

GROUND FLOOR PLAN
 SCALE: 1:100

DEHUMIDIFIER NOTES

- THE CONTRACTOR IS RESPONSIBLE TO PROVIDE THE TWO DEHUMIDIFIERS, DM-1 AND DM-2 COMPLETE WITH CONTROL DEVICE WHICH CAN BE CONNECTED TO THE DELTA CONTROL SYSTEM.
- BOTH UNITS SHALL BE INSTALLED ON A CURB, MINIMUM 6" HIGH COMPLETE WITH VIBRATION ABSORBER.
- CONDENSATE SHALL BE CONNECTED BY A HOSE DOWN FLOW.
- SUPPLY AIR SHALL BE DUCTED AS SHOWN IN THE DRAWING FOR THE SECOND UNIT (DH-2). FOR UNIT 1 (DH-1), THE EXISTING DUCTING MAY BE RE-USED WITH MODIFICATIONS AS REQUIRED.
- SCOPE
- PACKAGED SYSTEM FOR HUMIDITY CONTROL.
- UNITS SHALL BE ETL OR CSA CERTIFIED.
- COILS SHALL BE UL OR CSA CERTIFIED.
- BLOWER MOTORS AND COMPRESSORS SHALL BE UL OR CSA CERTIFIED. BLOWER MOTORS SHALL HAVE A SERVICE FACTOR RATING OF JS OR HIGHER AND MUST BE STAMPED OR MARKED HIGH EFFICIENCY.
- ALL REFRIGERANT PIPES SHALL BE COPPER TYPE "L".
- THE DEHUMIDIFIERS SHALL BE SINGLE PACKAGE UNITS. EACH UNIT SHALL INCLUDE COMPRESSOR, EVAPORATOR (DEHUMIDIFYING COIL), CONDENSER (AIR REHEAT COIL), AUTOMATIC DEFROST CONTROL, SUPPLY AIR FAN, FAN MOTOR, MOTOR STARTERS AND CONTROLS IN ONE COMPLETE ENCLOSURE. API CONTROLS SHALL BE FACTORY ADJUSTED AND PRE SET TO THE DESIGN CONDITIONS.
- THE DEHUMIDIFYING COIL IS TO BE DESIGNED FOR ICE BUILD UP. AT LOW RETURN TEMPERATURES, MOISTURE SHALL BE REMOVED FROM THE AIR BY FREEZING. THE UNIT SHALL BE EQUIPPED WITH AN AUTOMATIC REVERSE CYCLE DEFROST CONTROL TO REMOVE ICE BUILD-UP FROM THE DEHUMIDIFYING COIL WHEN NECESSARY. A CAPACITY REDUCTION FROST PREVENTION SYSTEM SHALL ABSOLUTELY NOT BE USED.
- CABINET
- THE UNIT SHALL BE CONSTRUCTED WITH A COMBINATION OF 16 GAUGE AND 20 GAUGE, SATIN COATED STEEL, REINFORCED FOR MAXIMUM RIGIDITY WITH A 14 GAUGE BASE.
- REMOVABLE SERVICE PANELS SHALL BE FURNISHED TO PROVIDE ACCESS TO ALL INTERNAL PARTS.
- EACH UNIT SHALL HAVE A BUILT IN ELECTRICAL CONTROL PANEL IN A SEPARATE COMPARTMENT IN ORDER NOT TO DISTURB THE AIR FLOW WITHIN THE DEHUMIDIFIER DURING ELECTRICAL SERVICING.
- THE UNIT SHALL HAVE A BUILT IN FILTER RACK.
- THE ENTIRE CABINET SHALL BE PAINTED INTERNALLY AND EXTERNALLY.
- CONDENSATION ON THE OUTER SURFACES OF THE UNIT DURING OPERATION SHALL NOT BE ACCEPTABLE. UNITS MUST BE DESIGNED TO PREVENT WATER VAPOR FROM CONDENSING ON THE OUTER SURFACES OF THE UNIT ENCLOSURE.
- EVAPORATOR (DEHUMIDIFIER COIL)
- SHALL NOT BE LESS THAN SIX ROWS DEEP FOR MAXIMUM MOISTURE REMOVAL CAPACITY WITH AIR VELOCITY NOT TO EXCEED 500 FPM, WITH 3/8 INCH OD MICROGROOVED COPPER TUBES MECHANICALLY EXPANDED TO ASSURE HIGH HEAT TRANSFER WITH MAXIMUM FLAT ALUMINUM FINS PER INCH.
- CORRUGATED OR FACETIZED FINS SHALL NOT BE ACCEPTED.
- COIL SHALL HAVE A 16-GAUGE GALVANIZED CASING AND END PLATES.
- CONS SHALL BE FACTORY TESTED TO PRESSURE NOT LESS THAN 550 PSIG IN A WATER BATH.
- CONDENSER (AIR REHEAT COIL)
- SHALL NOT BE LESS THAN SIX ROWS DEEP FOR MAXIMUM HEAT TRANSFER WITH 3/8 INCH O.D. MICROGROOVED COPPER TUBES MECHANICALLY EXPANDED TO HEAT TRANSFER WITH MAXIMUM EIGHT ALUMINUM FINS PER INCH.
- COIL SHALL HAVE A 16-GAUGE GALVANIZED CASING AND END PLATES.
- COILS SHALL BE FACTORY TESTED TO PRESSURES NOT LESS THAN 400 PSIG IN A WATER BATH.
- DRAIN PAN
- EACH UNIT SHALL BE EQUIPPED WITH A DRAIN PAN UNDER THE ENTIRE EVAPORATOR COIL AND PREVENT CONDENSATE CARRYOVER.
- THE DRAIN PAN SHALL BE MADE OF 20 GAUGE TYPE 304 STAINLESS STEEL AND SHALL BE HEATED DURING OPERATION TO PREVENT ICE FORMATION.
- THE DRAIN PAN SHALL HAVE AN INTERNALLY MOUNTED TRAP AND CONDENSATE DRAIN OF RUBBER CONSTRUCTION.
- BLOWER
- SHALL BE DOUBLE WIDTH, DOUBLE INLET, MULTI BLADE FORWARD CURVED CENTRIFUGAL TYPE "A" WHEEL, DYNAMICALLY AND STATICALLY BALANCED AND TESTED, MOUNTED ON A SOLID STEEL SHAFT COATED WITH SILICON.
- THE BLOWER SHALL HAVE A GALVANIZED STEEL WHEEL AND GALVANIZED STEEL CASING PAINTED WITH A BAKED ENAMEL FINISH.
- BLOWER BEARINGS SHALL BE GREASE LUBRICATED FOR 200,000 HOURS AVERAGE LIFE.

- SHALL BE OPEN DRIP PROOF, CLASS B INSULATION, INDUCTION TYPE, 40C RISE, PRE LUBRICATED BALL BEARINGS MOUNTED ON AN ADJUSTABLE BLADE.
- MOTORS SHALL BE UL OR CSA APPROVED.
- BLOWER BELT DRIVE ASSEMBLY
- SHALL BE SINGLE V BELT WITH A SAFETY FACTOR NOT LESS THAN 2, DYNAMICALLY BALANCED CAST IRON FIXED PITCH 'AN SHEAVE AND DYNAMICALLY BALANCED CAST IRON VARIABLE PITCH MOTOR SHEAVE.
- COMPRESSOR
- SHALL BE HERMETIC COMPRESSOR(S), SUCTION GAS COOLED, SUITABLE FOR REFRIGERANT R-407C C/W INTERNAL SOLID STATE SENSOR THERMAL PROTECTION, RESILIENT TYPE EXTERNAL MOUNTING AND EASILY REMOVABLE EXTERNAL CRANKCASE HEATER FOR FLUID MIGRATION PROTECTION.
- COMPRESSOR(S) TO BE UL OR CSA APPROVED.
- REFRIGERATION CIRCUIT
- SHALL HAVE AN IN LINE SOLDER TYPE LIQUID LINE FILTER DRIER AND A FOUR WAY REVERSING VALVE.
- TAMPER PROOF HERMETICALLY SEALED NON ADJUSTABLE HIGH AND LOW PRESS CONTROLS AND REFRIGERATION SERVICE VALVES SHALL BE INSTALLED.
- REFRIGERATION SERVICES SHALL BE LOCATED OUTSIDE OF THE AIR STREAM.
- SUCTION LINE SHALL BE FULLY INSULATED WITH NOT LESS THAN 1/2 INCH RUBBER FOAM INSULATION.
- CONTROL PANEL
- SHALL BE BUILT IN WITHIN A SEPARATE COMPARTMENT IN ORDER NOT TO DISTURB THE AIR FLOW DURING SERVICING.
- BLOWER MOTOR AND COMPRESSOR SHALL BE CONTROLLED BY CONTACTORS.
- ON THREE PHASE UNITS, FAN MOTOR AND COMPRESSOR SHALL BE PROTECTED WITH PUSH BUTTON OPERATED, ADJUSTABLE THERMAL TRIP AND FIXED MAGNETIC TRIP OVERLOADS, ON SINGLE PHASE UNITS, FAN MOTOR AND COMPRESSOR SHALL BE PROTECTED WITH INTERNAL THERMAL OVERLOADS.
- POWER BLOCK TERMINAL SHALL BE PROVIDED FOR PROPER WIRE SIZE.
- COLOR CODING AND WIRE NUMBERING SHALL BE PROVIDED FOR EASY TROUBLESHOOTING. ALL WIRES SHALL BE IN A DUCT.
- COMPRESSOR SHALL HAVE A TIME DELAY START TO PREVENT SHORT CYCLING.
- AN AUTOMATIC REVERSE CYCLE DEFROST CONTROL SHALL BE PROVIDED AND SHALL OPERATE WHEN REQUIRED.
- CONNECTION SHALL BE PROVIDED FOR A REMOTE ON/OFF SWITCH AND AUTOMATIC OR SEMI-AUTOMATIC FAN OPERATION.
- UNITS SHALL BE EQUIPPED WITH AN ADJUSTABLE, LOW TEMPERATURE LIMITING THERMOSTAT.
- AIR FILTERS
- SHALL BE 2 INCH DISPOSABLE TYPE SUITABLE FOR COMMERCIAL APPLICATION, TO HANDLE AVERAGE DUST RATING, INITIAL RESISTANCE AT 100% R.A.F. OF 0.08 INCH W.G. AND AVERAGE ARRESTANCE EFFICIENCY OF 80% BASED ON 500 FPM AIR VELOCITY.
- RETURN AIR SHALL BE SUPPLIED WITH A FILTER AT ENTRANCE TO UNIT.
- THE SUPPLY DUCT SHALL BE CONNECTED TO THE DEHUMIDIFIER UNIT THROUGH THE FLEXIBLE 6 INCH DUCT.

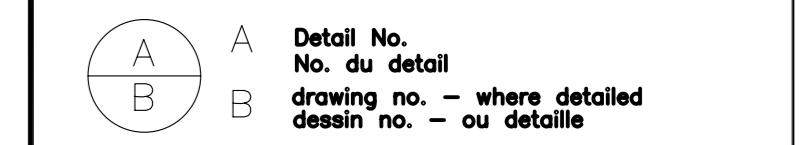
DEHUMIDIFIER UNIT SCHEDULE																	
IDEN.	SUPPLY FAN		COMPRESSOR						ELECTRICAL DATA								
	CFM	TYPE	HP	FLA	REFRIGERANT	STAGES	LRA	RLA	KW	CAPACITY (btu/h)	MCA	MOP	NOMINAL UNIT KW	EER	VOLTAGE	PHASE	HERTZ
DM-1,2	4,000	FC DWI	2.0	2.40	R-407C	1	54	7.4	5.3	70,500	12	15	6.8	10.4	600	3	60

NOTES

- CONTRACTOR TO REMOVE AND DISPOSE OF EXISTING DEHUMIDIFIER AND ALL ASSOCIATED MECHANICAL ACCESSORIES PRIOR TO INSTALLATION OF DM-1.
- BASE INFORMATION, INCLUDING EXISTING EQUIPMENT LAYOUTS HAVE BEEN OBTAINED FROM PUBLIC WORKS AND GOVERNMENT SERVICES CANADA IN FEBRUARY 2017. BASE INFORMATION IS FROM AS-BUILT DRAWINGS BASED ON INFORMATION PROVIDED BY PREVIOUS CONTRACTORS IN 2003. IT IS THE RESPONSIBILITY OF THE CONTRACTOR FOR THIS PROJECT TO CONFIRM ALL EXISTING CONDITIONS ON THIS DRAWING THAT ARE RELEVANT TO THIS PROJECT.
- THE MECHANICAL CONTRACTOR IS TO RETAIN THE SERVICES OF A CERTIFIED MASTER ELECTRICIAN TO COMPLETE THE REQUIRED ELECTRICAL INSTALLATIONS AND ELECTRICAL CONNECTIONS FOR THIS PROJECT. ELECTRICAL SCOPE TO INCLUDE THE FOLLOWING:
 - DISCONNECTION OF EXISTING DEHUMIDIFIER AT THE LOCAL DISCONNECT AND AT THE PANEL BREAKER. LOCAL DISCONNECT AND FEEDER TO REMAIN FOR REUSE (SEE 3.4)
 - RENAMING EXISTING 30A, 3P BREAKER IN EXISTING 600V PANEL AS SPARE.
 - SUPPLY AND INSTALLATION OF TWO NEW 15A, 3P BREAKER IN EXISTING 600V PANEL FOR DM-1 AND DM-2.
 - RECONNECTION OF EXISTING FEEDER TO NEW 15A, 3P BREAKER TO SUPPLY DM-1.
 - SUPPLY AND INSTALLATION OF 3C, #12 AWG RW-90 CU IN A 3/4" PVC CONDUIT FROM NEW 15A, 3P BREAKER TO DM-2.
 - SUPPLY AND INSTALLATION OF 30A, 3P, 600V WEATHERPROOF LOCKABLE LOCAL DISCONNECT AT DM-2.
 - MAKE ALL REQUIRED ELECTRICAL CONNECTIONS FOR INSTALLATION OF BOTH DM-1 AND DM-2.

Revisions	Description	Date
P0	ISSUED FOR REVIEW	17/03/21
P1	ISSUED FOR APPROVAL	17/03/31

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 Correctional Service Canada
 JOYCEVILLE PENITENTIARY

JOYCEVILLE SEWAGE TREATMENT PLANT

drawing title
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