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MED TEMP LIQUID OVERFEED - SYSTEMS — REFRIGERANT 744 — FEED RATE: 2

CIRCUIT NUMBER	DESCRIPTION	EVAP MBH	SUPPLY TEMP (ºF)	DISCHARGE AIR (ºF)	EVAPORATORS	MOTORS	TXV	TSTAT	DEFROST	DEFROST TERMINATION	CONTROL VALVE	DEFROST VOLTAGE/PHASE	DEFROST AMPS	FIRST DEFROST HR	DEFROSTS PER DAY	DEFROST MINUTES	PANEL	DEFROST GROUP	ANTI-SWEAT AMPS (120V)	FAN VOLTAGE/PHASE	FAN AMPS	LIGHTING AMPS	SUCTION/RETURN	SUCTION/RETURN RISER	LIQUID/SUPPLY	ELECTRIC DEFROST GROUP IN USE BY HOUR OF THE DAY (0–23)
PH	CO2 Pump	10.2																								
LT CON	LT Condenser Load Unit 1	220.0																								
	MEDIUM TEMP LOOP 1 (MT1)		20																			STUB:	1 5/8		1 1/8	
	24 ft Beer	--	--	--	--	--		--	--	--	--	--	--	-	--	--			--	--	--	--	5/8	3/8	3/8	
2A	6RBLH-12 Beer	3.3	20	38		EC		E2	TO	TO	LLSV	--	--		2	30			1.0	120/1	0.7	0.8	1/2	3/8	3/8	
2B	6RBLH-12 Beer	3.3	20	38		EC		E2	TO	TO	LLSV	--	--		2	30			1.0	120/1	0.7	0.8	1/2	3/8	3/8	
	24 ft Beer	--	--	--	--	--		--	--	--	--	--	--	--	--	--			--	--	--	--	5/8	3/8	3/8	
3A	6RBLH-12 Beer	3.3	20	38		EC		E2	TO	TO	LLSV	--	--		2	30			1.0	120/1	0.7	0.8	1/2	3/8	3/8	
3B	6RBLH-12 Beer	3.3	20	38		EC		E2	TO	TO	LLSV	--	--		2	30			1.0	120/1	0.7	0.8	1/2	3/8	3/8	
14	Cooler, Bakery (8'x8'x10')	7.1	20	34	BEL0105BC6AMA (1)	EC		E2	TO	TO	LLSV	--	--		3	45			--	208/1	1.0	--	5/8	3/8	3/8	
17	Cooler, Dairy (455 sf)	28.7	20	34	BEL0190BC6AMA (2)	EC		E2	TO	TO	LLSV	--	--		3	45			--	208/1	3.0	--	7/8	1/2	5/8	
19	ORB-4 Dairy - Eggs	0.8	20	36		EC		E2	TO	TO	LLSV	--	--		4	30			0.9	120/1	0.2	0.2	1/2	3/8	3/8	
	24 ft Rear Load Dairy	--	--	--	--	--		--	--	--	--	--	--	--	--	--			--	--	--	--	5/8	3/8	3/8	
21A	ORBR-12 Dairy - Rear Load	3.5	20	36		EC		E2	TO	TO	LLSV	--	--		4	30			0.8	120/1	0.7	0.8	1/2	3/8	3/8	
21B	ORBR-12 Dairy - Rear Load	3.5	20	36		EC		E2	TO	TO	LLSV	--	--		4	30			0.8	120/1	0.7	0.8	1/2	3/8	3/8	
	32 ft Dairy	--	--	--	--	--		--	--	--	--	--	--	--	--	--			--	--	--	--	5/8	3/8	3/8	
22A	ORB-12 Dairy	2.4	20	36		EC		E2	TO	TO	LLSV	--	--		4	30			2.0	120/1	0.7	0.8	1/2	3/8	3/8	
22B	ORB-8 Dairy	1.6	20	36		EC		E2	TO	TO	LLSV	--	--		4	30			1.4	120/1	0.4	0.5	1/2	3/8	3/8	
22C	ORB-12 Dairy	2.4	20	36		EC		E2	TO	TO	LLSV	--	--		4	30			2.0	120/1	0.7	0.8	1/2	3/8	3/8	
23	ORB-8 Dairy	1.6	20	36		EC		E2	TO	TO	LLSV	--	--		4	30			1.4	120/1	0.4	0.5	1/2	3/8	3/8	
	28 ft Meat	--	--	--	--	--		--	--	--	--	--	--	--	--	--			--	--	--	--	5/8	3/8	3/8	
24A	ORB-8 Meat	1.7	20	34		EC		E2	TO	TO	LLSV	--	--		4	30			1.4	120/1	0.4	0.5	1/2	3/8	3/8	
24B	ORB-12 Meat	2.6	20	34		EC		E2	TO	TO	LLSV	--	--		4	30			2.0	120/1	0.7	0.8	1/2	3/8	3/8	
24C	ORB-8 Meat	1.7	20	34		EC		E2	TO	TO	LLSV	--	--		4	30			1.4	120/1	0.4	0.5	1/2	3/8	3/8	
26	Cooler, Deli Unprep (8'x10'x10')	9.0	20	34	BEL0125BC6AMA (1)	EC		E2	TO	TO	LLSV	--	--		3	45			--	208/1	1.0	--	5/8	3/8	1/2	
27	Cooler, Deli Prep (12'x12'x10')	12.0	20	34	BEL0155BC6AMA (1)	EC		E2	TO	TO	LLSV	--	--		3	45			--	208/1	1.5	--	5/8	3/8	1/2	
34	PDNUM-12 Service +22F (TOP)	4.3	20	30		EC		E2	TO	TO	LLSV	--	--		4	60			--	120/1	1.0	--	1/2	3/8	3/8	
35	PDNUM-12 SelfServ +22F (BOTTOM)	7.1	20	33		EC		E2	TO	TO	LLSV	--	--		4	60			1.6	120/1	0.9	2.8	5/8	3/8	3/8	NON-ELECTRIC (TIMED OFF)
36	O3UM-NRG-12 Meat	9.0	20	30		EC		E2	E	DT	LLSV	208/1	5.8	0	6	30	B	1	--	120/1	0.5	0.4	5/8	3/8	1/2	1 1 1 1 1 1
		112.7																								
	MEDIUM TEMP LOOP 2 (MT2)		20																			STUB:	1 3/8		7/8	
	Meat Work Room (594 sf)	--	--	--	--	--		--	--	--	--	--	--	--	--	--			--	--	--	--	1 1/8	7/8	7/8	
31A	Prep, Meat Work Room (297 sf)	41.6	20	55	BEV0180BC6AMA (1)	EC		E2	TO	TO	LLSV	--	--		3	45			--	208/1	1.3	--	7/8	5/8	5/8	
31B	Prep, Meat Work Room (297 sf)	41.6	20	55	BEV0180BC6AMA (1)	EC		E2	TO	TO	LLSV	--	--		3	45			--	208/1	1.3	--	7/8	5/8	5/8	NON-ELECTRIC (TIMED OFF)
	Seafood Prep (200 sf)	--	--	--	--	--		--	--	--	--	--	--	--	--	--			--	--	--	--	7/8	5/8	1/2	
32A	Prep, Seafood (100 sf)	16.8	20	50	BEV0080BC6AMA (1)	EC		E2	TO	TO	LLSV	--	--		3	45			--	208/1	0.4	--	5/8	1/2	1/2	
32B	Prep, Seafood (100 sf)	16.8	20	50	BEV0080BC6AMA (1)	EC		E2	TO	TO	LLSV	--	--		3	45			--	208/1	0.4	--	5/8	1/2	1/2	
		116.8																								
	MEDIUM TEMP LOOP 3 (MT3)		20																			STUB:	1 5/8		1 1/8	
28	Cooler, Chicken/Seafood (12'x10'x10')	9.8	20	28	BEL0180BC4EMA (1)	EC		E2	E	DT	LLSV	230/1	18.3	3	3	45	B	4	--	208/1	2.0	--	5/8	3/8	1/2	4 4 4
30	Cooler, Meat (12'x16'x10')	13.6	20	28	BEL0220BC4EMA (1)	EC		E2	E	DT	LLSV	230/1	22.8	4	3	45	B	5	--	208/1	2.5	--	5/8	3/8	1/2	5 5 5
	Deli Cheese - 12 ft + Wedges	--	--	--	--	--		--	--	--	--	--	--	--	--	--			--	--	--	--	5/8	3/8	1/2	
45A	GLDSSX243R 22º Wedge	2.3	20	38		EC		E2	TO	TO	LLSV	--	--		6	30			0.1	120/1	0.3	0.7	3/8	3/8	3/8	
45B	GLDSS643R	3.2	20	38		EC		E2	TO	TO	LLSV	--	--		6	30			0.3	120/1	0.6	0.7	1/2	3/8	3/8	
45C	GLDSS643R	3.2	20	38		EC		E2	TO	TO	LLSV	--	--		6	30			0.3	120/1	0.6	0.7	1/2	3/8	3/8	
45D	GLDSSX443R 45º Wedge	1.4	20	38		EC		E2	TO	TO	LLSV	--	--		6	30			0.0	120/1	0.3	0.7	3/8	3/8	3/8	
45E	GLDSSX443R 45º Wedge	1.4	20	38		EC		E2	TO	TO	LLSV	--	--		6	30			0.0	120/1	0.3	0.7	3/8	3/8	3/8	
	16 ft Deli	--	--		--	--		--	--	--	--	--	--	--	--	--			--	--	--	--	1/2	3/8	3/8	
46A	OSA-8 Deli	2.3	20	30		EC		E2	TO	TO	LLSV	--	--		2	45			0.7	120/1	0.5	0.8	3/8	3/8	3/8	
46B	OSA-8 Deli	2.3	20	30		EC		E2	TO	TO	LLSV	--	--		2	45			0.7	120/1	0.5	0.8	3/8	3/8	3/8	
47	ONSDM-NRG-4 Deli	4.8	20	31		EC		E2	TO	TO	LLSV	--	--		6	40			--	120/1	0.2	0.1	1/2	3/8	3/8	
	12 ft Deli Sandwiches	--	--	--	--	--		--	--	--	--	--	--	--	--	--			--	--	--	--	1/2	3/8	3/8	
48A	DP610R	2.7	20	38		EC		E2	TO	TO	LLSV	--	--		6	30			1.3	120/1	0.7	0.7	3/8	3/8	3/8	NON-ELECTRIC (TIMED OFF)
48B	DP58R	3.0	20	38		EC		E2	TO	TO	LLSV	--	--		6	30			0.6	120/1	0.7	0.7	3/8	3/8	3/8	
49	GHSS656R Chef's Selections	6.6	20	40		EC		E2	TO	TO	LLSV	--	--		6	25			0.4	120/1	0.9	0.7	5/8	3/8	3/8	
	24 ft Deli	--	--	--	--	--		--	--	--	--	--	--	--	--	--			--	--	--	--	7/8	5/8	5/8	
50A	ONSDMH-NRG-12 Deli	16.9	20	33		EC		E2	TO	TO	LLSV	--	--		6	40			--	120/1	0.7	0.8	7/8	1/2	1/2	
50B	ONSDMH-NRG-12 Deli	16.9	20	33		EC		E2	TO	TO	LLSV	--	--		6	40			--	120/1	0.7	0.8	7/8	1/2	1/2	
	24 ft Deli																						7/8	5/8	5/8	
51A	ONSDMH-NRG-12 Deli	16.9	20	33		EC		E2	TO	TO	LLSV	--	--		6	40			--	120/1	0.7	0.8	7/8	1/2	1/2	
51B	ONSDMH-NRG-12 Deli	16.9	20	33		EC		E2	TO	TO	LLSV	--	--		6	40			--	120/1	0.7	0.8	7/8	1/2	1/2	
	16 ft Deli																						7/8	1/2	1/2	
52A	ONSDMH-NRG-8 Deli	11.3	20	33		EC		E2	TO	TO	LLSV	--	--		6	40			--	120/1	0.5	0.6	5/8	3/8	1/2	
52B	ONSDMH-NRG-8 Deli	11.3	20	33		EC		E2	TO	TO	LLSV	--	--		6	40			--	120/1	0.5	0.6	5/8	3/8	1/2	
53	FC2DR.5969	4.6	20	38		EC		E2	TO	TO	LLSV	--	--		6	30			--	120/1	0.6	0.7	1/2	3/8	3/8	
		151.2																								
	MEDIUM TEMP LOOP 4 (MT4)		20																			STUB:	1 5/8		1 1/8	
	24 ft Meat	--	--	--	--	--		--	--	--	--	--	--	--	--	--			--	--	--	--	7/8	1/2	5/8	
37A	OHM-NRG-12	13.8	20	28		EC		E2	E	DT	LLSV	208/1	5.8	1	6	30	C	2	--	120/1	0.9	0.5	7/8	3/8	1/2	2 2 2 2 2
37B	OHM-NRG-12	13.8	20	28		EC		E2	E	DT	LLSV	208/1	5.8	1	6	30	C	2	--	120/1	0.9	0.5	7/8	3/8	1/2	2 2 2 2 2 2
	24 ft Meat	--	--	--	--	--		--	--	--	--	--	--	--	--	--			--	--	--	--	7/8	1/2	5/8	
38A	OHM-NRG-12	13.8	20	28		EC		E2	E	DT	LLSV	208/1	5.8	2	6	30	C	3	--	120/1	0.9	0.5	7/8	3/8	1/2	3 3 3 3 3 3
38B	OHM-NRG-12	13.8	20	28		EC		E2	E	DT	LLSV	208/1	5.8	2	6	30	C	3	--	120/1	0.9	0.5	7/8	3/8	1/2	3 3 3 3 3 3
	28 ft Produce	--	--	--	--	--		--	--	--	--	--	--	--	--	--			--	--	--	--	1/2	3/8	3/8	
39A	ORB-12 Produce	2.4	20	36		EC		E2	TO	TO	LLSV	--	--		4	30			2.0	120/1	0.7	0.8	1/2	3/8	3/8	
39B	ORB-8 Produce	1.6	20	36		EC		E2	TO	TO	LLSV	--	--		4	30			1.4	120/1	0.4	0.5	1/2	3/8	3/8	
39C	ORB-8 Produce	1.6	20	36		EC		E2	TO	TO	LLSV	--	--		4	30			1.4	120/1	0.4	[illegible]	1/2	3/8	3/8	
	20 ft Produce	--	--	--	--	--		--	--	--	--	--	--	--	--	--			--	--	--	--	1/2	3/8	3/8	
40A	ORB-8 Produce	1.6	20	36		EC		E2	TO	TO	LLSV	--	--		4	30			1.4	120/1	0.4	0.5	1/2	3/8	3/8	NON-ELECTRIC (TIMED OFF)
40B	ORB-12 Produce	2.4	20	36		EC		E2	TO	TO	LLSV	--	--		4	30			2.0	120/1	0.7	0.8	1/2	3/8	3/8	
	24 ft Produce	--	--	--	--	--		--	--	--	--	--	--	--	--	--			--	--	--	--	1 1/8	5/8	7/8	
41A	O5DM-NRG-12 Cut Produce	14.2	20	36		EC		E2	TO	TO	LLSV	--	--		6	42			--	120/1	0.7	1.1	7/8	1/2	1/2	
41B	O5DM-NRG-12 Cut Produce	14.2	20	36		EC		E2	TO	TO	LLSV	--	--		6	42			--	120/1	0.7	1.1	7/8	1/2	1/2	
41C	O5DM-NRG-12 Cut Produce	14.2	20	36		EC		E2	TO	TO	LLSV	--	--		6	42			--	120/1	0.7	1.1	7/8	1/2	1/2	
42	Cooler, Produce (A) (8'x14'x10')	9.5	20	36	BEL0105BC6AMA (1)	EC		E2	TO	TO	LLSV	--	--		3	45			--	208/1	1.0	--	5/8	3/8	1/2	
43	Cooler, Produce (B) (10'x16'x10')	12.3	20	36	BEL0125BC6AMA (1)	EC		E2	TO	TO	LLSV	--	--		3	45			--	208/1	1.0	--	5/8	3/8	1/2	
44	Prep, Produce (617 sf)	32.9	20	70	BEV0125BC6AMA (1)	EC		E2	TO	TO	LLSV	--	--		3	45			--	[illegible]	0.8	--	1 1/8	[illegible]	5/8	
		162.5																								
	Medium Temp Liquid Overfeed Total	543.1																								

MED TEMP DX - SYSTEMS — REFRIGERANT: 449A

CIRCUIT NUMBER	DESCRIPTION	EVAP MBH	SUPPLY TEMP (ºF)	DISCHARGE AIR (ºF)	EVAPORATORS	MOTORS	TXV	TSTAT	DEFROST	DEFROST TERMINATION	CONTROL VALVE	DEFROST VOLTAGE/PHASE	DEFROST AMPS	FIRST DEFROST HR	DEFROSTS PER DAY	DEFROST MINUTES	PANEL	DEFROST GROUP	ANTI-SWEAT AMPS	FAN VOLTAGE/PHASE	FAN AMPS	LIGHTING AMPS	SUCTION/RETURN	SUCTION/RETURN RISER	LIQUID/SUPPLY
101	PMC-50 (R-449A)	14.7	26			EC		E2	--	TO	[illegible]	--	--		--	--			--	--/--	--	--	1 1/8	7/8	1/2

UNIT 2 - COMPRESSOR SCHEDULE — REFRIGERANT: 449A — MOCP 1: 300 — MOCP 2: 400

SUCTION GROUP	COMPRESSOR NUMBER	BITZER COMPRESSOR MODEL	CAPACITY CONTROL	MBH	HEAT OF REJECTION (MBH)	EER	Kw	FLA (MOA)	lbs/hr	CONDENSING TEMP (ºF)	SAT SUCTION TEMP (ºF)	DISCHARGE TEMP (ºF)
2	1	4HE-18Y (449A)	CRII	158.6	225.0	8.1	19.5	81.2	2,452	115	15	217
2	2	4HE-18Y (449A)	Unloader	158.6	225.0	8.1	19.5	81.2	2,452	115	15	217
2	3	4HE-18Y (449A)	Std	158.6	225.0	8.1	19.5	81.2	2,452	115	15	217
2	4	4GE-23Y (449A)	Std	184.0	263.0	7.9	23.2	97.1	2,845	115	15	220
2	5	4GE-23Y (449A)	Std	184.0	263.0	7.9	23.2	97.1	2,845	115	15	220
				843.8	1,201.0	8.1	104.9		13,046			218
				64.7	1.4							

TOTALS

MBH	THR	RATIO	KW	MCA	LBS/HR	BtuH/lb	Disch (ºF)
844	1,201	1.4	104.9	511	13,046	64.7	219

Total KW shown is compressors ONLY

UNIT 2A: 208V, 3 PH — **264** A MCA (COMPRESSORS 1-3); **300** A MOPD

UNIT 2B: 208V, 3 PH — **308** A MCA (COMPRESSORS 4 & 5, CONTROL CIRCUIT, CONDENSERS 2 & 3); **400** A MOPD

CONTROLS: 208V, 1PH — 10 A MCA

SYSTEM TOTALS		
Suction Group #2	15	ºF SST
Required Capacity	773.3	MBH
Available Capacity	843.8	MBH
% Loaded	109.1%	
spare capacity	70.5	MBH
Water Reclaim (50% THR):	601	MBH
Space Reclaim (35% THR):	420	MBH

ABBREVIATION	DESCRIPTION
CCB	Dixell control in store
DS	Defrost Term. Sensor
DT	Defrost Term. T'stat
E	Electric
E2	CPC Einstein Control System
LLSV	Liquid Line Solenoid Valve
LT	Low Temp (Frozen Food)
MBH	Thousands of Btus per hour
MT	Medium Temp
RM	Rack Manufacturer
RIC	Refrigeration Contractor
TO	Time Off
THR	Total Heat of Rejection (MBH)
HW	Hot Water
Lbs/hr	Refrigerant pounds per hour
BtuH/lb	Btu/Hr per pound of refrig.

CONDENSING UNIT SCHEDULE — Refrigerant: 449A

ID	SERVES	Mfr	Model	COMP HP	CAPACITY (MBH)	DESIGN SST	DESIGN AMBIENT	Line Sizes: Liquid	Line Sizes: Suction	Net Wt (lbs)	Length	Width	Height	Volts	Phase	COMP [illegible]	COND FAN FLA	MCA	MOPD	EM[illegible]
CU-2	Unit 1	Bohn	BCH004SLCACZ (ZF13K4E)	--	20.6	0	100	1/2	1 1/8	317	30 1/4	43 7/8	29 1/4	208	3	11.9	[illegible]	20	[illegible]	[illegible]

Standard Condensing Unit Options
1. Adjustable Low Pressure Control
2. Air Defrost Timer
3. Fused Disconnect
4. Liquid Filter Drier, Sightglass, & Shutoff Valve
5. Liquid Line Solenoid Valve with Pumpdown Switch
6. Suction Accumulator
7. Suction Filter and Shutoff Valve

Notes
1. CU-2 is an emergency unit, and must be powered by standby (not life safety) generator equipment. Condensing Unit shall activate upon loss of power to Unit 2 or if the CO2 pressure vessel rises to a predetermined setpoint. Connect lines to SWEP heat exchanger mounted on Unit 1 liquid/vapor separator. Rack manufacturer shall design Unit 1 liquid/vapor seperator, heat exchanger, and piping such that CU-1 will prevent the pressure in Unit 1 liquid/vapor separator from reaching 625 psi.

DESUPERHEATER/CONDENSER SCHEDULE

TAG	SERVES	Mfr	Model	FPI	Refrigerant	Condenser Rejection/Unit (MBH)	Required (MBH)	Qty	CFM	Design TD	Actual TD	Motor Type	Volts	Ph	Total Amps/Unit	L	W	H	LBS
COND-1	UNIT 1	Bohn	DVT-003	10	R-744	[illegible]	--	1	[illegible]	[illegible]	--	Direct Drive	208	1	2.0	38	22	25	114
COND-2	UNIT 2	Bohn	BNK-D06-A051	10	R-449A	[illegible]	601	1	[illegible]	12.[illegible]	12.1	Direct Drive	208	3	39.6	165	88	49	2,210
COND-3	UNIT 2	Bohn	BNK-D06-A051	10	R-449A	62[illegible]	601	1	57,[illegible]	12.5	12.1	Direct Drive	208	3	39.6	165	88	49	2,210

Ambient Design Temperature (ºF): 100

Notes (all units UON)
1. With contactors for cycling control.
2. Install on roof steel.
3. Provide and install weatherproof control panel with factory-mounted door interlock disconnect switch.
4. Actual TD is for 100% compressor loading.
5. All fans are Rail-Mounted VSEC, 1140 RPM, [illegible] kW.

CONDENSER SCHEDULE - UNIT 1 (ON RACK)

SERVES	Mfr	Qty	Model	Required (MBH)	R744 Condensing Temp (ºF)
UNIT 1	SWEP	3	V400THx130	220	22

Notes
1. To be used with R744 and R449A refrigerant
2. To be mounted directly on rack frame
3. Control with electronic expansion valve

HEAT RECLAIM SCHEDULE

UNIT	USAGE	% THR	MAX MBH
1	WATER HEATING	50	601
2	SPACE HEATING	35	420

AHR PUMP SCHEDULE

UNIT	MANUFACTURER	MODEL	GPM	HEAD	EXPANSION TANK SIZE	RPM	HP	VOLTAGE	HZ	PHASE	MCA
AHR	ARMSTRONG	4360-2D	75	35'	7.4 GAL	1800	1 1/2	208/230	60	1	4.8

CO_2 PUMP SCHEDULE

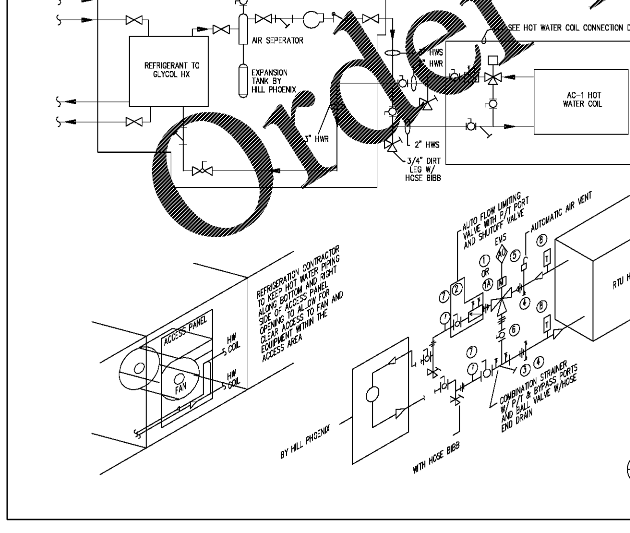
UNIT	MODEL	QTY	MAX GPM	HEAD	FLA	HP	REMARKS
1	CAM2/3 W/AGX 3.0	2	32.0	70'	13.0	4	PRIMARY/BACKUP

HEAT RECLAIM (HR) MBH VARIES DEPENDING ON REFRIGERANT FLOW, HEAT TRANSFER COEFFICIENTS, SECONDARY MASS FLOWS, AND OTHER VARIABLES.

HR COILS MUST BE SIZED FOR MAXIMUM 4 PSI DROP ON REFRIGERANT SIDE AT PEAK REFRIGERANT FLOW (SEE LBS/HR ON RACK SCHEDULE).

WATER HEAT RECLAIM:
HOT WATER RECLAIM IS FED UPSTREAM OF HVAC HEAT RECLAIM. COMPRESSOR DISCHARGE GAS IS DIVERTED ON DEMAND FOR HOT WATER (TEMPERATURE CONTROLLED THROUGH THE EMS) TO WATER HEAT RECLAIM TANKS.

HVAC HEAT RECLAIM:
DOWNSTREAM OF THE WATER RECLAIM TANKS, THE DISCHARGE GAS IS DIVERTED ON DEMAND FOR SPACE HEAT RECLAIM (CONTROLLED BY THE ENVIRONMENTAL CONTROLLER) BEFORE CONTINUING ON TO THE CONDENSER.



HEATING HOT WATER COIL OPERATIONS AND SPECIFICATIONS

THE HCU'S HEAT RECLAIM COIL SHALL PROVIDE HEAT FOR SPACE HEATING AND SUPPLY AIR (SA) REHEAT DURING DEHUMIDIFICATION OPERATIONS. HEAT REJECTED BY THE REFRIGERATION SYSTEM GENERATES THE HEAT NEEDED TO HEAT THE ZONE OR REHEAT THE DEHUMIDIFIED AIR. THE REFRIGERATION SYSTEM'S HEAT OF REJECTION IS CAPTURED BY A HEAT EXCHANGER AND TRANSPORTED TO THE HOT WATER COIL BY A GLYCOL SECONDARY HYDRONIC SYSTEM.

THE ZONE'S DRY BULB (DB) TEMPERATURE SENSOR SHALL SEND A HEATING SIGNAL TO THE EMS WHENEVER ANY ZONES TEMPERATURE DROPS BELOW 70F OR 74F WHEN OPERATING IN THE DEHUMIDIFICATION MODE. UPON A CALL FOR HEATING OR DEHUMIDIFICATION THE EMS SHALL ENABLE THE SECONDARY SYSTEM'S PUMP AND SIGNAL THE RTU CONTROLLER TO ACTIVATE THE HEATING OR REHEAT SEQUENCE. THE LOOP SHALL REMAIN OPERATIONAL AS LONG AS THERE IS A CALL FOR HEATING FROM ANY RTU. THE SECONDARY HYDRONIC SYSTEM'S PUMP SHALL STOP WHEN THE CALL FOR HEATING / REHEAT FROM ALL ZONE'S CEASES.

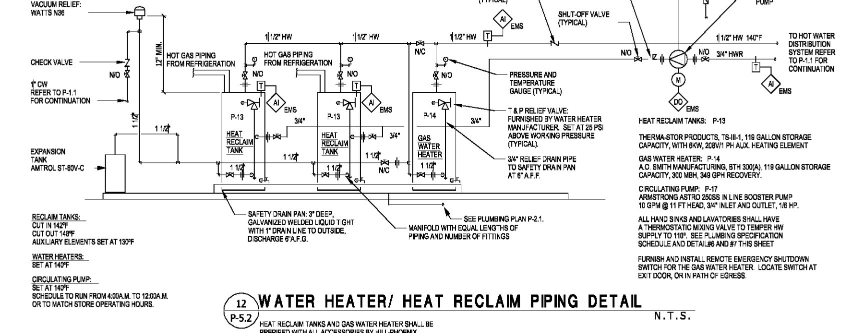
THE RTU'S CONTROLLER SHALL MAINTAIN ZONE'S HEATING SETPOINT (70+-0.5F) OR ZONE'S DEHUMIDIFICATION SETPOINT (74F) BY MODULATING THE HOT WATER COIL 3-WAY VALVE. WHEN THE ZONE'S HEATING REQUIREMENTS ARE MET THE VALVE WILL CLOSE.

1. AC-1 – PROVIDE MOTORIZE 2 IN. 3-WAY BALL TYPE CONTROL VALVE AND SPRING RETURN, PROPORTIONAL 24V ACTUATOR WITH NEMA 2 HOUSING AND LISTED INACCORDANCE WITH UL 873. "BELIMO B350 SERIES, 2 IN SS BALL AND STEM WITH BRASS BODY, CHARACTERIZED CONTROL VALVE (Cv= 57); WITH BELIMO AF24 US, 24VDC ACTUATOR" OR APPROVED EQUAL.
2. COMBINATION AUTOMATIC FLOW LIMITING VALVE AND BALL VALVE WITH UNION. THE VALVE'S FLOW CARTRIDGE SHALL ALLOW FOR REMOVAL WITHOUT BREAKING MAIN PIPING AND MAINTAIN FLOW WITHIN 5 PERCENT OF THE TOTAL FLOW. THE BALL VALVE SHALL HAVE A LARGE DIAMETER PLATED BALL WITH A FULL SIZE HANDLE AND A BLOWOUT PROOF STEM WITH A BRASS PACKING NUT. THE UNION SHALL HAVE AN EPDM "O"-RING. B&G MODEL #AC 2" NPT CIRCUIT SENTRY OR APPROVED EQUAL.
3. COMBINATION BALL VALVE AND WYE STRAINER WITH HOSE END DRAIN AND UNION. THE STRAINER SHALL HAVE A 20 MESH STAINLESS STEEL SCREEN AND A FORGE BRASS END DRAIN WITH A 3/4IN HOSE CONNECTION. THE BALL BALVE SHALL HAVE A LARGE DIAMETER PLATED BALL WITH A FULL SIZE STEEL HANDLE AND A BLOWOUT-PROOF STEM WITH A BRASS PACKING NUT. THE UNION SHALL HAVE AN EPDM "O"-RING. B&G MODEL #UBY OR APPROVED EQUAL.
4. BRASS UNION WITH PRESSURE / TEMPERATURE PORT AND AIR VENT PORT. B&G MODEL #UA OR APPROVED EQUAL.
5. CONTINUOUS AUTOMATIC AIR VENT WITH A BRASS BODY AND A 1/4IN NPT CONNECTION. B&G MODEL #97 OR APPROVED EQUAL.
6. ISOLATION BALL VALVE WITH UNION. THE BALL VALVE SHALL HAVE A LARGE DIAMETER PLATED BALL WITH A FULL SIZE HANDLE AND A BLOWOUT PROOF STEM WITH A BRASS PACKING NUT. THE UNION SHALL HAVE AN EPDM "O"-RING.
7. 4 1/2" SS STEM MOUNTED PRESSURE GAUGE, BRASS PRECISION GEAR & PISTON MOVEMENT, PUSH-IN LEXAN WINDOW, 0- 60 PSI RANGE, BRASS SOCKET AND 1/4" MALE NPT THREAD, ACCURACY 1%, 1/4" BRASS BODY PRESSURE TEST PLUG W/ NORDEL PLUG CORE. WEISS 4CTS-060 PRESSURE GAUGE; WEISS BP25-NR TEAT PLUG OR APPROVED EQUAL.
8. WEISS BIMETAL THERMOMETER WITH 3" DIAL, 304 SS CASE AND GLASS WINDOW, ACCURACY 1% OF READING, RANGE 0-250 F, AND EXTENSION NECK THERMOWELL WEISS 3BMS25 DIAL THERMOMETER WITH WEISS B25-759S THERMOWELL OR APPROVED EQUAL.

CONTROL LEGEND
- UNION
- UNION W/REDUCER
- GLASS THERMOMETERS
- THERMOMETER
- PRESSURE GUAGE
- BALL VALVE
- FLOW LIMITER
- STRAINER W/TEMPERATURE & PRESSURE PORTS
- UNION W/ AUTO AIR VENT TEMPERATURE& PRESSURE PORTS
- THREE WAY MOTORIZED CONTROL VALVE
- EMS ANALOG OUTPUT
- ROOM TEMPERATURE SENSOR

2 / R-2.2 — AC HOT WATER HYDRONIC SYSTEM DETAILS — N.T.S. — 06/30/2017

DETAIL FROM SHEET P-5.2 SHOWN HERE FOR REFERENCE ONLY - PE SEAL ON SHEET DOES NOT APPLY TO THIS DETAIL



RECLAIM TANKS:
CUT IN 142ºF
CUT OUT 148ºF
AUXILIARY ELEMENTS SET AT 130ºF

WATER HEATERS:
SET AT 140ºF

CIRCULATING PUMP:
SET AT 140ºF
SCHEDULE TO RUN FROM 4:00A.M. TO 12:00A.M. OR TO MATCH STORE OPERATING HOURS.

HEAT RECLAIM TANKS: P-13
THERMA-STOR PRODUCTS, TS-III-1, 119 GALLON STORAGE CAPACITY, WITH 6KW, 208V/1 PH AUX. HEATING ELEMENT

GAS WATER HEATER: P-14
A.O. SMITH MANUFACTURING, BTH 300(A), 119 GALLON STORAGE CAPACITY, 300 MBH, 349 GPH RECOVERY.

CIRCULATING PUMP: P-17
ARMSTRONG ASTRO 250SS IN LINE BOOSTER PUMP 10 GPM @ 11 FT HEAD, 3/4" INLET AND OUTLET, 1/6 HP.

ALL HAND SINKS AND LAVATORIES SHALL HAVE A THERMOSTATIC MIXING VALVE TO TEMPER HW SUPPLY TO 110º. SEE PLUMBING SPECIFICATION SCHEDULE AND DETAIL#6 AND #7 THIS SHEET

FURNISH AND INSTALL REMOTE EMERGENCY SHUTDOWN SWITCH FOR THE GAS WATER HEATER. LOCATE SWITCH AT EXIT DOOR, OR IN PATH OF EGRESS.

12 / P-5.2 — WATER HEATER/ HEAT RECLAIM PIPING DETAIL — N.T.S.

HEAT RECLAIM TANKS AND GAS WATER HEATER SHALL BE PREPIPED WITH ALL ACCESSORIES BY HILL-PHOENIX

NOTES:
AI - ANALOG INPUT
DO - DIGITAL OUTPUT
M - MOTOR
T - TEMPERATURE

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This item has been electronically signed and sealed by John Allen, PE on 07/16/2020 using Bluebeam and GlobalSign USB key.

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TO THE BEST OF MY KNOWLEDGE, THE SPECIFICATIONS AND PLANS SHOWN HEREIN COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES IN EFFECT AT THIS TIME.

PUBLIX PROTOTYPE BASIS OF DESIGN
20M
EXPANDED
RECEIVED: 09.14.18

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REFRIGERATION MEDIUM TEMP LEGEND
EAST COBB PUBLIX - #1745
EAST COBB CROSSING SHOPPING CENTER
ROSEWELL ROAD
MARIETTA, GA 30062

RELEASED FOR:	
BID	
PERMIT	07/16/20
CONSTR.	

REVISIONS:

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 044831 — JOHN T. ALLEN — 07/16/2020

JOHN T. ALLEN
ENGINEER No. 044831

R-2.2

Issue Date: 04-01-20
Project No.: 220006

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