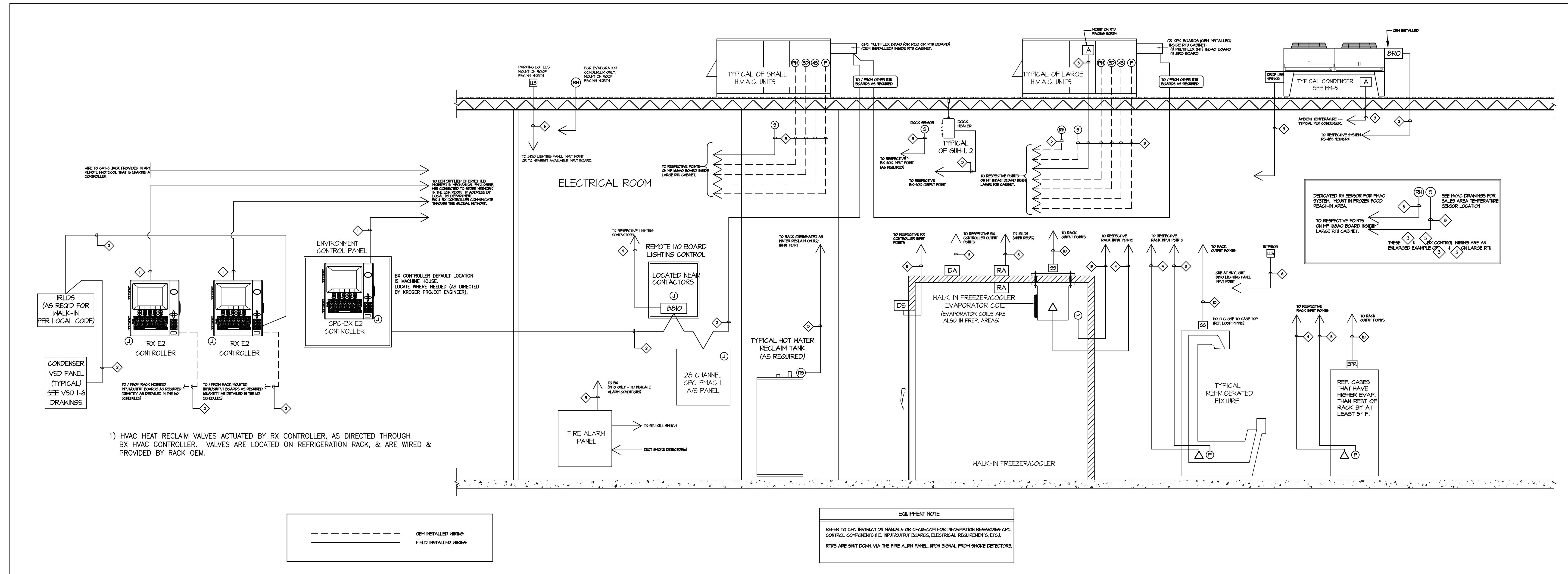


NO.	REVISIONS	DATE	DESCRIPTION



**1 ENERGY MANAGEMENT SYSTEM REQUIREMENTS**

CONTROL TAKEOFF	Description	Supplier Part ID	Qty
<b>REFRIGERANT LEAK DETECTION</b>			
K-0008846	2-8RD board w/ 24V out and enclosure	810-2016	1
K-0009623	Gateway, RLD5	810-3760	1
K-0008848	24V Transformer, 80VA 120/208/240V Center Tap - Class 2	640-0056	1
K-0052368	Bacharach 16Ch HGM MZ, 5x 1,000' Tubing, 10 High Flow Fittings, 2 & 3 way splitter connections with line end filter assembly, Machine room binder with technical bulletins and parts guide (Includes Filter Ends)	3015-KIT	1
K-0052371	Washdown J-box for filter ends.	3015-5748	4
K-0052370	Tubing, 1,000' roll (Not for NH3)	TG100	EXTRA IF REQ'D
K-0052372	Line End Filter Assembly (includes filter & tubing connection)	3015-3420	EXTRA IF REQ'D
K-0052397	TYPE BLUE HORN STROBE MTWPB-2475W-NV	BLUE HORN STROBE	1 FOR OFFICES, 1 NEAR LDU, 1 PER MECH ROOM, 1 PER BOX (CODE MAY REQUIRE 2 PER BOX, INSIDE AND OUTSIDE)
<b>LIGHTING CONTACTOR CONTROL</b>			
K-0038612	2-MultiFlex 88 boards and 13x11 enclosure, 2 light level sensors	810-1013	1
K-0019685	24V Transformer, 80VA 120/208/240V Center Tap - Class 2	640-0080	1
<b>LIGHTING DIMMING CONTROL</b>			
K-0008853	1- 88AD board and enclosure	810-1100	1
K-0037680	fluorescent Dimmer Kit (board and trim)	684-0400	2
K-0019685	24V Transformer, 80VA 120/208/240V Center Tap - Class 2	640-0080	1
<b>BUILDING CONTROL</b>			
K-0008729	E2E 8X400 No Cards (For upgrade of older E1 and RMCC Units)	843-2400	AS REQ'D
K-0008718	E2E 8X400 No Cards (For upgrade of older E1 and RMCC Units)	843-1400	AS REQ'D
K-0008822	Indoor Humidity Sensor (2%, 12VDC)	203-5751	2
K-0008821	Single Gang Box Space Temp Sensor	809-6590	1 PER RTU
K-0008720	Indoor CO2 0-2000 PPM w/ Display 24VAC	510-2001	2
K-0008852	Immersion Temp probe, 8 inch length 3/4 inch-14 threads, SS	501-2008	1
K-0008860	PMAC II 28 Channel, 16 Amp per Channel (APPLIED WHEN ANTI-SWEATS ARE SEPARATED AT THE CASE, AND STORE HAS AN EXISTING CPC)	851-1004	1
K-0008819	20' Green General Purpose Temp Sensor	501-1122	1 PER BOX

**3 ENERGY MANAGEMENT WIRING SCHEDULE**

KEY NOTE	DESCRIPTION	WIRE TYPE	
		PLENUM	NON-PLENUM
◇	MAIN CONNECTION	BELDEN #8038P #24-6 CATEGORY-5 CABLE OR APPROVED EQUAL	BELDEN #8038P #24-6 CATEGORY-5 CABLE OR APPROVED EQUAL
◇	RS-485 NETWORK	BELDEN #8038P #22-2 SHIELDED CABLE OR APPROVED EQUAL	BELDEN #8038P #22-2 SHIELDED CABLE OR APPROVED EQUAL
◇	ANALOG/DIGITAL TEMPERATURE SENSOR/INPUT	BELDEN #80761 #22-2 SHIELDED CABLE OR APPROVED EQUAL	BELDEN #80761 #22-2 SHIELDED CABLE OR APPROVED EQUAL
◇	DEPOSIT TERMINATION SENSOR	BELDEN #80761 #22-2 SHIELDED CABLE OR APPROVED EQUAL	BELDEN #80761 #22-2 SHIELDED CABLE OR APPROVED EQUAL
◇	RELATIVE HUMIDITY SENSOR	BELDEN #8038P #22-2 SHIELDED CABLE OR APPROVED EQUAL	BELDEN #8038P #22-2 SHIELDED CABLE OR APPROVED EQUAL
◇	LIGHT LEVEL SENSOR	BELDEN #8038P #22-2 SHIELDED CABLE OR APPROVED EQUAL	BELDEN #80761 #22-2 SHIELDED CABLE OR APPROVED EQUAL
◇	OUTDOOR TEMPERATURE SENSOR, XROF LED SENSOR	BELDEN #80761 #22-2 SHIELDED CABLE OR APPROVED EQUAL	BELDEN #80761 #22-2 SHIELDED CABLE OR APPROVED EQUAL
◇	NOT USED		
◇	LIGHTING CONTROL	#4 THISTED PAIR PER LIGHTING CONTACTOR (PLENUM RATED)	#4 THISTED PAIR PER LIGHTING CONTACTOR
◇	REFRIGERATION SOLENOID VALVE	BELDEN #80761 #22-2 SHIELDED CABLE (PLENUM RATED)	BELDEN #80761 #22-2 SHIELDED CABLE
◇	NOT USED		
◇	HVAC STAGING CONTROL	2-#6-10 MULTI-CONDUCTOR CABLE (PLENUM RATED)	2-#6-10 MULTI-CONDUCTOR CABLE
◇	UNIT HEATER CONTROL	#4 THISTED PAIR (PLENUM RATED)	#4 THISTED PAIR
◇	LINE VOLTAGE IN CONDUIT	PER NEC & MANUFACTURER'S GUIDELINES	

**7 GENERAL SYMBOLS**

SYMBOL	DESCRIPTION	PNET #
◇	REFRIGERATION CIRCUIT DESIGNATION	---
△	DEPOSIT TERMINATION THERMOSTAT	02H
◇	ANALOG TEMPERATURE SENSOR	02H
◇	ANALOG TEMPERATURE SENSOR (HVAC)	EPGJ 080-000400R
◇	ANALOG RELATIVE HUMIDITY SENSOR	EPGJ 080-000400R (INDOOR) EPGJ 080-000400T (OUTDOOR)
LLS	LIGHT LEVEL SENSOR	EPGJ (INDOOR & OUTDOOR) 080-000400T
△	AMBIENT TEMPERATURE SENSOR / SHIELD	080-000400R / 080-000400T
DS	DOOR SWITCH	02H
PH	PHASE HEAVY	02H
SD	SHOKE DETECTOR	02H
⊕	CLEAN POWER FIELD INSTALLED BY GC	---
◇	KEY NOTE SYMBOL	---
DA	LOGICAL DOOR ALARM	---
RA	LOCAL REFRIGERATION ALARM	---
ITB	IMMENSIBLE TEMPERATURE SENSOR NUMBER	EPGJ 080-000400B
AI	AI INTERNAL RTU HOVED AIR TEMPERATURE SENSORS	N/A SUPPLIED BY RTU VENDOR
OI	OI INTERNAL RTU HOVED AIR TEMPERATURE SENSORS	N/A SUPPLIED BY RTU VENDOR
F	AIR FLOW SAIL PROOFING SWITCH	N/A SUPPLIED BY RTU VENDOR
SS	SECTION STOP SOLENOID	---
EPN	EVAPORATOR PRESSURE REGULATOR	---

**8 ENERGY MANAGEMENT NOTES**

- THE DRG-C SHALL BE RESPONSIBLE FOR SUPERVISING THE COMPLETE INSTALLATION OF THE ENERGY MANAGEMENT SYSTEM (EMS). THIS SHALL INCLUDE, BUT NOT BE LIMITED TO THE START-UP, PROGRAMMING AND PROGRAMMING ADJUSTMENT OF THE ENTIRE CPC CONTROL SYSTEM, INCLUDING REFRIGERATION, HVAC, AND LIGHTING CONTROL.
- THE DRG-C SHALL PROVIDE ALL COORDINATION BETWEEN THE VARIOUS TRADES, INCLUDING REFRIGERATION, HVAC, AND ELECTRICAL, TO INSURE THAT ALL EQUIPMENT IS PROPERLY CONTROLLED AND THAT ALL CONTROL SYSTEMS ARE PROPERLY COORDINATED. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO THE COORDINATION OF ALL SIZES OF HEATING, COOLING, HEAT RECLAIM, THE SPEED PANEL, ETC. AND INSURING THAT ADEQUATE SENSORS HAVE BEEN SUPPLIED TO ENABLE PROPER CONTROL OF SAME.
- UPON COMPLETION OF THE EMS INSTALLATION, THE DRG-C SHALL PROVIDE ACCURATE AND COMPLETE AS-BUILT DOCUMENTATION TO THE OWNER AND THE ENGINEER. THIS DOCUMENTATION SHALL INCLUDE AN AS-BUILT PLAN INDICATING THE LOCATIONS OF ALL OF THE CASE CONTROLS, PROBES, SENSORS, RELAYS, REMOTE I/O BOARDS, CONTROLS, PROBES AND REFRIGERANT LEAK SENSORS FOR THE ENTIRE EMS INSTALLATION INCLUDING REFRIGERATION, HVAC, AND LIGHTING. THE DRG-C SHALL ALSO CONTROL PANEL, PARTS LIST, THE DOCUMENT SHALL INCLUDE A COMPLETE PARTS LIST, INCLUDING SENSORS, PROBES, BOARD, CONTACTORS AND OTHER. SET POINTS FOR THE CONTROLS, HVAC, AND LIGHTING SHALL BE PROVIDED BY THE DRG-C.
- UPON THE EMS CONTROL SYSTEM HAS BEEN INSTALLED AND THE HVAC SYSTEMS ARE READY TO BE BRANCHED ON LINE, THE DRG-C MUST INSURE THAT ALL THE HVAC SYSTEMS ARE OPERATING CORRECTLY AND PROVIDE ALL THE TIME OF THE SYSTEMS AS REQUIRED.
- THIS DRAWING IS QUANTITATIVE IN NATURE AND IS SUBJECT TO ANY INSTALLATION REQUIREMENTS REGARDING THE ENERGY MANAGEMENT CONTROL SYSTEM. THIS DRAWING IS NOT TO BE USED FOR QUANTIFICATION PURPOSES ONLY. DO NOT SCALE. THIS DRAWING IS GENERAL IN NATURE AND NOT ALL COMPONENTS SHOWN ARE REQUIRED FOR INSTALLATION. REFER TO THE SPECIFICATIONS FOR THE FULL LIST OF THE SYSTEMS AS REQUIRED.
- REFRIGERATION CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REFRIGERATION ISSUES REGARDING REFRIGERANT GASES, EVAPORATOR COILS, REFRIGERATION CONDENSERS, PRESSURE REGULATORS, COMPRESSOR RINGS, AND HIGH WATER RECLAIM. IT SHALL BE THE RESPONSIBILITY OF THE REFRIGERATION CONTRACTOR TO OBTAIN A FULL OPERATIONAL SYSTEM REFER TO LOCAL CODES FOR REFRIGERATION REPAIRS AND REPAIRS.
- LINE VOLTAGE EMS CONTROL WIRING BY DRG-C. ALL OTHER HIGH VOLTAGE WIRING SHALL BE BY THE GENERAL CONTRACTOR'S ELECTRICAL CONTRACTOR AND CONNECTED BY CPC. (SEE OTHER NOTES).
- REFER TO REFRIGERATION ISSUES FOR INFORMATION REGARDING FUTURE, WALK-IN COOLERS, FREEZERS, EVAPORATORS, CONDENSERS AND RECLAIM REQUIREMENTS.

**2 CONTROLS TAKEOFF**

**4**

**8 ENERGY MANAGEMENT NOTES**

**8 ENERGY MANAGEMENT NOTES**

THIS SHEET FOR REFERENCE ONLY  
SEE PLANS FOR REQUIREMENTS SPECIFIC TO THIS PROJECT