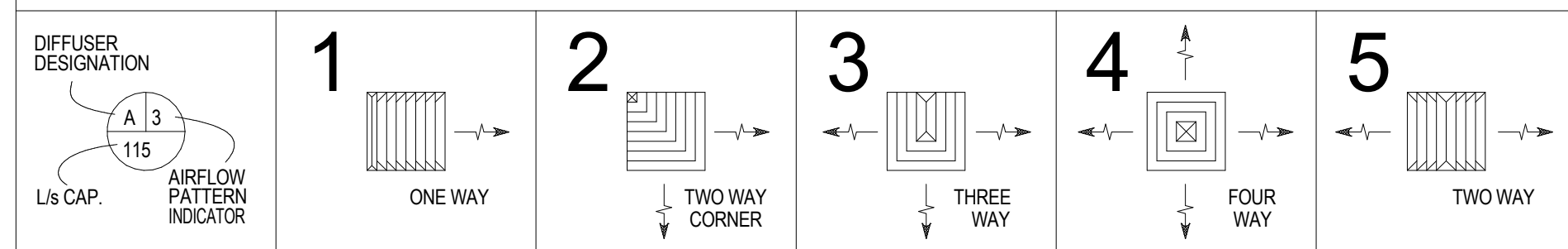
ABBREVIATIONS :
CW - DOMESTIC COLD WATER
HW - DOMESTIC HOT WATER
SS - STAINLESS STEEL
H&C - HOT & COLD WATER
SAN - SANITARY WASTE
WC - WATERCLOSET
UR - URINAL
HB - HOSE BIB
WH - WALL HUNG SINK
LAV - LAVATORY SINK
HS - HAND SINK

DIFFUSER / GRILLE SCHEDULE

DESIGNATION	DESCRIPTION	NECK	FACE	AIR CAP. L/s	COMMENTS
A	ROUND PLAQUE DIFFUSER	152 DIA.	338 DIA.	50	SURFACE MOUNT, CA
B	LOUVRED FACE SUPPLY GRILLE	250x150	300x200	250	SURFACE MOUNT, CA
C	FIRE RATED SQ. PLAQUE DIFFUSER	152 DIA.	300 x 300	50	SURFACE MOUNT, CA c/w INTEGRAL FIRE DAMPR AND FIRE BLANKET, AND SURFACE MOUNT FRAME
R1	PERFORATED RETURN GRILLE	250x250	304x304	250	SURFACE MOUNT, CA
R2	FIRE RATED PERF. RETURN GRILLE	250x250	304x304	250	SURFACE MOUNT, CA c/w INTEGRAL FIRE DAMPR AND FIRE BLANKET, AND SURFACE MOUNT FRAME, BORESET BOTH SIDES
	ALUMINUM DOOR GRILLE	--	600x600	215	CA

S/A DESIGNATION AIR CAPACITY: A/4 100, A/10 100
R/A DESIGNATION AIR CAPACITY: R1 100
ABBREVIATIONS : OSB - OPPOSED BLADE DAMPER CA - COLOUR BY ARCHITECT PERFOR - PERFORATED FACE EGG - EGGRATE GRILLE

S/A AIRFLOW PATTERNS



EXHAUST FAN SCHEDULE

UNIT NO.	LOCATION	SERVING	TYPE	DISCRPTION	WHEEL TYPE	DIA.	AIR CAP. CFM	S.P. IN.	RPM	ELECTRICAL		SEE. NOTE#	COMMENTS
										WATTS	VOLTS/PH		
EF1	PPE STORAGE	PPE STORAGE	CEL CAB	CEILING MOUNTED CABINET FAN	-	-	250	0.5	-	95	120	1	c/w DISCONNECT, HANGING ISOLATORS
EF2	ELECTRICAL ROOM	ELECTRICAL ROOM	CEL CAB	CEILING MOUNTED CABINET FAN	-	-	450	0.75	1009	350	120	1	c/w DISCONNECT, HANGING ISOLATORS

ABBREVIATIONS :
ABSD - AUTO BACKDRAFT DAMPER
BD - BACKDRAFT DAMPER
BI - BACKWARD INCLINED
BS - BIRD SCREEN
CAB - CABINET FAN
CEL - CEILING MOUNTED FAN
CENT - CENTRIFUGAL FAN
CURB - ROOF CURB
DS - DISCONNECT SWITCH
DSIF - DESTRATIFICATION FAN
FS - FORWARD CURVE WHEEL
GF - GRADE FAN
IS - INSPECT SCREEN
MD - MOTORIZED DAMPER
PROP - PROPELLER BLADE FAN
RF - ROOF MOUNTED FAN
VSC - VARIABLE SPEED CONTROL

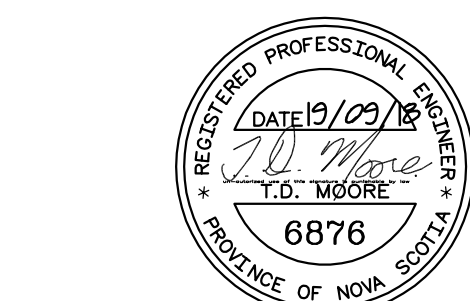
NOTES :
1- c/w WHITE ALUMINUM GRILLE, RECTANGULAR WALL CAP
2-
3-
4-

PLUMBING EQUIPMENT

TAG	DESCRIPTION
TP1	MULTI-OUTLET ELECTRONIC TRAP SEAL PRIMER VALVE ASSEMBLY c/w INTEGRAL WATER HAMMER ARRESTOR, VACUUM BREAKER, TIMER MODULE, AND RECESSED CABINET WITH ACCESS COVER. ELECTRICAL: 120V/160 PROVIDE WALL/CEILING ACCESS DOOR AS REQUIRED TO ACCESS UNIT.
TP2	SINGLE OUTLET ELECTRONIC TRAP SEAL PRIMER VALVE ASSEMBLY c/w INTEGRAL WATER HAMMER ARRESTOR, VACUUM BREAKER, TIMER MODULE, AND RECESSED CABINET WITH ACCESS COVER. ELECTRICAL: 120V/160 PROVIDE WALL/CEILING ACCESS DOOR AS REQUIRED TO ACCESS UNIT.
DHW1 DHW2	ELECTRIC DOMESTIC HOT WATER HEATER 287L (80 USGAL) CAPACITY, DUAL 5.5 kW ELEMENTS, 307LPH (81 GPH) FIRST HOUR RATING 208V/160 600mm x 154mm HIGH, 77kg (170 lbs)
MV1	THERMOSTATIC MIXING VALVE LEAD FREE HIGH/LOW MIXING VALVE 1-50 USGPM, SET POINT 50°C (122°F) c/w INTEGRAL CHECK VALVES, SHUT-OFF VALVE ON OUTLET, TEMPERATURE GAUGE, BRONZE FINISH
F/E	FIRE EXTINGUISHER 10 LB TYPE ABC FIRE EXTINGUISHER c/w WALL BRACKET

VENTILATION EQUIPMENT

TAG	DESCRIPTION
LV1 LV2	SUPPLY AND EXHAUST LOUVRE STORM RESISTANT 152mm DEEP, 450mm WIDE 450mm HIGH
RANGE HOOD	UNDER CABINET RANGE HOOD, 750mm WIDE x 500mm DEEP x 150mm HIGH, 175 DDA, DUCT CONNECTION, 80 L/s - 118 L/S COLOUR BY ARCHITECT, 120V, 1.3A
ERV1	ENERGY RECOVERY VENTILATOR S/A 610 CFM @ 0.8" ESP S/A 375 CFM @ 0.8" ESP UNIT SIZE: 1028mm L, 603mm W, 128mm H. UNIT WEIGHT = 147 kg FANS: QTY 2, 0.5 H/P EACH, DIRECT DRIVE EC MOTORS. FILTERS: MERV 4 - 20" x 20" x 2" c/w DISCONNECT, INTEGRATED CONTROL PANEL, DOUBLE WALL CONSTRUCTION, LOW LEAKAGE ISOLATION DAMPERS, DRY BULB TEMPERATURE CONTROLS, ELECTRIC DUCT HEATER (7 kW)



1 ISSUE FOR TENDER 09/19/2018

rev. date

project project

**BIO SEARCH & RESCUE
MARINE OPERATIONS
BUILDING**

Dartmouth, Nova Scotia

drawing dessin

**VENTILATION &
HEATING DETAILS AND
MECHANICAL
SCHEDULES**

designed conçu

date 06/07/18

drawn NGB

date 06/07/18

approved

date 06/07/18

Tender

project number

no. du projet

R.096002.001

drawing no.

no. du dessin

M-6