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SYMBOL	DESCRIPTION
(M)	MAIN REFRIGERATION CIRCUIT DESIGNATION
(R)	RELOCATED EXISTING REFRIGERATION CIRCUIT (NEW DESIGNATION)
(R)	EXISTING REFRIGERATION CIRCUIT TO REMAIN (EXISTING DESIGNATION)
(N)	NEW SELF-CONTAINED REFRIGERATION CIRCUIT DESIGNATION
	DEFROST TERMINATION THERMOSTAT
	SUCTION STOP SOLENOID VALVE
	SUCTION STOP SOLENOID VALVE WITH HOOL GAS DEFROST BYPASS GLOBE VALVE
	LIQUID LINE SOLENOID VALVE
	LIQUID LINE SOLENOID VALVE WITH HOOL GAS DEFROST BYPASS GLOBE VALVE
	ANGLE-PATTERN SOLENOID VALVE / PARKER SPORLAN SERIES
	DOOR SWITCH
	HEAT TAPE
	SPORLAN ELECTRIC PRESSURE MODULATING VALVE
	SPORLAN
	PULL PORT BALL VALVE
	PULL PORT BALL VALVE WITH MOTORIZED CONTROL
	2 - WAY HEAT REGULATOR VALVE
	THERMOSTATIC EXPANSION VALVE
	LARGE VALVE
	MANUAL STEM BALL VALVE
	MANUAL STEM SOLENOID VALVE W/ COIL
	SOLENOID VALVE / PLUNGER VALVE
	SLUICE VALVE
GATEWAY	GATEWAY
	VIBRATION ELIMINATOR
	STRAINER
	PRESSURE REGULATING VALVE
	PURGE VALVE
	DRYER
	LIQUID SLEUTH WITH MOISTURE LOOK
	SUCTION FILTER
	PACKLESS ANGLE VALVE
AT	AMBIENT TEMPERATURE SENSOR
	CARBON DIOXIDE SENSOR
	DEW POINT SENSOR
	AIR FLOW SWITCH
	OUTSIDE DEWPOINT SENSOR
	ENCINEERED BRASS GLASS STATION (DOMESTIC AND T-DRAIN)
	DEFROST TERMINATION SENSOR

SYMBOL	DESCRIPTION
LDS	REFRIGERANT LEAK SENSOR
ULS	LIQUID LEAK SENSOR (OUTDOOR)
ELS	LIQUID LEAK SENSOR (INDOOR)
P	ASSOLUTE TEMPERATURE SENSOR (REFRIGERATION)
PI	PRODUCT PROBE
AM	RELATIVE HUMIDITY SENSOR
S	ANALOG TEMPERATURE SENSOR (VOLT)
FC	HOOD INTERLOCK
T	THERMOSTAT
S.M.A.	EMC DOOR MONITORING ALARM SYSTEM
R.L.T.	EMC REFRIGERANT LEAK REGULATOR
	DUPLEX EMC REFRIGERANT LEAK DETECTION END FILTER
EC	ELECTRIC DEFROST CONTACTOR
A.V.	HOUSE / VISUAL ALARM ANNUNCIATOR
V.P.S.	VERI PRISM PT TEMPERATURE SENSOR
V.P.R.	VERI PRISM RECEIVER
C.C.B.	CASE CONTROL BOARD
P.M.	POWER CONTROL MODULE
I	CLEAN POWER FACILITY INSTALLED BY EC
	LENNOX 24 SURGE MODEL#SA24
P/S	POWER SUPPLY
	CPC 4REA FRESH & INTERNAL DEFROST BOARD
	REMOTE FOOD SERVICE DISPLAY BOARD
	CPC 4 RELAY OUTPUT BOARD (SYSTEM C)
	CPC INPUT (16) / RELAY OUTPUT (8) BOARD
	CPC INPUT (8) / RELAY OUTPUT (8) BOARD
	CPC INPUT (8) / RELAY OUTPUT (8), ANALOG OUTPUT (4) BOARD
	CPC INPUT (8) / RELAY OUTPUT (8), ANALOG OUTPUT (4) BOARD
	CPC MULTI-FLEX ROOFTOP CONTROLLER
	CPC MULTI-FLEX ROOFTOP UNIT CONTROL BOARD
	CPC CONTROL BOARD WITH SERIAL TRANSDUCER
	CPC CONTROL BOARD WITH SERIAL TRANSDUCER, SOLENOID CONTROL BOARD (SOLENOID/HEATER EXPANSION TEST)
	ACC CPC WITH CONDENSATE CONTROLLER

SYMBOL	DESCRIPTION
AT	SENSING AIR TEMPERATURE SENSOR
SPA	SWITCH PAN ALARM
SPT	SUCTION PRESSURE TRANSDUCER
DPT	DISCHARGE PRESSURE TRANSDUCER
SD	SHUTDOWN
SE	SYSTEM ENABLE
DT	DISCHARGE TEMPERATURE
	KEY NOTE SYMBOL
	CONNECT TO EXISTING
NOTES/DETAILS	NEW TECHNOLOGY/S PVC CONDUIT / FLOOR SLAB
	EXISTING TECHNOLOGY
	EXISTING TECHNOLOGY TO BE ABANDONED
	NEW REFRIGERANT TECH PULL BOX
	EXISTING REFRIGERATION PULL BOX
	EXISTING PULL BOX TO BE ABANDONED
	SUCTION LINE RISE / LIQUID LINE DROP
	SUCTION / LIQUID LINE CONNECTION TEE
	SUCTION LINE DROP / LIQUID LINE RISE
	EVAPORATOR (HIGH VELOCITY TYPE)
	EVAPORATOR SLOW VELOCITY TYPE)

1 DETAIL — SCALE: NONE

EQUIPMENT TAG
RC X
USETT DESIGNATION
UNIT NUMBER

1 REFRIGERATION/ENERGY MANAGEMENT SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
AFF	ABOVE FINISHED FLOOR	LBA	LOCK BOTTOM ANGLE	KA-300, 400	CPC CONDITION 2 REFRIGERATION CONTROLLER
AFG	ABOVE FINISHED GRADE	LT	LOW TEMPERATURE	KA-300, 400	CPC CONDITION 2 RELEASING ENVIRONMENTAL CONTROLLER
ATC	AUTOMATIC TEMPERATURE CONTROLS	MAX	MAXIMUM	CK-300, 400	CPC CONDITION 2 REFRIGERATION / BUILDING ENVIRONMENTAL CONTROLLER
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATING & AIR-CONDITIONING ENGINEERS	MBH	THOUSANDS OF BTU'S / HOUR	KA-300E, 400E	CPC CONDITION 2E REFRIGERATION CONTROLLER
BFG	BELOW FINISHED GRADE	MC	MECHANICAL CONTRACTOR	KA-300E, 400E	CPC CONDITION 2E BUILDING ENVIRONMENTAL CONTROLLER
BLDG	BUILDING	MCA	MINIMUM CIRCUIT AMPS	CK-300E, 400E	CPC CONDITION 2E REFRIGERATION / BUILDING ENVIRONMENTAL CONTROLLER
BTU	BRITISH THERMAL UNIT	MEZZ	MEZZANINE	RMCC	CPC REFRIGERATION MONITOR AND CASE CONTROLLER
CEM	CONVENIENCE EQUIPMENT MANUFACTURER	MFR	MANUFACTURER	SEC	CPC BUILDING ENVIRONMENT CONTROL
CLG	CEILING	MH	MOUNTING HEIGHT	SCU	CPC BUILDING CONTROLLER UNIT
CO	CONDUIT	MOP	MINIMUM	TRAC	CPC PULSE MODULATION ANTI-SWEAT CONTROLLER
CONST	CONSTRUCTION	MT	MEDIUM TEMPERATURE	16AI	CPC 16 ANALOG / DIGITAL INPUT BOARD
COND	CONDENSER	MTS	MOUNTED	8RO	CPC 8 RELAY OUTPUT BOARD
CSM	CONTRACTOR SYSTEMS MANUFACTURER	N/A	NOT APPLICABLE	4AO	CPC 4 ANALOG RELAY OUTPUT BOARD
CTE	CONNECT TO EXISTING	NC	NORMALLY CLOSED	MP16B	CPC INPUT (16) / RELAY OUTPUT (8) BOARD
CU	CONDENSING UNIT	NEC	NATIONAL ELECTRIC CODE	MP8B	CPC INPUT (8) / RELAY OUTPUT (8) BOARD
DB	DRY BULB	NIC	NOT IN CONTRACT	MP8B4AO	CPC INPUT (8) / RELAY OUTPUT (8), ANALOG OUTPUT (4) BOARD
EH	DOWN	NO	NORMALLY OPEN	MP8B4AO	CPC INPUT (8) / RELAY OUTPUT (8), ANALOG OUTPUT (4) BOARD
DWG(S)	DRAWING(S)	NTS	NOT TO SCALE	MPRTU	CPC MULTI-FLEX ROOFTOP CONTROLLER
EC	ELECTRICAL CONTRACTOR	OC	ON CENTER	MPRTU	CPC MULTI-FLEX ROOFTOP UNIT CONTROL BOARD
EER	ENERGY EFFICIENCY RATIO	OT	OFF TIME	OCB	CPC CASE CONTROLLER BOARD
EL	ELECTRIC	PC	PLUMBING CONTRACTOR	VSD	CPC VARIABLE SPEED CONTROLLER DRIVE
EM	EMERGENCY	PSI	POUNDS PER SQUARE INCH	ECH	ESCH-ELSON 4 CABLE
EQPM	EQUIPMENT	R	EXISTING EQUIPMENT TO BE REMOVED	RJ6485	ON SITE COMMUNICATION CABLE, RS-485 RJ12 6-WIRE 4-CONDUCTED CABLE
ESB	ENCLOSURE TO BE RELOCATED	REM	REFRIGERATION EQUIPMENT MANUFACTURER	RJ12T2	REMOTE COMMUNICATION CABLE, RS-485 RJ12 6-WIRE 4-CONDUCTED CABLE
EX	EXISTING TO REMAIN	RH	RELATIVE HUMIDITY	HSM-16Z	RANGEHOOD HSM-16Z MULTI-ZONE GAS MONITOR DUALSENSE
FLA	FULL LOAD AMPS	RTC	REFRIGERATION INSTALLATION CONTRACTOR		
GC	GENERAL CONTRACTOR	RLA	RUNNING LOAD AMPS		
GFRP	GLASS FIBER REINFORCED POLYESTER	RPM	REVOLUTIONS PER MINUTE		
H	HUMIDISTAT	S/C	SELF CONTAINED FIXTURE		
HG	HOT GAS	SQ. FT.	SQUARE FEET		
HM	HVAC MANUFACTURER	T	THERMOSTAT		
HP	HORSEPOWER	TYP	TYPICAL		
HSL	HORIZONTAL SUCTION LINE	VS	VERTICAL SUCTION LINE		
HV	HEATING AND VENTILATION	VSD	VARIABLE SPEED DRIVE		
HVC	HVAC CONTRACTOR	VSDR	VERTICAL SUCTION DOUBLE RISER		
HVAC	HEATING, VENTILATION, AIR-CONDITIONING	WB	WET BULB		
HX	HEAT EXCHANGER				
RG	COOL GAS				
L	LIQUID LINE				

2 ABBREVIATIONS

CODE CONFORMANCE CHART
2018 INTERNATIONAL MECHANICAL CODE

1.	REFRIGERANT TYPE	R-448a
2.	CLASSIFICATION	A1
3.	TYPE OF SYSTEM	DIRECT EXPANSION
4.	AMOUNT OF REFRIGERANT	RACK A: 900 lbs RACK B: 1,200 lbs RACK C: 1,800 lbs
5.	VOLUME CALCULATIONS	SEE CHART BELOW
6.	SYSTEM APPLICATION REQUIREMENTS AND CALCULATIONS	RACK A: 108'L x 40'W x 74'H RACK B: 108'L x 40'W x 74'H RACK C: 156'L x 40'W x 74'H
7.	VENTILATION REQUIREMENTS	SEE HVAC PLANS
8.	LEVEL OF MACHINE ROOM	LEVEL 1
9.	TYPE / TUBE MATERIAL USED	TYPE L OR TYPE K COPPER AC & R

LIST OF SAFETY DEVICES

LEAK DETECTION SYSTEM
ROOM ACCESS DOOR
PRESSURE RELIEF DEVICES
INTERLOCKED VENTILATION FANS

* NOTE:
MAXIMUM ALLOWABLE REFRIGERANT TO EXCEEDED. ADDITIONAL LEAK DETECTION EQUIPMENT MUST BE INTEGRATED WITH CONTROL SYSTEM TO STOP THE FLOW OF REFRIGERANT TO THE INDIVIDUAL MALE(N) ROOMS / ENCLOSED REFRIGERATED UNITS IN THE EVENT OF A REFRIGERANT LEAK. REFER TO REFRIGERATION / ENERGY MANAGEMENT PLANS AND THE REFRIGERATION SPECIFICATIONS FOR MORE DETAILS.

V = 0.0047 * MAXIMUM ALLOWABLE FOR R-448a

CIRCUIT	DESCRIPTION	SQUARE FEET	CUBIC FEET	TYPE OF REFRIG	MAXIMUM ALLOWABLE*
A10	KITCHEN FREEZER (ex)	104	1,040	R-448a	4.89 lbs.
A11	SEAFOOD FREEZER (ex)	128	1,280	R-448a	6.02 lbs.
A12	MEAT FREEZER (ex)	96	960	R-448a	4.51 lbs.
A13	GROCERY FREEZER (ex)	264	2,640	R-448a	12.05 lbs.
A14	BAKERY FREEZER (ex)	170	1,700	R-448a	7.99 lbs.
B20	POULTRY COOLER I (ex)	96	960	R-448a	4.51 lbs.
B21	SEAFOOD COOLER (ex)	144	1,440	R-448a	6.77 lbs.
B22	POULTRY COOLER (ex)	224	2,240	R-448a	10.53 lbs.
B23	MEAT COOLER (ex)	416	4,160	R-448a	19.55 lbs.
C5	FLORAL COOLER (ex)	180	1,800	R-448a	8.46 lbs.
C6	WET PRODUCE COOLER (ex)	408	4,080	R-448a	19.18 lbs.
C7	DRY PRODUCE COOLER (ex)	416	4,160	R-448a	19.55 lbs.
C25	BULK COOLER (ex)	90	900	R-448a	4.23 lbs.
C26	RAW COOLER (ex)	204	2,040	R-448a	9.59 lbs.
C27	RIPP FOODS COOLER (ex)	128	1,280	R-448a	6.02 lbs.
C28	SPECIALTY COOLER (ex)	364	3,640	R-448a	17.12 lbs.
C29	DAIRY COOLER (ex)	792	7,920	R-448a	37.22 lbs.
...	MEZZANINE MOTOR ROOM (mod. ex.)	1,344	13,440	R-448a	63.17 lbs.

REFRIGERANT CHARGE CALCULATIONS BASED ON ASHRAE STANDARD 15 AND 34 AND IMC 2018 SECTION 1101.7 AND 1101.8. REFRIGERANT CHARGE QUANTITIES ARE BASED ON THE MAXIMUM QUANTITY OF REFRIGERANT PERMITTED IN THE ENCLOSED SPACE AND THE QUANTITY OF REFRIGERANT CONTAINED IN THE REFRIGERATED SPACE AND THE QUANTITY OF REFRIGERANT CONTAINED IN THE EXISTING RANGEHOOD HSM-16Z GAS MONITORING SYSTEM. ADDITIONAL ALARM / MONITORING EQUIPMENT INCLUDING, BUT NOT LIMITED TO, SUCTION LINE SHUT-OFF VALVES, LIQUID LINE SHUT-OFF VALVES, AND ALARM SYSTEMS SHALL BE INTEGRATED WITH THE BUILDING MANAGEMENT SYSTEM TO STOP THE FLOW OF REFRIGERANT TO THE INDIVIDUAL MALE(N) ROOMS / ENCLOSED REFRIGERATED UNITS IN THE EVENT OF A REFRIGERANT LEAK. REFER TO REFRIGERATION / ENERGY MANAGEMENT PLANS.

EQUIVALENT OF OPERATION/MAINTENANCE MANUALS
REFRIGERANT LEAK DETECTION SYSTEM SHALL ONCE INSTALLED, BE TESTED AND CERTIFIED BY THE MANUFACTURER'S TECHNICIAN. THE RESULTS SHALL BE RECORDED AND A COPY OF THE RESULTS SHALL BE INCLUDED IN THE OPERATION AND MAINTENANCE MANUAL. THE RESULTS SHALL BE ENTERED INTO THE CHANGE OF REFRIGERANT LOG.