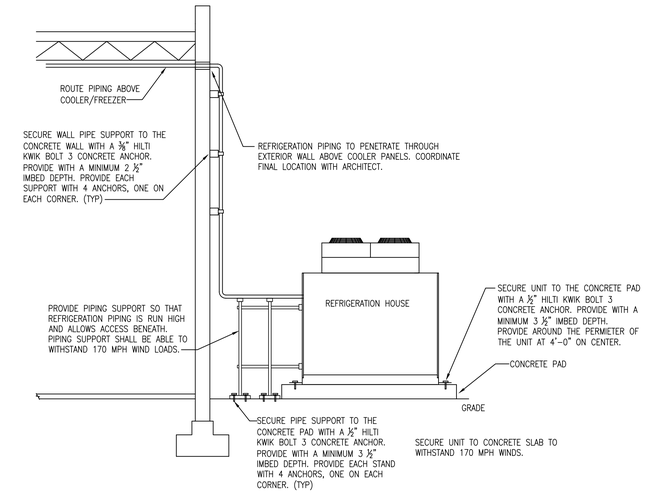
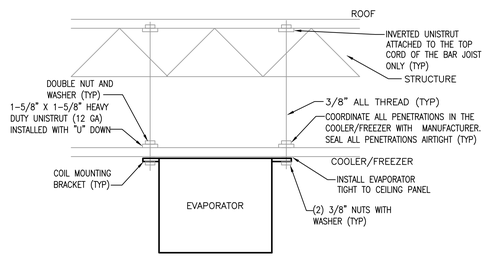
ABBREVIATIONS

A/C	ABOVE CEILING
AD	ACCESS DOOR
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AUTO	AUTOMATIC
AC	AIR CONDITIONING
AHU	AIR HANDLING UNIT
BAL	BALANCING
BDD	BACKDRAFT DAMPER
B/F	BELOW FLOOR
B/G	BELOW GRADE
BFLY	BUTTERFLY
BHP	BRAKE HORSEPOWER
CFM	CUBIC FEET PER MINUTE
CU	CONDENSING UNIT
CW	COLD WATER (DOMESTIC)
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
CWS	CONDENSER WATER SUPPLY
CWR	CONDENSER WATER RETURN
CON	CONCENTRIC
CO	CLEANOUT
COND	CONDENSATE
db	DRY BULB
DN	DOWN
DR	DRAIN
do	DITTO
dB	DECIBELS
DWG	DRAWING
EA	EACH
EAT	ENTERING AIR TEMPERATURE
ECC	ECCENTRIC
EF	EXHAUST FAN
EOD	EMERGENCY OVERFLOW DRAIN
ER	EXHAUST REGISTER
ESP	EXTERNAL STATIC PRESSURE
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
EFF	EFFICIENCY
F	FAHRENHEIT
FCO	FLOOR CLEANOUT
FCU	FAN COIL UNIT
FSD	FIRE/SMOKE DAMPER
FD	FIRE DAMPER OR FLOOR DRAIN
FL DR	FLOOR DRAIN (only)
FLR	FLOOR
FOB	FLAT ON BOTTOM
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOT	FLAT ON TOP
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FEET
G	GATE
GA	GAUGE
GPM	GALLONS PER MINUTE
GL	GLOBE
GCO	GRADE CLEANOUT
GLS	GLYCOL LOOP SUPPLY
GLR	GLYCOL LOOP RETURN
HD	HUB DRAIN
HP	HORSEPOWER
HTG	HEATING
HW	HOT WATER (DOMESTIC)
HWR	HOT WATER RETURN
HWRR	HOT WATER REVERSE RETURN
HWS	HOT WATER SUPPLY
Hz	HERTZ
ID	INSIDE DIMENSION
IN	INCHES
KW	KILOWATTS
LAT	LEAVING AIR TEMPERATURE
LB	POUNDS
LG	LINEAR GRILLE
LRG	LINEAR RETURN GRILLE
LWR	LOOP WATER RETURN
LWS	LOOP WATER SUPPLY
MIN	MINIMUM
MAX	MAXIMUM
MD	MANUAL DAMPER
MOD	MOTOR OPERATED DAMPER
MFR	MANUFACTURER
NC	NORMALLY CLOSED
NG	NATURAL GAS
NFWH	NON-FREEZE WALL HYDRANT
NO	NORMALLY OPEN
NOM	NOMINAL
OA	OUTSIDE AIR
OD	OUTSIDE DIMENSION
OBD	OPPOSED BLADE DAMPER
PIU	POWERED INDUCTION UNIT
PSI	POUNDS PER SQUARE INCH
RA	RETURN AIR
RAD	RADIUS
RAG	RETURN AIR GRILLE
RED	REDUCER
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION
RTU	ROOFTOP UNIT
RAR	RETURN AIR REGISTER
RS&L	REFRIGERANT SUCTION AND LIQUID
SP	STATIC PRESSURE
SPS	STATIC PRESSURE SENSOR
SA	SUPPLY AIR
SAN	SANITARY
SD	SMOKE DAMPER
SEN	SENSIBLE
SQ	SQUARE
SR	SUPPLY REGISTER
ST	STORM
SS	SPLIT SYSTEM
TEMP	TEMPERATURE
TG	TRANSFER GRILLE
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
V	VENT
VA	VALVE
VTR	VENT THRU ROOF
VAV	VARIABLE AIR VOLUME
wb	WET BULB
WC	WATER COLUMN
WHA	WATER HAMMER ARRESTOR
WT	WEIGHT
W	WASTE



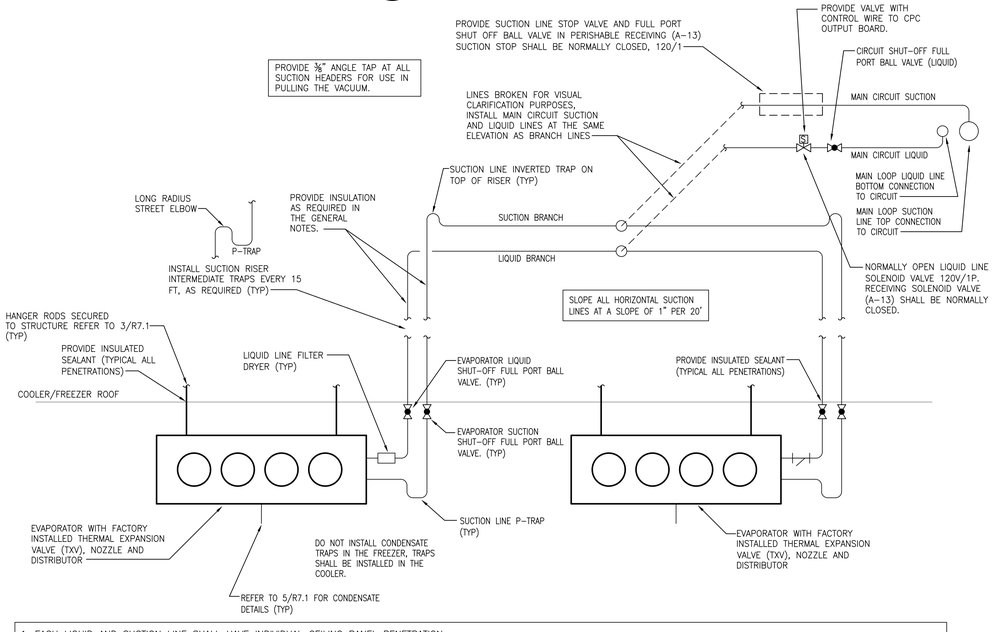
2 / R7.1 EXTERIOR DETAILS

SCHEMATIC ONLY



3 / R7.1 EVAPORATOR UNIT SUPPORT DETAIL

SCHEMATIC ONLY



1. EACH LIQUID AND SUCTION LINE SHALL HAVE INDIVIDUAL CEILING PANEL PENETRATION
2. SHUT-OFF BALL VALVES SHALL BE BRASS BODY FULL PORT BALL VALVES SELECTED FOR MINIMUM PRESSURE DROP, PROVIDE SUPERIOR OR EQUAL.
3. ALL INTERIOR EVAPORATOR PIPING SHALL BE INSTALLED AND PROTECTED IN SUCH A WAY AS TO AVOIDE THE RISK OF BEING DAMAGED BY FORKLIFT LOADING AND UNLOADING OPERATIONS.
4. VERIFY ALL VALVE TYPES (NORMALY OPEN, DRYERS/STRAINERS, ETC) WITH ARTIE BEST PRIOR TO ORDERING.

1 / R7.1 EVAPORATOR UNIT DETAIL

SCHEMATIC ONLY

RACK A SUCTION DX CIRCUIT SCHEDULE

I.D. TAG	AREA SERVED	REQ CAP PER CIRCUIT (MBH)	EVAPORATOR TEMPERATURE (°F)	DEFROST TYPE	DEFROST ELEC: DEFROST HEAT PER CIRCUIT (kW)	DEFROST ELEC: VOLTS/ PHASE	FAN ELEC: FAN POWER PER CIRCUIT (AMPS)	FAN ELEC: VOLTS/ PHASE	BASIS OF DESIGN	REMARKS
A1A-B	DAIRY/DELI	88.0	24	OFF CYCLE	---	---	9.6	460/1	(2) BOHN BEM0575MS7AMA	①
A2A-B	DAIRY/DELI	88.0	24	OFF CYCLE	---	---	9.6	460/1	(2) BOHN BEM0575MS7AMA	①
A3A-B	DAIRY/DELI	88.0	24	OFF CYCLE	---	---	9.6	460/1	(2) BOHN BEM0575MS7AMA	①
A4A-B	DAIRY/DELI	88.0	24	OFF CYCLE	---	---	9.6	460/1	(2) BOHN BEM0575MS7AMA	①
A5A-B	PRODUCE	88.0	24	OFF CYCLE	---	---	9.6	460/1	(2) BOHN BEM0575MS7AMA	①
A6A-B	PRODUCE	88.0	24	OFF CYCLE	---	---	9.6	460/1	(2) BOHN BEM0575MS7AMA	①
A7A-B	PRODUCE	88.0	24	OFF CYCLE	---	---	9.6	460/1	(2) BOHN BEM0575MS7AMA	①
A8A-B	PRODUCE	88.0	24	OFF CYCLE	---	---	9.6	460/1	(2) BOHN BEM0575MS7AMA	①
A9A-B	DAIRY/DELI	88.0	24	OFF CYCLE	---	---	9.6	460/1	(2) BOHN BEM0575MS7AMA	①
A10A-B	DAIRY/DELI	88.0	24	OFF CYCLE	---	---	9.6	460/1	(2) BOHN BEM0575MS7AMA	①
A11A	DAIRY/DELI	44.0	24	OFF CYCLE	---	---	9.6	460/1	BOHN BEM0575MS7AMA	①
A12A-B	RECEIVING DOCK	114.0	24	OFF CYCLE	---	---	4.4	460/3	(2) BOHN BEH0755DS6AMA	①
A13A-B-C-D	SEAFOOD	80.0	24	OFF CYCLE	---	---	5.0	230/1	(4) BOHN BEV0215BS6AMA	①
A14	SUBCOOL RACK B	126.0	35	NONE	---	---	---	---	SUB-COOLER	②

① REFRIGERATION CONTROL VALVES SHALL BE PROVIDED BY THE EQUIPMENT MANUFACTURER AND INSTALLED BY THE REFRIGERATION CONTRACTOR.
② PROVIDE SUBCOOLER WITH A 60% AND A 100% VALVE. SUCTION LINE SHALL BE PROVIDED WITH A MECHANICAL PRESSURE REGULATING VALVE (ORIT)

RACK A COMPRESSOR SCHEDULE

COMPRESSOR NUMBER	CAPACITY (MBH)	HP	VOLTS/ PHASE	RLA (Amps)	AMBIENT TEMP.(°F)	BASIS OF DESIGN	REMARKS
1	132.4	14	460/3	19.9	95	BITZER 4NES-14-2NU-2D	① ② ③ ④ ⑤
2	199.8	23	460/3	28.8	95	BITZER 4GE-23-2NU-1D	① ② ③ ④ ⑤
3	199.8	23	460/3	28.8	95	BITZER 4FE-23-2NU-0D	① ② ③ ④
4	219.5	24	460/3	35.5	95	BITZER 6JE-25-2NU-0D	① ② ③ ④
5	259.9	28	460/3	38.8	95	BITZER 6HE-28-2NU-0D	① ② ③ ④
6	299.6	32	460/3	42.3	95	BITZER 6GE-34-2NU-0D	① ② ③ ④
TOTAL CAP	1,438						

① SUCTION TEMP IS 22°F / CONDENSING TEMP IS 110°F R-407A
② UNIT SHALL HAVE A SINGLE POINT ELECTRICAL CONNECTION.
③ PROVIDE WITH AN OIL FLOAT.
④ PROVIDE MARKINGS ON COMPRESSOR HEADS TO INDICATE THE REFRIGERANT TYPE.
⑤ PROVIDE COMPRESSOR 1 WITH A VARIABLE UNLOADER AND COMPRESSOR 2 WITH 1 UNLOADER.

RACK A & B REFRIGERATION UNIT NOTES:

REFRIGERATION PARATEMP UNITS SHALL SHIP AS A COMPLETE PACKAGE WITH ALL CONDENSER PIPING, COMPRESSOR PIPING, ETC.

COMPRESSORS SHALL NOT BE PROVIDED WITH VFDS.

SMART COMPRESSORS SHALL NOT BE USED.

REFRIGERATION PARATEMP UNITS SHALL BE PROVIDED WITH THERMOSTATIC EXPANSION VALVES AND NOT ELECTRONIC EXPANSION VALVES.

MASTER SOLENOID VALVES SHALL BE NORMALLY OPEN.

THE SPLIT VALVES AND THE SURGE VALVES SHALL BE SOLENOID VALVES.

RACK A CONDENSER SCHEDULE

QUANTITY	CAPACITY (MBH)	NUM OF FANS	RPM	VOLTS/ PHASE	FINS PER INCH	AMBIENT TEMP.(°F)	BASIS OF DESIGN	REMARKS
1	1,735	14	1,030	460/3	10	95	BOHN BNH-D14-A122	① ②

① REFRIGERATION HOUSE SHALL HAVE A SINGLE POINT ELECTRICAL CONNECTION.
② PROVIDE CONDENSER WITH BOHNGUARD.

RACK B SUCTION DX CIRCUIT SCHEDULE

I.D. TAG	AREA SERVED	REQ CAP PER CIRCUIT (MBH)	EVAPORATOR TEMPERATURE (°F)	DEFROST TYPE	DEFROST ELEC: DEFROST HEAT PER CIRCUIT (AMPS)	DEFROST ELEC: VOLTS/ PHASE	FAN ELEC: FAN POWER PER CIRCUIT (AMPS)	FAN ELEC: VOLTS/ PHASE	BASIS OF DESIGN	REMARKS
SUCTION GROUP B1										
B1A-B	FREEZER	97.4	-15	ELEC	42.0	460/3	4.4 AMPS	460/3	(2) BOHN BEH0565DS4EMA	①③
B2A-B	FREEZER	97.4	-15	ELEC	42.0	460/3	4.4 AMPS	460/3	(2) BOHN BEH0565DS4EMA	①③
B3A-B	FREEZER	97.4	-15	ELEC	42.0	460/3	4.4 AMPS	460/3	(2) BOHN BEH0565DS4EMA	①③
B4A-B	FREEZER	97.4	-15	ELEC	42.0	460/3	4.4 AMPS	460/3	(2) BOHN BEH0565DS4EMA	①③
B5A-B	FREEZER	97.4	-15	ELEC	42.0	460/3	4.4 AMPS	460/3	(2) BOHN BEH0565DS4EMA	①③
B6A	FREEZER	48.7	-15	ELEC	21.0	460/3	2.2 AMPS	460/3	BOHN BEH0565DS4EMA	①③
B7A-B-C	SHRIMP BOX	25.8	-15	ELEC	26.1	208/1	3.8 AMPS	230/1	(3) BOHN BEC0120BS6EMA	①③
B8	ICE FLAKER	17.05	-5	NONE	---	---	---	---	ICE FLAKER BY OTHERS	②
SUBCOOLED LIQUID: 50°F										

① REFRIGERATION CONTROL VALVES SHALL BE PROVIDED BY THE EQUIPMENT MANUFACTURER AND INSTALLED BY THE REFRIGERATION CONTRACTOR.
② ALL VALVES REQUIRED FOR THE ICE MAKER SHALL BE PROVIDED TO THE ICE MAKER BY THE ICE MAKER MANUFACTURER.
③ PROVIDE EVAP WITH THREE (3) CONTROL POINTS: CONNECTION FOR FAN DELAY, CONNECTION FOR DEFROST HIGH LIMIT, AND CONNECTION FOR DEFROST TERMINATION.

RACK B COMPRESSOR SCHEDULE

COMPRESSOR NUMBER	CAPACITY (MBH)	HP	VOLTS/ PHASE	RLA (Amps)	AMBIENT TEMP.(°F)	BASIS OF DESIGN	REMARKS
SUCTION GROUP B1							
1	56.1	7	480/3	19.9	95	BITZER 4NES-14-2NU-2D	① ② ③ ④ ⑤
2	92.0	12	480/3	28.8	95	BITZER 4GE-23-2NU-1D	① ② ③ ④ ⑥
3	113.8	15	480/3	38.8	95	BITZER 6HE-28-2NU-0D	① ② ③ ④
4	113.8	15	480/3	38.8	95	BITZER 6HE-28-2NU-0D	① ② ③ ④
5	113.8	15	480/3	38.8	95	BITZER 6HE-28-2NU-0D	① ② ③ ④
6	131.5	18	480/3	42.3	95	BITZER 6GE-34-2NU-0D	① ② ③ ④
TOTAL CAP	688.9						

① SUCTION TEMP IS -17°F / CONDENSING TEMP IS 110°F R-407A
② UNIT SHALL HAVE A SINGLE POINT ELECTRICAL CONNECTION.
③ PROVIDE WITH AN OIL FLOAT.
④ PROVIDE MARKINGS ON COMPRESSOR HEADS TO INDICATE THE REFRIGERANT TYPE.
⑤ PROVIDE COMPRESSOR 1 WITH A VARIABLE UNLOADER.
⑥ PROVIDE COMPRESSOR 2 WITH 1 UNLOADER.

RACK B CONDENSER SCHEDULE

QUANTITY	CAPACITY (MBH)	NUM OF FANS	RPM	VOLTS/ PHASE	FINS PER INCH	AMBIENT TEMP.(°F)	BASIS OF DESIGN	REMARKS
1	751.3	10	1,030	460/3	10	95	BOHN BNH-D10-A088	① ②

① REFRIGERATION HOUSE SHALL HAVE A SINGLE POINT ELECTRICAL CONNECTION.
② PROVIDE CONDENSER WITH BOHNGUARD.

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ABBREVIATIONS, NOTES AND SCHEDULES-REFRIGERATION

DATE: 9/10/2020

JOB NO. 19230

R7.1

SHEET NO.