

HIGH EFFICIENCY BOILER SCHEDULE

UNIT	LOCATION	MFG	MODEL	BOILER CAPACITY					GAS PRESSURE		WATER CONTENT (GAL.)	FLOW MIN (GPM)	FLOW (GPM)	PRESS. DROP (FTHD)	WATER TEMP DROP	PIPING CONNECTIONS			PRESSURE RATINGS		VENT CONNECTIONS		ELECTRICAL			DIMENSIONS			NOTES	
				INPUT (MBH)	OUTPUT (MBH)	BOILER EFF	FUEL	TURNDOWN RATIO	MIN (W/C)	MAX (W/C)						ASME WORKING (PSIG)	SAFETY RELIEF VALVE (PSIG)	FLUE (IN)	SEALED COMBUSTION (IN)	V/P/H	FLA	MOCP	DEPTH (IN)	WIDTH (IN)	HEIGHT (IN)	WGT. (LB)				
B-1	MECH RM	AERCO	BENCHMARK 2000	2000	1900	98%	NG	20:1	4	14	40	25	100	9.6	40	4.0	4.0	2.0	160	75.0	8.0	8.0	120/1/60	16.0	20.0	58.4	28	78	1760	1,2,3,4,5,6,7,8,9,10,11,12,13
B-2	MECH RM	AERCO	BENCHMARK 2000	2000	1900	98%	NG	20:1	4	14	40	25	100	6.9	40	4.0	4.0	2.0	160	75.0	8.0	8.0	120/1/60	16.0	20.0	58.4	28	78	1760	1,2,3,4,5,6,7,8,9,10,11,12,13
B-3	MECH RM	AERCO	BENCHMARK 2000	2000	1900	98%	NG	20:1	4	14	40	25	100	6.9	40	4.0	4.0	2.0	160	75.0	8.0	8.0	120/1/60	16.0	20.0	58.4	28	78	1760	1,2,3,4,5,6,7,8,9,10,11,12,13

NOTES:

- BOILERS SHALL BE CONNECTED TO POWER SYSTEM CONNECTED TO EMERGENCY GENERATOR
- UNIT SHALL COMPLY WITH ALL CODE AND INSURANCE REQUIREMENTS (E-GAP (OLD IR), FM, NFPA 85, CSD-1). REQUIREMENTS CAN BE LESSENE WITH DOCUMENTATION FROM INSURANCE COMPANY.
- UNIT SHALL BE CONFIGURED FOR SEAL COMBUSTION OPERATION WITH AL29-4C COMBUSTION FLUE AND TYPE-B INTAKE FLUE (WITH EXT. INSULATION).
- MANIFOLD CONDENSATE FROM EACH BOILER INTO A SINGLE 1" COPPER PIPE AND ROUTE TO NEAREST FLOOR DRAIN VIA MFG PROVIDED CONDENSATE COLLECTOR.
- PROVIDE BOILER SYSTEM WITH MFG. PROVIDED MANAGEMENT SYSTEM TO CONTROL OPERATION OF BOILERS. CONNECT TO ATC SYSTEM.
- BOILER MUST BE CAPABLE OF OPERATING WITH A 40 DEG RETURN WATER TEMPERATURE WITHOUT DAMAGE DUE TO THERMAL SHOCK.
- INSTALL ON A MINIMUM 6" HIGH CONCRETE PAD.
- LOCATE OUTDOOR TEMPERATURE SENSOR OUT OF DIRECT SUNLIGHT AND AWAY FROM ANY HEAT SOURCE.
- PIPE OVERFLOW TO NEAREST FLOOR DRAIN. ROUTE AS NOT TO CREATE A TRIPPING HAZARD.
- GAS TRAIN TO INCLUDE LOCKUP REGULATOR.
- MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR VENTING ALL GAS TRAINS AND VALVES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR FILING NJDEP REQUIRED STACK PERMITS. SUBMIT COPY AND RESPONSE TO ENGINEER/OWNER FOR REVIEW.
- BOILER SHALL INCLUDE 10-YR WARRANTY ON PRESSURE VESSEL/HEAT EXCHANGER AND 2-YR ON CONTROL PANEL.

DUCTLESS SPLIT SYSTEM SCHEDULE

UNIT	SERVICE	MFG	MODEL		TYPE	AIRFLOW		Dx COOLING CAPACITIES				HEATING CAPACITIES				INDOOR UNIT ELECT			OUTDOOR UNIT ELECT			INDOOR UNIT DATA				OUTDOOR DATA			NOTES		
			INDOOR	OUTDOOR		TOTAL (HIGH) (CFM)	O.A. (CFM)	TOT (MBH)	SENS (MBH)	EAT (F)	O.A. TEMP (F)	SEER	TOT CAPACITY (MBH)	EAT (F)	O.A. TEMP (F)	HSPF	V/PH	MCA (AMP)	MOCP (AMP)	V/PH	MCA (AMP)	MOCP (AMP)	L (IN)	W (IN)	H (IN)	WGT (LBS)	L (IN)	D (IN)		H (IN)	WGT (LBS)
			(IN)	(IN)		(CFM)	(CFM)	(F)	(F)	(F)	(F)	(F)	(F)	(F)	(F)	(F)	(F)	(F)	(F)	(F)	(F)	(F)	(F)	(F)	(F)	(F)	(F)	(F)		(F)	(F)
DSS 1-1	IDF ROOM	DAIKIN	FAQ24PQUJ	RZR24PQUJ	WALL	470	0	11.5	7.36	80/67	95/75	16	11.5	70/67	47/43	8.8	208/1/60	N/A	N/A	208/1/60	7.9	15	31	8	10.75	17	30	11.25	21.5	80	1,2,3,4,5
DSS 1-2	IDF ROOM	DAIKIN	FAQ24PQUJ	RZR24PQUJ	WALL	470	0	11.5	7.36	80/67	95/75	16	11.5	70/67	47/43	8.8	208/1/60	N/A	N/A	208/1/60	7.9	15	31	8	10.75	17	30	11.25	21.5	80	1,2,3,4,5
DSS 2-1	IDF ROOM	DAIKIN	FAQ18PQUJ	RZR18PQUJ	WALL	400	0	22	14.1	80/67	95/75	15	NA	NA	NA	NA	208/1/60	N/A	N/A	208/1/60	15.8	20	9.4	41.3	11.4	26.5	11.8	32.5	28.9	121	1,2,3,4,5
DSS 3-1	IDF ROOM	DAIKIN	FAQ18PQUJ	RZR18PQUJ	WALL	400	0	22	14.1	80/67	95/75	15	NA	NA	NA	NA	208/1/60	N/A	N/A	208/1/60	15.8	20	9.4	41.3	11.4	26.5	11.8	32.5	28.9	121	1,2,3,4,5
DSS 4-1	IDF ROOM	DAIKIN	FAQ18PQUJ	RZR18PQUJ	WALL	400	0	22	14.1	80/67	95/75	15	NA	NA	NA	NA	208/1/60	N/A	N/A	208/1/60	15.8	20	9.4	41.3	11.4	26.5	11.8	32.5	28.9	121	1,2,3,4,5
DSS 5-1	IDF ROOM	DAIKIN	FAQ18PQUJ	RZR18PQUJ	WALL	400	0	22	14.1	80/67	95/75	15	NA	NA	NA	NA	208/1/60	N/A	N/A	208/1/60	15.8	20	9.4	41.3	11.4	26.5	11.8	32.5	28.9	121	1,2,3,4,5

NOTES:

- INSTALL INDOOR UNIT AS SHOWN ON DRAWINGS AND OUTDOOR UNIT ON EQUIPMENT SUPPORTS OR CONCRETE PAD.
- SIZE AND INSTALL REFRIGERANT PIPING AS DIRECTED BY MANUFACTURER. PENETRATE ROOF WITH PIPE CURB ASSEMBLY SIMILAR TO PATE MODEL PC. PROVIDE SUFFICIENT PENETRATION POINTS TO ACCOUNT FOR ALL PIPING, CONTROL AND POWER WIRING.
- PROVIDE UNIT WITH WIND BAFFLE TO ENSURE UNIT IS CAPABLE OF OPERATING DOWN TO 0 DEG.
- UNIT TO INCLUDE INTEGRAL PUMP AND SPILL AT GRADE OR NEAREST JANITOR SINK AS SHOWN ON PLAN
- INSTALL MANUFACTURER PROVIDED WIRED CONTROL PANEL. ATC SYSTEM INTERLOCK. REQUIRES ONLY ALARM CONDITIONS ON EITHER PIECE OF EQUIPMENT AND ROOM SENSOR WITH NO SETPOINT CONTROL.

TRIPLE DUTY VALVE SCHEDULE

PUMP SERVED	MFG	MODEL	SIZE (IN)	MAX WPD (FTHD)	MAX WORKING PRESS (PSI)	MAX TEMP (F)	NOTES
CHWP-1	B&G	3D-6S	6	3.39	175	250	1,2
CHWP-2	B&G	3D-6S	6	3.39	175	250	1,2
DTWP-1	B&G	3D-5S	5	3.61	175	250	1,2
DTWP-2	B&G	3D-5S	5	3.61	175	250	1,2

NOTES:

- VALVE SHALL BE CAST IRON AND PROVIDED WITH: BRONZE SEAT, REPLACEABLE BRASS DISC, EPDM SEAT INSERT, STAINLESS STEEL STEM, CHATTER SPRING AND TEFLON-GRAPHITE PACKING.

SUCTION DIFFUSER SCHEDULE

PUMP SERVED	MFG	MODEL	PUMP SIDE	SYSTEM SIDE	STRAINER FREE AREA (SQIN)	MAX WPD (FTHD)	MAX WORKING PRESS (PSI)	MAX TEMP (F)	NOTES
CWP-1	B&G	GE-3X	4	6	65	4.13	175	250	1,2
CWP-2	B&G	GE-3X	4	6	65	4.13	175	250	1,2
DTWP-1	B&G	GE-3X	4	6	65	3.38	175	250	1,2
DTWP-2	B&G	GE-3X	4	6	65	3.38	175	250	1,2

NOTES:

- PROVIDE #16 MESH BRONZE STARTUP STRAINER AND SUPPORT FOOT.
- PROVIDE STAINLESS STEEL STRAINER WITH 3/16" DIA PERFORATIONS

PUMP SCHEDULE

UNIT	SERVICE	MFG	MODEL	FLOW (GPM)	HEAD LOSS (FT)	SYSTEM TEMP (F)	CONNECTIONS SUC (IN)	DIS (IN)	BHP	PUMP EFF	IMPPELLER		MOTOR DATA		L (IN)	W (IN)	H (IN)	WEIGHT (LBS)	NOTES
											CUT (IN)	MAX (IN)	V/P/H (HP)	HP (RPM)					
CHWP-1,2	CHILLED WATER	B&G	E1510-3RD	479.0	80	45	4.0	3.0	12.2	80.2%	9.5	9.5	208/3/60	15	1800	39.38	14.63	18.25	2 TO 14
CWP-1,2	DUAL TEMP	B&G	E1510-3EB	450.0	90	45	4.0	3.0	13.1	78.8%	10.375	10.375	208/3/60	15	1800	42.25	16	23.5	1 TO 14
BP-1,2,3	BOILER	B&G	EB0 2AB	100.0	30	160	2.0	2.0	1.05	70.1%	6	6	208/3/60	1.5	1800	16	10	18	1 TO 7,9,10,11,12,13,14

NOTES:

- ALL PUMPS TO BE CONNECTED TO EMERGENCY POWER.
- ALL MOTORS SHALL BE NEMA PREMIUM EFFICIENCY IN COMPLIANCE WITH NJ SMART START FILING.
- THE MECHANICAL CONTRACTOR SHALL PROVIDE DISCONNECT/MOTOR STARTERS OR VFD AS REQUIRED BY THE EQUIPMENT.
- IMPPELLER SELECTION SHALL BE MADE TO PROVIDE AN ADDITIONAL 25% FLOW OR 10% PRESSURE LOSS THAN DESIGN REQUIREMENT.
- PROPERLY ALIGN PUMP/PIPING AND CONNECT WITH FLEXIBLE CONNECTOR. DO NOT UTILIZE FLEX CONNECTION FOR CORRECTION OF IMPROPER ALIGNMENT.
- PROVIDE ALL PUMPS WITH DIFFERENTIAL PRESSURE GAUGES WITH SHUTOFF VALVES TO EACH PORT. DO NOT USE SEPARATE GAUGES AT SUCTION AND DISCHARGE.
- SUBMIT SIGNSEALED CALCULATION AND INSTALLATION DETAIL REQUIREMENTS ON ALL SEISMIC DESIGNS SHOWING COMPLIANCE WITH 2006 IBC REQUIREMENTS.
- DUAL TEMPERATURE WATER PUMPS SHALL BE CONNECTED TO VFDs (ONE FOR EACH PUMP). PUMPS SHALL BE BALANCED TO ACTUAL FLOW WITH VFD SET AT 50HZ.
- WHERE MULTIPLE PUMPS ARE INDICATED IN SCHEDULE ONE SHALL OPERATE AS STANDBY. ACTUAL STANDBY PUMP SHALL CHANGE TO PROVIDE EQUAL RUN TIME ON EQUIPMENT.
- FLOOR MOUNTED PUMPS SHALL BE PROVIDED WITH MECHANICAL SEALS AND OSHA APPROVED GUARD.
- FLOOR PUMPS SHALL BE INSTALLED WITH SEISMICALLY RATED INERTIA PAD ON TOP OF HOUSE KEEPING PAD.
- FLOOR PUMPS SHALL BE PROPERLY GROUTED TO BASE AND BE ALIGNED PRIOR TO BUILDING COMPLETION. SUBMIT LETTER OF INSTALLATION APPROVAL FROM MFG WITH CLOSE OUT DOCUMENTS.
- SUSPEND INLINE PUMPS FROM STRUCTURE ABOVE WITH THREADED RODS, SPRING ISOLATORS AND SEISMIC GUIDE WIRES. INSTALL DRIP PAN UNDER PUMP
- THE UNIT SHALL INCLUDE A MINIMUM 2-YEAR MFG PART WARRANTY. LABOR FOR 1ST YEAR TO BE INCLUDE AS PART OF CONTRACTOR'S 1-YEAR LABOR REQUIREMENT

EXPANSION TANK SCHEDULE

UNIT	SERVICE	LOCATION	MFG	MODEL	TYPE	TANK			PIPE CONN (IN)	MAX PRES (PSI)	MAX TEMP (F)	PHYSICAL DATA			NOTES
						DESIGN (GAL)	VOLUME (GAL)	ACCEPT (GAL)				DIA (IN)	H (IN)	WGT FULL (LBS)	
ET-1	HOT WATER	MECH RM	B&G	B-500	BLADDER	1500	210	52.65	1	125	240	24	50-7/8	928	1,2,3

NOTES:

- INSTALL UNIT ON CONCRETE PAD. UNIT BE BOLTED TO FLOOR AND INSTALLED WITH SEISMIC RESTRAINTS AS NOTED IN SPECIFICATIONS.
- SUBMIT SIGNED&SEALED CALCULATION AND INSTALLATION DETAILS SHOWING COMPLIANCE WITH SEISMIC REQUIREMENTS OF 2006 IBC.
- UNIT TO INCLUDE CHARGING VALVE, DRAIN CONNECTIONS, PRESSURE GAUGE, HIGH CAPACITY AIR VENT AND SEISMIC MOUNTING

DRYER EXHAUST FAN SCHEDULE

UNIT	SERVICE	LOCATION	MFG	MODEL	TYPE	DRIVE	AIRFLOW DESIGN (CFM)	ESP (INWG)	SPEED (RPM)	HP	MOTOR DATA		PHYSICAL DATA							NOTES	
											V/P/H (HP)	HP (RPM)	W (IN)	D (IN)	H (IN)	ROOF OPENING L (IN)	W (IN)	DAMPER TYPE	WGT (LBS)		
EF D-1	DRYER EXHAUST	ROOF	EXHAUSTO	BSB 315	ROOF	DIRECT	1680	1.0	1720	1	208/3/60	1	1720	31	35	35	12.0	12.0	NONE	126	1,2,3,4,5
EF D-2	DRYER EXHAUST	ROOF	EXHAUSTO	BSB 315	ROOF	DIRECT	1320	1.0	1720	1	208/3/60	1	1720	31	35	35	12.0	12.0	NONE	126	1,2,4,6

NOTES:

- INLINE FANS TO INCLUDE: THERMAL OVERLOAD PROTECTED MOTORS, PRE WIRED DISCONNECT SWITCH, FLANGED INLET, MFR PROVIDED MEC18 CONTROLLER
- ALL DRYER EXHAUST FANS AND ASSOCIATED CONTROLS SHALL OPERATE CONTINUOUS ON A 24 HR 7 DAY A WEEK SCHEDULE AND BE CONNECTED TO EMERGENCY POWER.
- SPEED QUEEN MODEL SSGYAGS113TN01 DRYER REQUIREMENTS: 73,000 BTU/H NATURAL GAS INPUT AND 400 CFM OF EXHAUST AIR
- SPEED QUEEN MODEL SSGYAGS113TN01 DRYER REQUIREMENTS: 25,000 BTU/H NATURAL GAS INPUT AND 220 CFM OF EXHAUST AIR
- EXHAUST FAN HAS BEEN SIZED FOR (2) SPEED QUEEN MODEL SSGYAGS113TN01 DRYERS AND (4) SPEED QUEEN MODEL SSGYAGS113TN01 DRYERS.
- EXHAUST FAN HAS BEEN SIZED FOR (6) SPEED QUEEN MODEL SSGYAGS113TN01 DRYERS.

GAS FIRED DUCT FURNACE SCHEDULE

UNIT	SERVICE	MFG	MODEL	SUPPLY FAN				PD (INWC)	GAS FURNACE						ELECTRICAL				PHYSICAL DATA				NOTES
				AIRFLOW		MAX. CAPACITY			AIR TEMP		STGS	AFUE	GAS TYPE	PRESS W/C	SIZE (IN)	V/PH (AMP)	FLA (AMP)	MOCP (AMP)	L (IN)	W (IN)	H (IN)	WGT (LBS)	
				TOTAL (CFM)	O.A. (CFM)	INPUT (MBH)	OUTPUT (MBH)		ENT (F)	LVG (F)													
				(IN)	(IN)	(IN)	(IN)		(F)	(F)													
GDF-1	LAUNDRY	REZTOR	SC300	3,140	3,140	0.22	300	240	0.0	70.4	MOO	80	NG	7-11	3/4	208/3/60	1.9	15	45	26	35	321	1,2,3,4

NOTES:

- PROVIDE UNIT WITH: DISCONNECT SWITCH AND 24VAC CONTROL TRANSFORMER
- UNIT TO BE INSTALL ON VIBRATION ISOLATED SUPPORTS RATED FOR CODE REQUIRED SEISMIC LOADS. SUBMIT SIGNED AND SEALED CALCULATION SHOWING COMPLIANCE
- UNIT SHALL BE PROVIDED WITH: 490 STAINLESS STEEL BURNER, 490 STAINLESS STEEL HEAT EXCHANGER, AND MODULATING GAS VALVE.
- UNIT SHALL BE PROVIDED WITH CONTROL PACKAGE. CONTROLS SHALL BE SET UP TO STAGE UNIT RE-START ON LOSS OF POWER. PROVIDE ALL ACCESSORIES FOR A COMPLETE SYSTEM

AIR SEPARATOR SCHEDULE

UNIT	SERVICE	MFG	MODEL	FLOW (GPM)		PIPE CONN (IN)	STRAINER AREA (SQIN)	VOL (GAL)	MAX PRESS LOSS (PSI)	PRESS TEMP (F)	PHYSICAL DATA				NOTES		
				DES (GPM)	MAX (GPM)						DIA (IN)	H (IN)	FLG (IN)	BOT STRAIN CLEAR (LBS)		WGT (LBS)	
AS-HW	HOT WATER	B&G	RL-6F	450	850	6	205	34	3	0.65	250	18	44	11.375	19	564	1,2,3

NOTES:

- UNIT TO BE SUPPORT FROM FLOOR WITH STEEL SUPPORTS IN COMPLIANCE WITH SEISMIC REQUIREMENTS NOTED IN SPECIFICATIONS.
- UNIT TO INCLUDE 1" NPTF BLOWDOWN VALVE
- STRAINER REMOVAL TO BE FROM BOTTOM OF UNIT.

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SUBMISSIONS

NO.	DATE	DESCRIPTION
1	07/14/17	CONSTRUCTION DOCUMENTS
2	08/07/17	FINAL CONSTR. DOCUMENTS

REVISIONS

NO.	DATE	DESCRIPTION
1A	AS NOTED	CONSTR. DOC. REVISIONS
2A	AS NOTED	ADDENDUM 1
2B	08/24/17	ADDENDUM 2
2D	09/08/17	ADDENDUM 6

**WILLIAM PATERSON UNIVERSITY
NEW RESIDENCE HALL**
WAYNE, NEW JERSEY

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