

three inches = one foot
one and one-half inch = one foot
one inch = one foot
three-quarters inch = one foot
one-half inch = one foot
three-eighths inch = one foot
one-quarter inch = one foot
one-eighth inch = one foot

PUMP SCHEDULE

MARK	1-P-1	1-P-2	1-P-3	1-P-4	1-P-5	1-P-6	1-P-7	1-P-1A	1-P-2A	1-P-3A	1-P-4A	1-P-5A	1-P-6A	9-P-1	9-P-2	9-P-3	9-P-4	9-P-5	9-P-7	9-P-8	20-P-1	20-P-2	20-P-3	20-P-4	20-P-5		
LOCATION	BLDG. 1 ADD.	BLDG. 1 ADD.	BLDG. 1 ADD.	BLDG. 1 ADD.	BLDG. 1 ADD.	BLDG. 1 ADD.	BLDG. 1 ADD.	BLDG. 1 3RD FL.	BLDG. 1 3RD FL.	BLDG. 1 3RD FL.	BLDG. 1 3RD FL.	BLDG. 1 3RD FL.	BLDG. 1 3RD FL.	CHILLER PLANT	CHILLER PLANT	CHILLER PLANT	CHILLER PLANT	CHILLER PLANT	CHILLER PLANT	MECH. ROOM	MECH. ROOM	MECH. ROOM	A-21	MECH. ROOM			
SERVICE	CHILLED WATER	CHILLED WATER	HEATING HOT WATER	HEATING HOT WATER	PREHEAT	PREHEAT	ENERGY REC.	CHILLED WATER	CHILLED WATER	REHEAT	REHEAT	HEAT RECOVERY	HEAT RECOVERY	CHILLED WATER	CHILLED WATER	CHILLED WATER	CONDENSER WATER	CONDENSER WATER	SEC. CHILLED WATER	CHILLED WATER	CHILLED WATER	HEATING HOT WATER	HEATING HOT WATER	HEATING HOT WATER	HEAT RECOVERY		
PUMP DATA																											
MANUFACTURER			AURORA	AURORA				ARMSTRONG	ARMSTRONG	ARMSTRONG	ARMSTRONG	ARMSTRONG	ARMSTRONG	AURORA	AURORA	AURORA	BELL & GOSSETT	BELL & GOSSETT	AURORA	AURORA	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSETT		
SERIES								4030	4030	4030	4030	4038	4038				VIP	VIP									
MODEL			NC911428	86-14822-1				ES	ES	ES	ES	IL	IL	344A-BF	344A-BF	344A-BF	100HHC	100HHC			SERIES 80	SERIES 80	SERIES 80	SERIES 90	SERIES 90		
TYPE			344A-BF	344A-BF				ES	ES	ES	ES	IL	IL	344A-BF	344A-BF	344A-BF	F	F	344A-BF	344A-BF	IN-LINE	IN-LINE	IN-LINE	IN-LINE	IN-LINE		
SIZE			1.5"x2"x9b	1.5"x2"x9b				3"x2"x10"	3"x2"x10"	3"x1.5"x8"	3"x1.5"x8"	2"x2"x10"	2"x2"x10"	4"x5"x9B	4"x5"x9B	4"x5"x9B	10	10	4"x5"x11"	4"x5"x11"	1.5"x1.5"x9.5"	2.5"x2.5"x7"	2.5"x2.5"x7"	1-1/2"ZA	1-1/2"ZA		
SERIAL NO.														86-14825-2	86-14825-1	86-14825-3			86-14827-1	86-14827-2							
FLOW (GPM)	184	184	80	80	60	60	15	150	150	68	68	75	75	630	480	480	1170	1170	510	510	82	104	104	19	19		
HEAD (FT)	82	82	80	80	60	60	35	72	72	55	55	70	70	40	40	40	82	82	83	83	60	45	45	30	30		
IMPELLER SIZE (IN)																					6	6	7	5.625	5.625		
NO. STAGES	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	1	1	1	1	1	1	1		
SPEED (RPM)	1,750	1,750	1,760	1,760	1,750	1,750	1,750	1,800	1,800	1,800	1,800	1,800	1,800	1,750	1,750	1,750	1,770	1,770	1,750	1,750	1,750	1,750	1,750	1,750	1,750		
EFFICIENCY (%)	75	75			82	82	31	75	75	64	64	54	54	75	75	75	79	79	76	76	81	87.8	87.8	42.7	42.7		
MOTOR DATA																											
MANUFACTURER														U.S. ELECTRIC	U.S. ELECTRIC	U.S. ELECTRIC			U.S. ELECTRIC	U.S. ELECTRIC	-	-	-	-	-		
HORSEPOWER	10	10	5	5	2	2	1	7.5	7.5	3	3	5	5	10	7.5	7.5	324T	324T	25	25	3	3	0.75	0.75	0.75		
FRAME SIZE																											
SPEED (RPM)	1,750	1,750	1,760	1,760	1,750	1,750	1,750	1,800	1,800	1,800	1,800	1,800	1,800	1,740	1,740	1,740	1,770	1,770	1,760	1,760	1,750	1,750	1,750	1,750	1,750		
VOLTS	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	460	208	208	208	208	208		
PHASE	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
HERTZ	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60		
FULL LOAD AMPS																	50.8	50.8	32.5	32.5							
EFFICIENCY (%)																					89.5	89.5	89.5				
POWER FACTOR (%)																					90	90	90				
SERVICE FACTOR	1.15	1.15	1.15	1.15	1.15	1.15	1.15							1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15		
WEIGHT (LB)																	1,700	1,700									
REMARKS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
REMARKS	1. EXISTING PUMP TO REMAIN. 2. EXISTING PUMP TO BE REMOVED. 3. PROVIDE WITH MECHANICAL SEALS. 4. PROVIDE WITH SUCTION BASKET STRAINER. 5. PROVIDE WITH PREMIUM EFFICIENCY INVERTOR DUTY MOTOR. 6. PROVIDE WITH BASE SOLE PLATE. 7. PUMP SHALL BE CONTROLLED BY A VARIABLE FREQUENCY DRIVE, SEE DIVISION 16 PLANS AND SPECIFICATIONS. 8. OR APPROVED EQUAL.																										

CENTRIFUGAL CHILLER SCHEDULE

MARK	9-CCU-1	
MANUFACTURER	MULTISTACK	
MODEL NO.	MS0332FN1M2W2H0CC22FL	
SERIAL NO.		
IN SERVICE DATE	2013	
COMPRESSOR DATA		
NO. OF COMPRESSORS	2	
COMPRESSOR TYPE	CENTRIFUGAL	
BEARING TYPE	MAGNETIC	
COMPRESSOR MODEL NO.	TUROBCOR TT-400 & TT-500	
COMPRESSOR RATED LOAD AMPS	90 & 109	
REFRIGERANT		
REFRIGERANT TYPE	R-134A	
REFRIGERANT CHARGE (LB)	770	
REFRIGERANT PHASEOUT DATE	N/A	
PURGE	N/A	
DRIVE	DIRECT	
NOMINAL CAPACITY (TONS)	275	
INPUT POWER (KW)	129.6	
EFFICIENCY (KW/TON)	0.471	
NPLV EFFICIENCY (KW/TON)	0.329	
EVAPORATOR		
ENTERING WATER TEMPERATURE (°F)	54	
LEAVING WATER TEMPERATURE (°F)	44	
DESIGN FLOW (GPM)	660	
MINIMUM FLOW (GPM)	225	
PROPYLENE GLYCOL CONC. (%)	0	
FOULING FACTOR	0.0001	
WPD (FT)	15.5	
NO. PASSES	2	
PIPE SIZE (IN)	8	
CONDENSER		
ENTERING WATER TEMPERATURE (°F)	75	
LEAVING WATER TEMPERATURE (°F)	85	
DESIGN FLOW (GPM)	750	
MINIMUM FLOW (GPM)	275	
FOULING FACTOR	0.00025	
WPD (FT)	13.2	
NO. PASSES	2	
PIPE SIZE (IN)	8	
ELECTRICAL DATA		
VOLTS	460	
PHASE	3	
HERTZ	60	
RATED LOAD AMPS		
MINIMUM CIRCUIT AMPACITY	227	
MAXIMUM OVERCURRENT PROTECTION	300	
SHIPPING WEIGHT (LB)	8,383	
OPERATING WEIGHT (LB)	9,186	
REMARKS:	1,2,3,4,5,6,7,8,9	
1. PROVIDE AND INSTALL DUAL COMPRESSOR CHILLER.		
2. CHILLER SHALL HAVE 2 COMPRESSORS.		
3. PROVIDE WITH REFRIGERANT SAFETY RELIEF VALVE.		
4. PROVIDE WITH IFM EFFECTOR 300 THERMAL DISPERSION WATER FLOW SWITCHES ON THE EVAPORATOR AND CONDENSER.		
5. PROVIDE WITH NEOPRENE VIBRATION ISOLATION PADS.		
6. PROVIDE WITH EPOXY COATED WATER BOXES AND TUBE SHEETS.		
7. PROVIDE WITH MICROPROCESSOR BASED CONTROLS AND TOUCHSCREEN HMI.		
8. PROVIDE WITH BACNET INTERFACE.		
9. THE INDICATED MANUFACTURER AND ASSOCIATED MODEL NO. AND TYPE OF EQUIPMENT WERE USED FOR DESIGN PURPOSES. OTHER MANUFACTURERS AND MODELS OF EQUIPMENT MEETING THE QUALITY, PERFORMANCE AND SALIENT CHARACTERISTIC REQUIREMENTS OF THE PLANS AND SPECIFICATIONS IN THE OPINION OF THE ENGINEER OF RECORD SHALL BE ACCEPTABLE.		
10.		

NEW PUMP SCHEDULE

MARK	9-P-1	9-P-2	9-P-3	9-P-7	9-P-8	9-P-9	9-P-10
LOCATION	CHILLER PLANT	CHILLER PLANT	CHILLER PLANT	CHILLER PLANT	CHILLER PLANT	CHILLER PLANT	CHILLER PLANT
SERVICE	PRIM. CHILLED WTR.	PRIM. CHILLED WTR.	PRIM. CHILLED WTR.	SEC. CHILLED WATER	SEC. CHILLED WATER	SEC. CHILLED WATER	CONDENSER WATER
PUMP DATA							
MANUFACTURER	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSETT
SERIES							
MODEL	1510-5E	1510-5E	1510-5E	1510-4GB	1510-4GB	1510-4GB	1531-2E
TYPE	ES	ES	ES	ES	ES	ES	ES
SIZE	5"x6"x11"	5"x6"x11"	5"x6"x11"	4"x5"x13.5"	4"x5"x13.5"	4"x5"x13.5"	2"x3"x11"
SERIAL NO.							
FLOW (GPM)	660	660	660	660	660	660	208
HEAD (FT)	44	44	44	140	140	140	100
IMPELLER SIZE (IN)	10.875	10.875	10.875	12.375	12.375	12.375	10.375
NO. STAGES	1	1	1	1	1	1	1
SPEED (RPM)	1,150	1,150	1,150	1,750	1,750	1,750	1,750
EFFICIENCY (%)	85.7	85.7	85.7	79.5	79.5	79.5	69.33
SUCTION DIFFUSER DATA							
MODEL	GG-3	GG-3	GG-3	GF-3	GF-3	GF-3	-
PRESSURE DROP (FT)	1.33	1.33	1.33	2.85	2.85	2.85	-
MOTOR DATA							
MANUFACTURER	BALDOR	BALDOR	BALDOR	BALDOR	BALDOR	BALDOR	BALDOR
HORSEPOWER	10	10	10	40	40	40	10
FRAME SIZE	256T	256T	256T	324T	324T	324T	215JM
SPEED (RPM)	1,150	1,150	1,150	1,750	1,750	1,750	1,750
VOLTS	480	480	480	480	480	480	480
PHASE	3	3	3	3	3	3	3
HERTZ	60	60	60	60	60	60	60
FULL LOAD AMPS	13.1	13.1	13.1	50.8	50.8	50.8	12.2
EFFICIENCY (%)	91	91	91	94.5	94.5	94.5	91.7
POWER FACTOR (%)	78.5	78.5	78.5	78	78	78	83.5
SERVICE FACTOR	1.15	1.15	1.15	1.15	1.15	1.15	1.15
WEIGHT (LB)	605	605	605	940	940	940	330
BID ITEM	BASE BID	DED. ALT. BID NO. 1	DED. ALT. BID NO. 1	DED. ALT. BID NO. 3	DED. ALT. BID NO. 2	DED. ALT. BID NO. 2	BASE BID
REMARKS:	1,2,3,4,5,6,7,8	1,2,3,4,5,6,7,8	1,2,3,4,5,6,7,8	1,2,3,4,5,6,7,8	1,2,3,4,5,6,7,8	1,2,3,4,5,6,7,8	1,2,3,4,5,6,7,8
1. NEW PUMP TO BE PROVIDED AND INSTALLED.							
2. PROVIDE WITH WELDED STRUCTURAL C-CHANNEL BASE.							
3. PROVIDE WITH MECHANICAL SEALS.							
4. PROVIDE WITH SUCTION DIFFUSER.							
5. PROVIDE WITH PREMIUM EFFICIENCY INVERTOR DUTY MOTOR.							
6. PROVIDE WITH MOTOR SHAFT GROUNDING KIT.							
7. PUMP SHALL BE CONTROLLED BY A VARIABLE FREQUENCY DRIVE, SEE DIVISION 16 PLANS AND SPECIFICATIONS.							
8. THE INDICATED MANUFACTURER AND ASSOCIATED MODEL NO. AND TYPE OF EQUIPMENT WERE USED FOR DESIGN PURPOSES. OTHER MANUFACTURERS AND MODELS OF EQUIPMENT MEETING THE QUALITY, PERFORMANCE AND SALIENT CHARACTERISTIC REQUIREMENTS OF THE PLANS AND SPECIFICATIONS IN THE OPINION OF THE ENGINEER OF RECORD SHALL BE ACCEPTABLE.							
9.							

SUMP PUMP SCHEDULE

MARK	LOCATION	MFR.	MODEL NO.	TYPE	SERVICE	FLOW (GPM)	HEAD (FT)	PUMP SPEED (RPM)	MOTOR SIZE (HP)	ELECTRICAL CHARACTERISTICS	REMARKS
SP-1	CONDENSER WATER SUMP	ZOELLER	4404	SIMPLEX	CONDENSER WATER	60	30		2	460 3 60 5.2	1
REMARKS:											
1. EXISTING SUMP PUMP TO REMAIN.											

ABSORPTION CHILLER SCHEDULE

MARK	9-ACU-1	
MANUFACTURER	YORK	
MODEL NO.	ST-143C-46-C-S-C	
SERIAL NO.	GNQM 603430	
CAPACITY (TONS)	200	
EVAPORATOR		
ENTERING WATER TEMP. (°F)	54	
LEAVING WATER TEMP. (°F)	44	
WATER FLOW (GPM)	480	
MAX. WATER PRES. DROP (FT)	17.9	
FOULING FACTOR	0.00025	
CONDENSER/ABSORBER		
ENTERING WATER TEMP. (°F)	80	
LEAVING WATER TEMP. (°F)	90	
WATER FLOW (GPM)	894	
MAX. WATER PRES. DROP (FT)	11.1	
FOULING FACTOR	0.00025	
STEAM		
INLET PRESSURE (PSIG)	100	
FLOW RATE (LBS/HR)	1,900	
EFFICIENCY (LBS/TON-HR)		
ELECTRICAL CHARACTERISTICS		
VOLTS	460	
PHASE	3	
HERTZ	60	
FULL LOAD AMPS	15.8	
MIN. CIRCUIT AMPACITY		
MAX. OVERCURRENT PROT.		
DIMENSIONAL DATA		
OVERALL LENGTH (IN)		
OVERALL WIDTH (IN)		
OVERALL HEIGHT (IN)		
OPERATING WEIGHT (LB)		
REMARKS	1	
REMARKS:		
1. EXISTING ABSORPTION CHILLER TO REMAIN.		