

PELLET BOILER SYSTEM P&ID
SCALE: NTS

1
H4/H4

VRF FANCOIL UNIT SCHEDULE									
UNIT NO.	APPLICATION	LOCATION	CONFIGURATION	AIRFLOW (L/S)	E.S.P. (Pa)	FLUID	HEATING DATA		COMMENTS
							EAT (deg-C)	HEAT CAPACITY (kW)	
FC-1	OFFICE HEAT & COOL	BOILER ROOM	VERTICAL DUCTED	650	125	R410A	18.0	15.8	MULTI-SPEED ECM MOTOR, VERTICAL DUCTED, DRAIN PAN, INTEGRATED CONTROLS, FILTER

DUCTED HEATING COIL SCHEDULE						
UNIT NO.	APPLICATION	LOCATION	AIRSIDE DATA		HEATING DATA	
			AIRFLOW (L/S)	P.D. (Pa)	EAT (deg-C)	HEAT CAPACITY (kW)
HC-1	OFFICE HEATING	BOILER ROOM	650	30	18	14.0

HYDRONIC BOILER SCHEDULE -- TO SPECIFICATION SECTION 23-52-00												
ID	EQUIPMENT TYPE	OUTPUT (kW)	FLUID			FUEL DATA		ELECTRIC		MIN. EFFICIENCY (%)	WEIGHT (KG)	COMMENTS
			FLOW LPS	EWT DEG C	LWT DEG C	TYPE	ENERGY CONTENT (KJ/KG)	AMPS	V/Ph/Hz			
B-1	SOLID FUEL BIOMASS BOILER	32	1.0	74	82	WOOD PELLETS	15,200	16	208/1/60	90	600	C/W ONBOARD VACUUM DRIVE PELLET TRANSFER SYSTEM, PELLET HOPPER, AUGER -DRIVE ASH REMOVER, LOW WATER CUTOFF, HIGH TEMPERATURE CUTOFF, RELIEF VALVE, CONTROL SWITCHES, HMI FOR TEMPERATURE CONTROL, LINE VOLTAGE START CONTACTS FOR EXTERNAL AUGER.
B-2	INLINE ELECTRIC HEATING BOILER	15	1.0	74	78	ELECTRIC	N/AP	75	208/1/60	90	50	ONBOARD CIRCUIT BREAKERS, THERMOSTAT CONTROL, FLOW PROVING SWITCH INPUT, LOW WATER CUTOFF, HIGH TEMPERATURE CUTOFF, RELIEF VALVE, CONTROL SWITCHES.

EXPANSION TANK SCHEDULE										
TANK NO.	APPLICATION	LOCATION	TANK TYPE	ACCEPTANCE VOLUME (L)	TOTAL VOLUME (L)	MAX. PRESS (kPa)	MAX. TEMP (deg-C)	TANK HEIGHT (mm)	TANK DIA (mm)	SHIPPING WEIGHT (kg)
ET-1	HYDRONIC EXPANSION	BOILER ROOM	EPDM BLADDER	12	33	875	115	560	305	19

MINI-SPLIT HEAT PUMP SCHEDULE										
UNIT NO.	APPLICATION	LOCATION	CONFIGURATION	REFRIG.	COOLING CAPACITY (kW)	HEATING CAPACITY (kW)	COOLING QAT OP. RANGE (deg-C)	HEATING QAT OP. RANGE (deg-C)	EER/ SEER	UNIT MOCP (AMPS)
CU-1	OFFICE COOLING	OUTDOORS	AIR SOURCE (REVERSING)	R410A	14.0	15.8	-5 TO 46	-25 TO 15	11.3/16.5	44

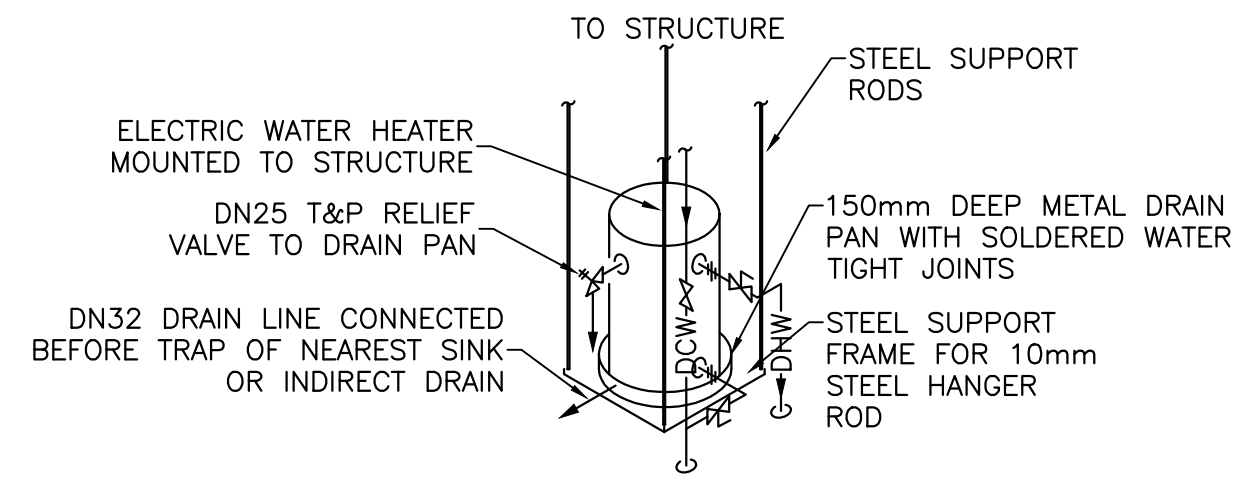
DOMESTIC HOT WATER HEATER SCHEDULE								
UNIT NO.	APPLICATION	LOCATION	CONFIGURATION	RECOVERY RATE 50C TEMP RISE (LPH)	DHW VOLUME (L)	BOILER WATER VOLUME (L)	POWER (V/ph/Hz)	HEATING CAPACITY (kW)
DWH-1	DHW SUPPLY	GARAGE	HYDRONIC INDIRECT	2000	450	150	N/A	N/A
DWH-2	DHW BACKUP	GARAGE	ELECTRIC	25	23	N/A	120/1/60	2.0

PUMP SCHEDULE						
PUMP NO.	APPLICATION	PUMP LOCATION	PUMP TYPE	FLOW RATE (L/S)	HEAD (kPa)	MOTOR SIZE kW
P-1	HEATING CIRCULATOR	GARAGE	WET ROTOR CIRC.	1.0	70	0.3
P-2	DHW CIRCULATOR	GARAGE	WET ROTOR CIRC.	0.7	15	0.1

ENERGY RECOVERY VENTILATOR (ERV) SCHEDULE						
UNIT NO.	APPLICATION	UNIT LOCATION	AIR FLOW (L/S)	S.P. (Pa)	% EFFECTIVENESS (SUMMER/WINTER)	ELECT. DATA
ERV-1	VENTILATION	BOILER ROOM	109	125	68/54	0.3

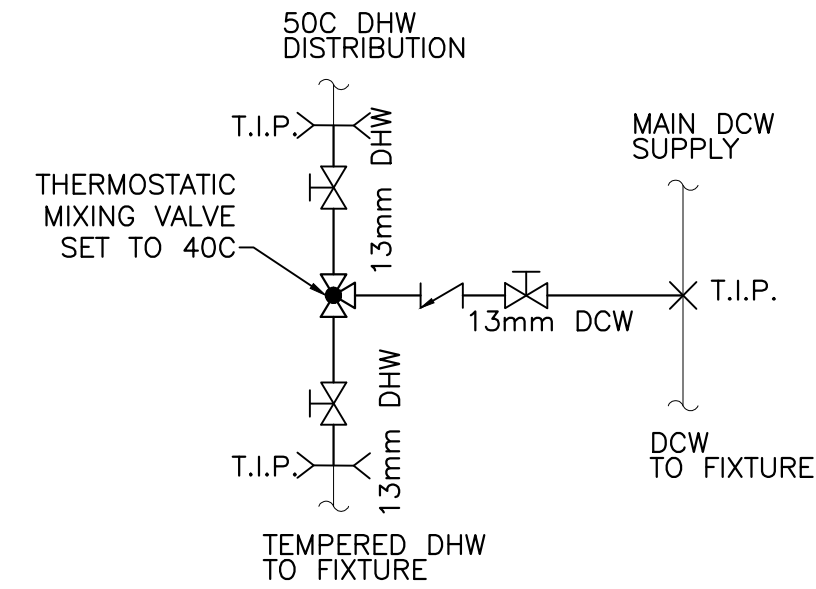
P&ID NOTES

1. BOILER TO UTILIZE ONBOARD AQUASTAT FOR FIRING CONTROL. UPON INSTALLATION AND INITIAL SETUP THE UNIT SHALL BE CONFIGURED TO OPERATE AT MINIMUM COMBUSTION LEVEL AT A WATER TEMPERATURE CUT IN OF 71C, AND A HIGH FIRE CUT IN OF 60C, THE BURNER CUT OUT SHALL BE 85C.
2. THE SYSTEM CIRCULATION PUMP SHALL RECEIVE A CALL TO ENERGIZE THROUGH SEVERAL START CONDITIONS:
 - 2.1. CALL FROM THE OFFICE THERMOSTAT HEATING CONTACTS (SET PER USER PROGRAMME)
 - 2.2. CALL FROM THE DHW HEATER AQUASTAT (NOMINALLY CUT IN AT 60C, CUT OUT AT 80C).
3. INSTALL A SIDE STREAM POT FEEDER ON A 13mm LINE, COMPLETE WITH AN AUTOMATIC FLOW BALANCING VALVE WITH A FOUR (4) LITER PER MINUTE CARTRIDGE.
4. INSTALL AN INLINE TANKLESS ELECTRIC BOILER AS SHOWN, PER THE SPECIFICATION TABLE TO PROVIDE A BACKUP HEAT SOURCE, IN CASE OF EMERGENCY.
5. DHW RECIRC. PUMP RUNS ON TIME OF DAY SCHEDULE SET INITIALLY FOR 7AM-6PM OPERATION.



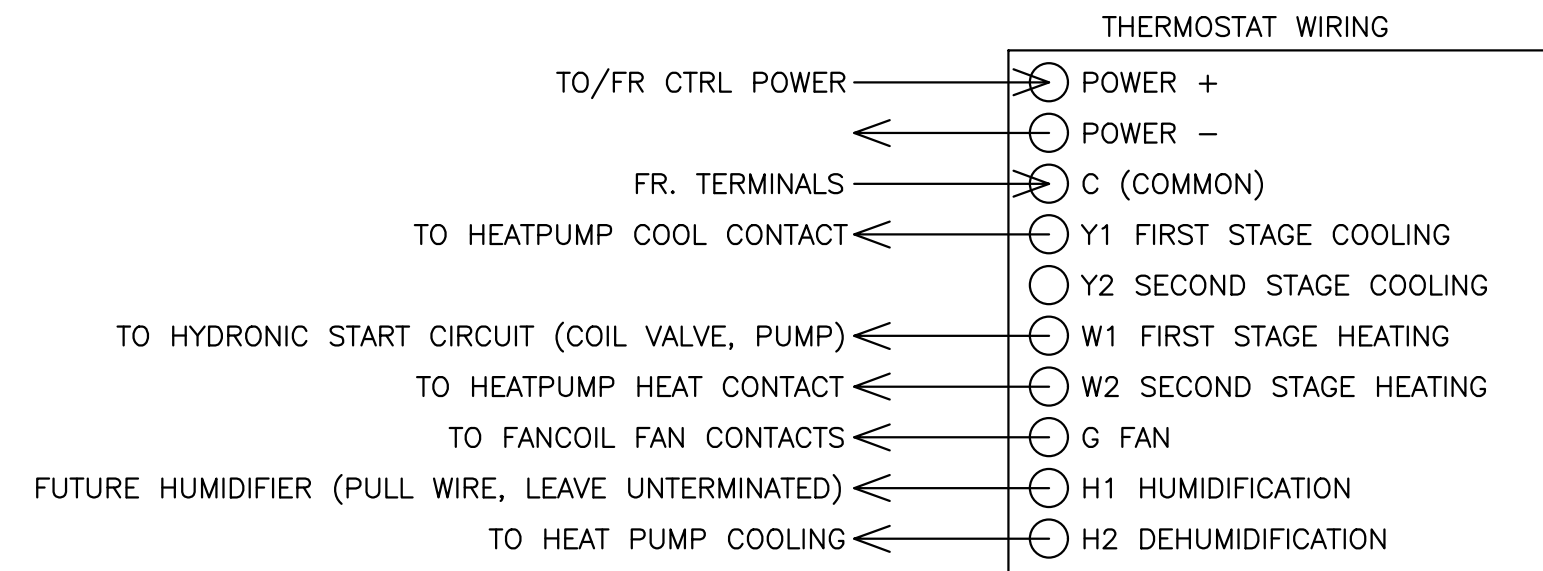
CEILING MOUNTED DHWH PIPING DETAIL
SCALE: NTS

2
H4/H4



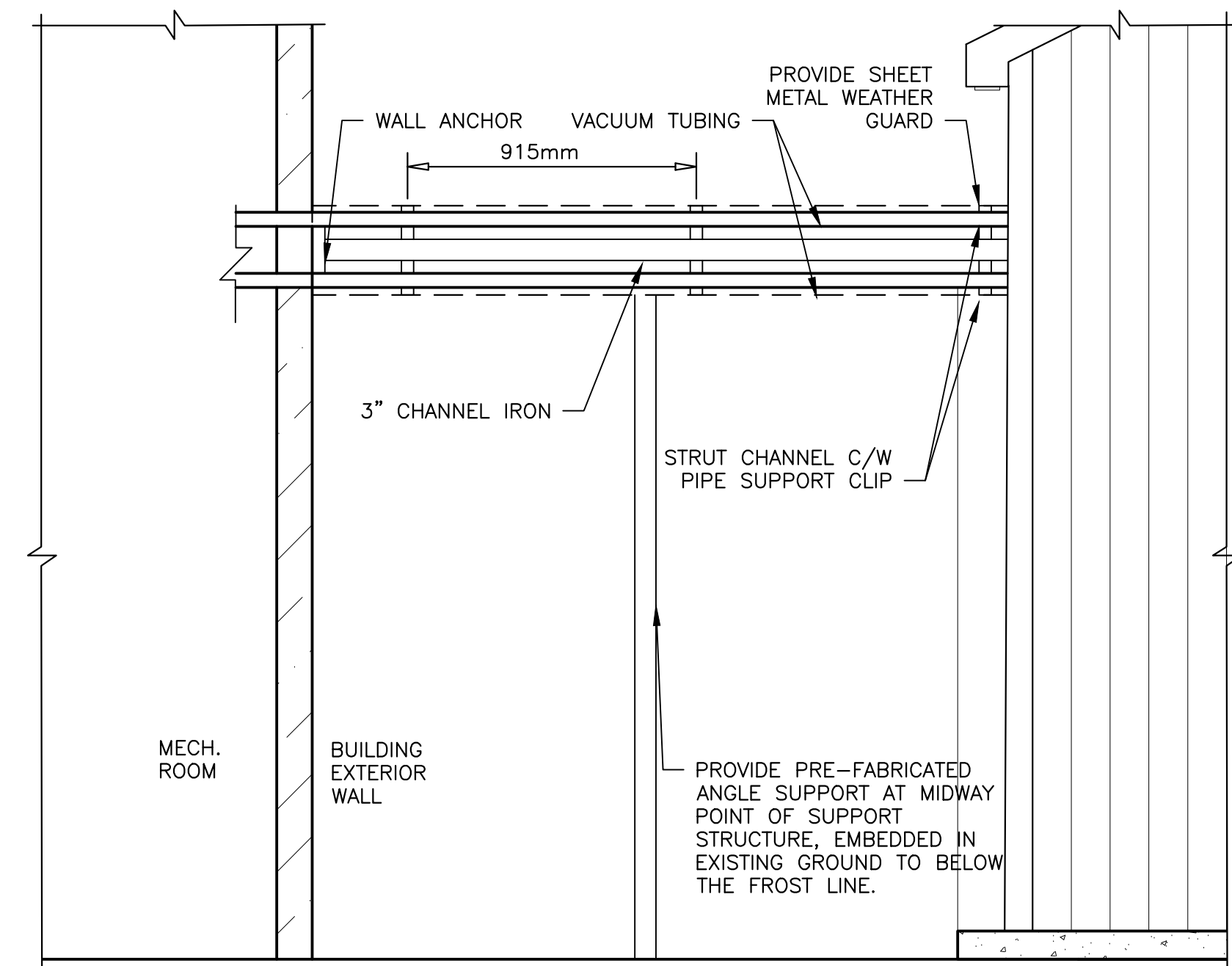
FIXTURE DHW TEMPERING VALVE DETAIL
SCALE: NTS

3
H4/H4



MULTI-STAGE THERMOSTAT TERMINAL WIRING
SCALE: NTS

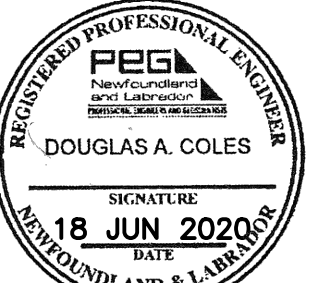
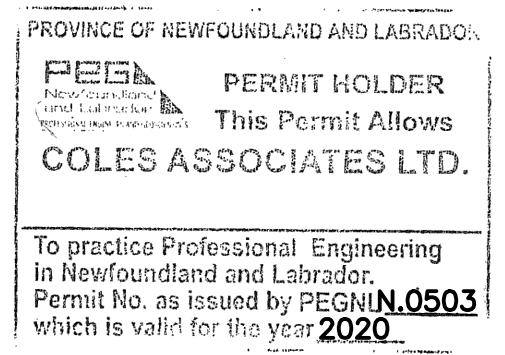
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H4/H4



PELLET TRANSFER LINE ELEVATION
SCALE : 1:20

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H4/H4

ALL MECHANICAL WORK TO BE COMPLETED DURING PHASE 2 OF THIS PROJECT, SEE SPECIFICATION SECTION 01 11 00 SUMMARY FOR CLARIFICATION



1	Issued for Tender	06/18 2020
revisions		date
project	DFO ST. LEWIS BUILDING UPGRADES	project

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**P&ID
DETAILS, AND
EQUIPMENT SCHEDULES**

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