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No.	Description	Date
1	Issued for Construction	May 20/16

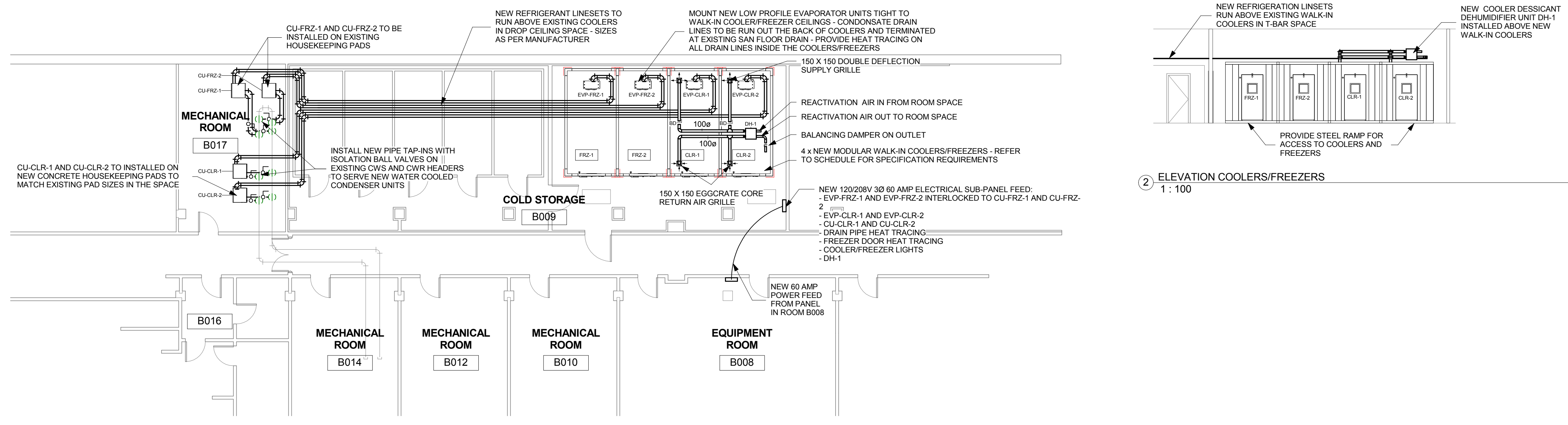
AGRICULTURE CANADA

CEF BUILDING 20

WALK-IN COOLERS AND FREEZERS

Project number	197659
Date	MAY 20, 2016
Drawn by	AM
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Scale	1 : 100

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1 NEW WORK
1 : 100

PROCESS DESSICANT DEHUMIDIFIER																	
MARK	LOCATION	SYSTEM AND/OR SERVICE	PROCESS VOLUME AIR FLOW		REACTION VOLUME AIR FLOW		MOISTURE REMOVAL RATE		PROCESS TEMPERATURE		RH	REACTIVATION HEATER		REMARKS			
			CFM	[L/S]	CFM	[L/S]	LBS/HR	[kg/HR]	°F	[°C]		BTU	[KW]		FLA	PHASE	VOLT
DH-1	B009	CLD-1 AND CLD-2	300	[140]	100 MAX	[47]	2	[1]	32	[0]	50%	20,500	[6]	33 A	3	208	DESSICANT TYPE DEHUMIDIFIER

DESSICANT DEHUMIDIFICATION UNIT SPECIFICATION

DEHUMIDIFIER SHALL BE OF THE NON-CYCLING SORPTION TYPE WITH A SINGLE DESSICANT ROTARY STRUCTURE. THE CASING WILL BE FABRICATED AS A UNITIZED BODY WITH WELDED ALUMINUM CONSTRUCTION FOR MAXIMUM STRENGTH AND DURABILITY. SUITABLE ACCESS PANEL SHALL ALLOW ACCESS FOR INSPECTION OR SERVICING WITHOUT DISCONNECTING DUCTING OR ELECTRICAL WIRING. AIRFLOW BALANCING DAMPERS TO BE FURNISHED. THE ROTARY STRUCTURE SHALL BE A MONOLITHIC FABRICATED EXTENDED SURFACE CONSISTING OF INERT SILICATES REINFORCED WITH UNIFORM DIAMETER GLASS FIBERS FOR MAXIMUM STRENGTH. THE FABRICATED STRUCTURE SHALL BE SMOOTH AND CONTINUOUS IN THE DIRECTION OF AIRFLOW WITHOUT INTERRUPTIONS OR SANDWICH LAYERS WHICH RESTRICT AIRFLOW OR CREATE A LEAKAGE PATH AT JOINING SURFACES. DESSICANT SHALL NOT CHANNEL, CAKE OR FRACTURE DUE TO REPEATED TEMPERATURE AND MOISTURE CYCLING. THE MATERIALS OF CONSTRUCTION SHALL BE NON-TOXIC AND NFPA 255-ASTM E84 COMPLIANT. FULL FACE CONTACT PRESSURE SEALS SHALL BE PROVIDED TO SEPARATE THE PROCESS AND REACTION AIR STREAMS AND ELIMINATE DETRIMENTAL LEAKAGE OF AIR OR MOISTURE WITH STATIC PRESSURE DIFFERENTIALS OF UP TO 3" WC (0.75 KPA). DEHUMIDIFIER SHALL BE FACTORY ASSEMBLED, FULLY AUTOMATIC, COMPLETE WITH HONEYCOMB DESSICANT WHEEL, REACTIVATION HEATERS, REACTIVATION ENERGY CONTROL SYSTEM, ROUGHING FILTERS, INDUSTRIAL DRIVE MOTOR, FANS, NON-ARACHETING DESSICANT DRIVE UNIT, AUTOMATIC CONTROLLER AND ALL COMPONENTS' AUXILIARIES. REACTIVATION ENERGY MODULATION SHALL BE STEPLESS SLOW STATE PROPORTIONING TYPE. DEHUMIDIFIER SHALL BE FUNCTIONALLY TESTED AT THE MANUFACTURER'S FACTORY AND SHIPPED COMPLETE WITH ALL COMPONENTS NECESSARY TO MAINTAIN NORMAL OPERATION.

WATER COOLED CONDENSING UNIT SCHEDULE (REFRIGERATION SERVICE)																			
MARK	LOCATION	SYSTEM AND/OR SERVICE	CAPACITY		WATER COOLED CONDENSER			COMPRESSOR MOTOR				REMARKS							
			BTUH	[W]	FLOW	EWT		LWT	COOLING SOURCE	# COMP	POWER								
						°F	[°C]				°F		[°C]	HP	[W]	PHASE	VOLT		
CU-FRZ-1	B017	EVP-FRZ-1	9410	[2800]	-20	[-29]	1.1	[4]	85	[29]	105	[41]	CWS	1	4	[3000]	3	208	R-404A
CU-FRZ-2	B017	EVP-FRZ-2	9410	[2800]	-20	[-29]	1.1	[4]	85	[29]	105	[41]	CWS	1	4	[3000]	3	208	R-404A
CU-CLR-1	B017	EVP-CLR-1	8,660	[2500]	25	[-4]	1.9	[7]	85	[29]	105	[41]	CWS	1	1	[750]	3	208	R-404A
CU-CLR-2	B017	EVP-CLR-2	8,660	[2500]	25	[-4]	1.9	[7]	85	[29]	105	[41]	CWS	1	1	[750]	3	208	R-404A

WATER COOLED CONDENSING UNIT SPECIFICATION

THE SYSTEM SHALL BE A COAXIAL STYLE WATER COOLED CONDENSER EQUIPPED WITH A FACTORY MOUNTED HERMETIC OR SEMI-HERMETIC COMPRESSOR MOTOR. EACH UNIT SHALL BE SUPPLIED WITH A CRANKCASE HEATER, LIQUID LINE WITH FILTER DRIER AND SIGHT GLASS, SUCTION LINE WITH FILTER, RECEIVER WITH FUSIBLE PLUG AND SHUTOFF VALVE, HIGH/LOW PRESSURE CONTROL ELECTRICAL CONTROL BOX WITH COMPRESSOR CONTACTOR AND FUSED CONTROL CIRCUIT. WATER REGULATING VALVE SHALL BE SHIPPED LOOSE WITH EACH UNIT. EACH CONDENSING UNIT SHALL EMPLOY REFRIGERANT R-404A FOR MEDIUM AND LOW TEMPERATURE APPLICATION RESPECTIVELY. ALL CONDENSING UNITS SHALL BE SHIPPED WITH A HOLDING CHARGE OF DRY NITROGEN OR HELIUM.

UNIT COOLER EVAPORATOR SCHEDULE (REFRIGERATION SERVICE)																
MARK	LOCATION	SYSTEM AND/OR SERVICE	EVAPORATOR SECTION TEMP		CAPACITY		ROOM DESIGN TEMP		AIR FLOW		MOTOR				REMARKS	
			°F	[°C]	BTUH	[W]	°F	[°C]	CFM	[L/S]	#	POWER EACH		PHASE		VOLT
												HP	[W]			
EVP-FRZ-1	B009	FRZ-1	-18	[-28]	9,000	[2600]	-12	[-24]	1910	[900]	2	1/15	[50]	1	115	ELEC TEMP AND DEFOST CONTROL
EVP-FRZ-2	B009	FRZ-2	-18	[-28]	9,000	[2600]	-12	[-24]	1910	[900]	2	1/15	[50]	1	115	ELEC TEMP AND DEFOST CONTROL
EVP-CLD-1	B009	CLD-1	27	[-3]	8,600	[2500]	32	[0]	2020	[950]	2	1/15	[50]	1	115	ELEC TEMP AND DEFOST CONTROL
EVP-CLD-2	B009	CLD-2	27	[-3]	8,600	[2500]	32	[0]	2020	[950]	2	1/15	[50]	1	115	ELEC TEMP AND DEFOST CONTROL

GENERAL EVAPORATOR SPECIFICATION

UNIT COOLER CAPACITY SHALL BE BASED ON AN EVAPORATION TEMPERATURE 2°F (1.1 °C) HIGHER THAN SUCTION TEMPERATURE OF COMPRESSOR. THE CONDENSING UNIT SHALL BE CAPACITY MATCHED TO A NSF, CUL LISTED EVAPORATOR COIL CONSTRUCTED OF A RUSTFREE ALUMINUM HOUSING CONSISTING OF STAGGERED COPPER TUBES EXPANDED INTO CORRUGATED ALUMINUM FINS (6 FPI) FOR INCREASED HEAT TRANSFER. HINGED DRAIN PAN WITH CENTRAL UNIVERSAL DRAIN CONNECTION (3/4" DRAIN). MEDIUM TEMPERATURE APPLICATIONS EMPLOY "OFF-CYCLE" DEFOST USING 115 VOLT FAN MOTORS TIED TO A FACTORY MOUNTED ELECTRONIC TEMPERATURE AND DEFOST CONTROLLER. EVAPORATORS SHALL BE SUPPLIED WITH FACTORY INSTALLED TX VALVE AND SOLENOID VALVE.

WALK-IN COOLER/FREEZER SPECIFICATION

SUMMARY: COOLER/FREEZER SHALL BE CONSTRUCTED OF 3" (75 MM) TO 5" (125 MM) THICK CELLULAR FOAM ENCASED PREFABRICATED MODULAR PANELS. DOOR TO BE 34" (864 MM) X 78" (1981 MM) FLUSH DOOR JAMB AND DOOR PERIMETER, MAGNETIC DOOR GASKETS, KASON #1245 CAM LIFT HINGES AND KASON #1229C KEYPED DOOR LATCH, PRE WIRED SWITCH PILOT LIGHT AND 3 MOUNTED VAPOR PROOF LIGHT FIXTURE TO BE FACTORY INSTALLED IN COOLER/FREEZER. A SOLAR DIGITAL THERMOMETER SHALL BE PROVIDED ON THE EXTERIOR OF THE COOLER/FREEZER. WALL CLOSURES AND COVE BASE SHALL BE INCLUDED. A HEATED AIR VENT AND 4 SIDED DOOR HEATER CABLE FOR FREEZER ONLY SHALL BE INSTALLED.

GENERAL: WALK-IN COOLERS AND FREEZERS PROVIDED UNDER THIS SPECIFICATION, RELATED PROVISIONS AND DRAWINGS SHALL BE OF PREFABRICATED, MODULAR DESIGN AND CONSTRUCTION. THIS DESIGN SHALL ALLOW FOR ACCURATE AND CONVENIENT FIELD ASSEMBLY WHICH WILL FACILITATE FUTURE ENLARGEMENT OR RELOCATION PROVISIONS. THE WALK-IN COOLERS AND FREEZERS SHALL BE PROVIDED COMPLETE BY ONE MANUFACTURER AND CLEARLY LABELED WITH CODE APPROVALS AND INDUSTRY STANDARD MARKINGS. THE WALK-IN COOLER AND FREEZER MANUFACTURER SHALL PROVIDE AND SUBMIT: PRODUCT DATA; SCALE; SHOP DRAWING PLANS, ELEVATIONS AND DETAILS; ROUGH-IN DRAWINGS; CUT SHEETS OF BUYOUT ACCESSORIES; INSTALLATION AND MAINTENANCE MANUALS WITH COPIES OF ALL WARRANTIES. THE PREFABRICATED, INSULATED PANELS SHALL BE OF MODULAR DESIGN WITH STANDARD SIZING TO BE COMPLETELY INTERCHANGEABLE IN THE FIELD. EACH PANEL SHALL CONSIST OF UNIFORM AND PRECISE EXTERIOR AND INTERIOR METAL PANS. ALL PANEL CORNERS SHALL BE A TRUE NINETY DEGREE ANGLE. VERTICAL CORNER INTERIOR OF CORNER PANELS AND TEE PANELS TO BE FABRICATED WITH A NSF RADIUS. PANELS ARE TO BE INJECTED WITH "FOAMED-IN-PLACE" URETHANE INSULATION AND HAVE TONGUE AND GROOVE MATING EDGES. THE TONGUE EDGE OF EACH PANEL SHALL BE PROVIDED WITH A NSF LISTED GASKET TO PROVIDE AN AIR TIGHT JOINT. PANELS SHALL BE RIGIDLY COUPLED BY CAM ACTION LOCKING DEVICE LOCATED A MAXIMUM OF FOUR FEET ON CENTER APART FROM EACH OTHER. THE CAM LOCKS SHALL BE OPERATED FROM THE INTERIOR OF THE WALK-IN COOLER OR FREEZER BY USE OF A HEX WRENCH. EACH HEX WRENCH ACCESS PORT SHALL BE COVERED WITH A SNAP-IN BUTTON PLUG. MAXIMUM DEFLECTION OF CEILING PANELS SHALL NOT EXCEED L/240 OF SPAN UNDER A LOAD OF 15 PSF (73 KG/M²).

FOAM PANELS: EACH PREFABRICATED PANEL SHALL BE "FOAMED-IN-PLACE" (INJECTED) WITH U.L. LISTED, CLASS 1 URETHANE FOAM INSULATION WHICH HAS A FLAME SPREAD RATING LESS THAN 25 AND SMOKE DENSITY LESS THAN 450 WHEN TESTED IN ACCORDANCE TO ASTM E84 (UL 723). THE THERMAL CONDUCTIVITY OR "K" FACTOR OF THE INSULATION SHALL BE 0.12 BTU/HR./FT SQUARED PER DEGREE FAHRENHEIT / INCH OI THICKNESS. OVERALL PANEL THICKNESS SHALL BE MINIMUM 3" (75 MM). FOAM INSULATION SHALL BE DIMENSIONALLY STABLE FROM -100 DEG F (-73 DEG C) TO +200 DEG F (+93 DEG C).

METAL FINISHES: PREFABRICATED PANEL EXTERIOR AND INTERIOR METAL FINISHES SHALL BE MINIMUM 26 GA STUCCO EMBOSSED BAKED WHITE ENAMEL ON GALVANIZED STEEL TO ASTM A525 OR 24 GA SMOOTH BAKED WHITE ENAMEL ON GALVANIZED STEEL.

FLOOR CONSTRUCTION: PREFABRICATED FLOOR PANELS SHALL BE OF SIMILAR CONSTRUCTION TO THE OTHER PANELS WITH A FULLY FORMED NSF INTERIOR RADIUS AND STAMPED CORNERS. FLOOR PANELS SHALL BE DESIGNED TO WITHSTAND A UNIFORMLY DISTRIBUTED WEIGHT LOAD OF 300 PSF (73 KG/M²). WALL PANELS SHALL BE SET IN A CONTINUOUS GROOVE OF FLOOR PANELS AND ATTACHED TO THE FLOOR PANEL WITH CAM LOCKS. AN EXTERIOR MOUNTED RAMP CONSTRUCTED OF DIAMOND PLATE SHALL BE PROVIDED FOR EACH COOLER AND FREEZER.

DOORS AND HARDWARE: THE STANDARD SWING DOOR CLEAR OPENINGS SIZE SHALL BE 34" (864 MM) WIDE BY 78" (1981 MM) HIGH AND HINGED PER THE FSEC SUPPLIED DRAWINGS. SWING DOORS SHALL BE FLUSH. DOORS SHALL BE FINISHED TO MATCH THE METAL FINISH OF WALL PANELS UNLESS OTHERWISE SPECIFIED. EACH DOOR SHALL BE PROVIDED WITH A THREE SIDED SNAP-IN MAGNETIC GASKET WITH AN ADJUSTABLE SWEEP GASKET TO SEAL THE BOTTOM OF THE DOOR. THE DOOR AND DOOR FRAME SECTION SHALL BE OF THE SAME CORE THICKNESS AND CONSTRUCTION AS SPECIFIED FOR THE OTHER PANELS. DOORS SHALL BE MOUNTED WITH A MINIMUM OF TWO KASON #1245 OR EQUAL CAM LIFT HINGES, ONE KASON #1229C OR EQU KEYED DOOR LATCH WITH INTERIOR SAFETY RELEASE, ONE KASON MODEL #1094 OR EQUAL DOOR CLOSER ONE 2" (50 MM) SOLAR POWER DIGITAL THERMOMETER AND THREE PRE WIRED PILOT LIGHT AND SWITCH TO INTERIOR MOUNTED 100 WATT VAPOR PROOF LIGHT FIXTURE WITH PROTECTIVE GLOBE. FREEZER DOOR JAMB SHALL BE PROVIDED WITH HEATER CABLE WITH A STAINLESS STEEL THRESHOLD AND ONE HEATED AIR VENT TO EQUALIZE PRESSURE BETWEEN THE INTERIOR COMPARTMENT AND EXTERIOR SPACES.