

ENERGY RECOVERY UNIT SCHEDULE																													
TAG	LOCATION	AIRFLOW CONDITIONS					SUPPLY FAN				EXHAUST FAN				DESIGN CONDITIONS				OUTDOOR AIR LOADS W/ ENERGY RECOVERY				ELECTRICAL DATA				BASIS OF DESIGN		
		SA (CFM)	OA (%)	EA (CFM)	EA ESP (IN. WC)	SA ESP (IN. WC)	TYPE	CFM	TSP (IN. WC)	HP	BHP	TYPE	CFM	TSP (IN. WC)	HP	BHP	EAT (SUMMER DB°F/ WB°F)	EAT (WINTER DB°F/ WB°F)	LAT (SUMMER DB°F/ WB°F)	LAT (WINTER DB°F/ WB°F)	COOLING TOTAL (T/MBH)	COOLING REDUCTION (T/MBH)	HEATING (T/MBH)	HEATING REDUCTION (T/MBH)	VOLTAGE	MCA	MOP	ENCLOSURE	MANUFACTURER / MODEL
ERU-1	ATTIC	900	100	650	0.80	0.60	BELT	900	-	2	-	BELT	650	-	1	-	91 / 75	0 / 0	82.6 / 71.9	30.7 / 25.7	42.1	17.2	98.1	47.8	208/360	12	20	ODP	AMERICAN ALDES / EHS1000i

AIR DEVICE SCHEDULE								
DESIG.	DUTY	SIZE (IN.)	CFM RANGE	INLET/ NECK SIZE (IN.)	MAX. S.P.	MAX. NC	DESCRIPTION	MANUFACTURER / MODEL
(A)	SUPPLY	15 x 15	0 - 150	8"Ø	0.10"	20	12 x 12 LOUVERED FACE PANEL	TITUS TDC
(B)	SUPPLY	15 x 15	151 - 235	8"Ø	0.10"	20	12 x 12 LOUVERED FACE PANEL	TITUS TDC
(C)	SUPPLY	15 x 15	236 - 325	10"Ø	0.10"	20	12 x 12 LOUVERED FACE PANEL	TITUS TDC
(D)	SUPPLY	6 FEET LONG	155 CFM / LF	6" DUCT WIDTH	0.06"	30	LINEAR BAR DIFFUSER 1/4" BARS, 1/2" SPACING, 15" DEFLECTION	TITUS CT-541
(E)	RETURN / EXHAUST	10 x 10	0 - 295	10 x 10	0.06"	20	FIXED LOUVER .35" DEFLECTION 3/4" SPACING - REGISTER	TITUS 350 FL
(F)	RETURN / EXHAUST	12 x 12	296 - 440	12 x 12	0.06"	20	FIXED LOUVER .35" DEFLECTION 3/4" SPACING - REGISTER	TITUS 350 FL
(G)	RETURN / EXHAUST	18 x 12	441 - 675	24 x 12	0.06"	20	FIXED LOUVER .35" DEFLECTION 3/4" SPACING - REGISTER	TITUS 350 FL
(H)	RETURN / EXHAUST	24 x 12	676 - 1050	24 x 12	0.06"	20	FIXED LOUVER .35" DEFLECTION 3/4" SPACING - REGISTER	TITUS 350 FL
(J)	RETURN	3 FEET LONG	160 CFM / LF	6" DUCT WIDTH	0.06"	25	LINEAR BAR DIFFUSER 1/4" BARS, 1/2" SPACING, 0" DEFLECTION	TITUS CT-540

NOTE: MANUFACTURERS MAY PROVIDE ALUMINUM OR STEEL AIR DEVICES UNLESS OTHERWISE INDICATED. ALL AIR DEVICES IN HIGH HUMIDITY AREAS (ie. TOILET ROOMS, JANITOR'S CLOSETS, ETC.) SHALL BE ALUMINUM.

PUMP SCHEDULE												
DESIG.	SERVICE	LOCATION	GPM	HEAD (FT.)	MOTOR				RPM	CONTROL	BASIS OF DESIGN	TYPE
					HP	MAX. BHP	VOLTS	PHASE				
CWP-1	GEO THERMAL WATER	MECH. ROOM	50	85	3	2.5	208	3	1750	ATC	BELL & GOSSETT SERIES 1510 - SIZE 1-1/4BC	BASE-MOUNTED END-SUCTION
CWP-2	GEO THERMAL WATER (STAND-BY)	MECH. ROOM	50	85	3	2.5	208	3	1750	ATC	BELL & GOSSETT SERIES 1510 - SIZE 1-1/4BC	BASE-MOUNTED END-SUCTION
HWP-1	HEATING WATER	MECH. ROOM	10	45	3/4	0.5	120	1	1725	ATC	BELL & GOSSETT SERIES 90 - SIZE 1-1/2A	IN-LINE CLOSE-COUPLED
HWP-2	HEATING WATER (STAND-BY)	MECH. ROOM	10	45	3/4	0.5	120	1	1725	ATC	BELL & GOSSETT SERIES 90 - SIZE 1-1/2A	IN-LINE CLOSE-COUPLED

NOTES: 1. PUMPS CWP-1 AND CWP-2 SHALL BE PROVIDED WITH VFD'S, FURNISHED UNDER DIVISION 16.  
2. THE FLUID CIRCULATING THROUGH PUMPS CWP-1 AND CWP-2 SHALL BE A 15% PROPYLENE GLYCOL SOLUTION

FAN SCHEDULE															
FAN NO.	LOCATION	AREA SERVED	CFM	ESP (IN.)	MOTOR				RPM	MIN. FAN DIA.	WHEEL TYPE	CLASS	DRIVE TYPE	METHOD OF CONTROL	MANUFACTURER / MODEL
					HP	MAX. BHP	VOLTS	PHASE							
EF-1	MECHANICAL ROOM	MECHANICAL ROOM	500	0.1	1/20	-	120	1	860	14"	PROP	-	DIRECT	REVERSE STAT	GREENHECK / SE1-14-440-C8

NOTES: 1. PROVIDE FAN WITH INTEGRAL WALL COLLAR AND GRAVITY DAMPER.

EXPANSION TANK SCHEDULE												
DESIGN	LOCATION	SYSTEM	TYPE	TANK VOL (GAL)	MIN ACCEPT VOLUME (GAL)	AIR CHARGE PRECHARGE PSIG	OPER PSIG	DIMENSIONS			BASIC OF DESIGN	REMARKS
								DIA	H/L	SYSTEM CONN (IN)		
EXP-1	MECH ROOM	CONDENSER	BLADDER	53	53	18	50	24	37	1	BELL & GOSSETT / B-200	-
EXP-2	MECH ROOM	HEATING	BLADDER	53	53	18	50	24	37	1	BELL & GOSSETT / B-200	-

NOTES:

1. EXPANSION TANK SHALL BE FACTORY PRECHARGED TO CAPACITIES SHOWN
2. BLADDER SHALL BE REMOVABLE THRU ACCESS HANDHOLE.
3. PROVIDE ALL PIPING SPECIALTIES AS SHOWN IN TYPICAL PIPING DIAGRAM.
4. TANK SHALL BE A.S.M.E. STAMPED.
5. TANK SHALL HAVE A MAXIMUM WORKING PRESSURE OF 125 PSI.

AIR SEPARATOR SCHEDULE							
DESIG	LOCATION	SYSTEM	SIZE	GPM	STRAINER	BASIC OF DESIGN	REMARKS
AS-1	MECH ROOM	CONDENSER	2 1/2"	50	N	BELL & GOSSETT	*
AS-2	MECH ROOM	HEATING	1"	10	N	BELL & GOSSETT	*

NOTES

1. MAXIMUM PRESSURE DROP THRU AIR SEPARATORS SHALL BE ONE FOOT OF DROP.
2. PROVIDE HIGH CAPACITY AUTOMATIC AIR VENT ON AIR VENT PORT OF EACH SEPARATOR
3. CONSTRUCTION SHALL BE A.S.M.E. STAMPED FOR 125 PSI WORKING PRESSURE.

GEO THERMAL HEAT PUMP SCHEDULE																	
DESIG.	NOMINAL MBH	NOMINAL CFM	OA CFM	ESP (IN.)	COOLING CAPACITY @ 90°F EWT (BTU/HR)		COOLING		CONDENSER WATER		HEATING CAPACITY @ 40°F EWT (BTU/HR)	HEATING		ELECTRICAL SERVICE		BRANCH PIPE SIZE	BASIS OF DESIGN
					TOTAL	SENSIBLE	EAT DB / WB	LAT DB / WB	GPM	MAX WPD (FT.)		EAT DB / WB	LAT DB / WB	MCA	VOLTS/PHASE		
①	30	990	200	0.35	28,600	20,400	75.0 / 62.5	55.0 / 54.5	6.0	10	24,900	70.0 / 32.0	95.0 / 32.0	23.5	208/1	1"	McQUAY EFFINITY WCCW4030
②	12	360	110	0.35	13,400	9,800	75.0 / 62.5	55.0 / 54.5	2.9	10	11,200	70.0 / 32.0	95.0 / 32.0	7.8	208/1	3/4"	McQUAY EFFINITY WCCW5012
③	12	360	110	0.35	13,800	9,300	75.0 / 62.5	55.0 / 54.5	2.9	10	11,400	70.0 / 32.0	95.0 / 32.0	7.8	208/1	3/4"	McQUAY EFFINITY WCCW5012
④	7	360	45	0.30	6,300	3,900	75.0 / 62.5	55.0 / 54.5	1.4	10	5,900	70.0 / 32.0	95.0 / 32.0	5.8	208/1	3/4"	McQUAY EFFINITY WCCW4007
⑤	7	350	35	0.35	8,200	6,100	75.0 / 62.5	55.0 / 54.5	1.7	10	6,500	70.0 / 32.0	95.0 / 32.0	5.8	208/1	3/4"	McQUAY EFFINITY WCCW4007
⑥	19	950	0	0.20	19,400	16,300	75.0 / 62.5	55.0 / 54.5	4.1	10	24,500	70.0 / 32.0	95.0 / 32.0	11.2	208/1	1"	McQUAY EFFINITY WCCW4019
⑦	7	350	45	0.35	7,700	4,900	75.0 / 62.5	55.0 / 54.5	1.6	10	5,200	70.0 / 32.0	95.0 / 32.0	5.8	208/1	3/4"	McQUAY EFFINITY WCCW4007
⑧	30	1170	140	0.35	31,200	25,100	75.0 / 62.5	55.0 / 54.5	6.5	10	16,900	70.0 / 32.0	95.0 / 32.0	23.5	208/1	1"	McQUAY EFFINITY WCCW4030
⑨	12	360	35	0.35	11,400	9,300	75.0 / 62.5	55.0 / 54.5	2.4	10	8,400	70.0 / 32.0	95.0 / 32.0	7.8	208/1	3/4"	McQUAY EFFINITY WCCW5012
⑩	15	920	50	0.35	15,500	12,400	75.0 / 62.5	55.0 / 54.5	3.3	10	10,200	70.0 / 32.0	95.0 / 32.0	10.0	208/1	3/4"	McQUAY EFFINITY WCCW4015
⑪	12	360	35	0.35	11,500	8,200	75.0 / 62.5	55.0 / 54.5	2.4	10	7,400	70.0 / 32.0	95.0 / 32.0	7.8	208/1	3/4"	McQUAY EFFINITY WCCW5012
⑫	7	350	40	0.35	9,600	7,500	75.0 / 62.5	55.0 / 54.5	1.6	10	7,800	70.0 / 32.0	95.0 / 32.0	5.8	208/1	3/4"	McQUAY EFFINITY WCCW4007
⑬	15	920	55	0.35	16,900	13,000	75.0 / 62.5	55.0 / 54.5	3.6	10	12,300	70.0 / 32.0	95.0 / 32.0	10.0	208/1	3/4"	McQUAY EFFINITY WCCW4015
⑭	15	930	0	0.30	14,400	12,100	75.0 / 62.5	55.0 / 54.5	3.1	10	500	70.0 / 32.0	95.0 / 32.0	10.0	208/1	3/4"	McQUAY EFFINITY WCCW4015


NOTES: 1. PROVIDE GEOTHERMAL HEAT PUMPS WITH INTEGRAL 120V / 1 PHASE CORDLESS CONDENSATE PUMP.  
2. THE FLUID CIRCULATING THROUGH THE HEAT PUMP COILS SHALL BE A 15% PROPYLENE GLYCOL SOLUTION

STEAM TO WATER HEAT EXCHANGER SCHEDULE												
DESIG	SERVICE	WATER SIDE						STEAM SIDE		CONDENSATE SIDE	TYPE	BASIS OF DESIGN
		MBH	GPM	EWI (°F)	LWT (°F)	MAX. WPD (FT.)	WATER TYPE	INITIAL PRESSURE	LBS/HR	TRAP CAPACITY (LBS/HR)		
HX-1	HEATING WATER	100	10	160	180	3.0	WATER	10 PSIG	105	315	SHELL & TUBE	BELL & GOSSETT / SU4 3-2

PLUMBING FIXTURE SCHEDULE							
P #	DESCRIPTION	CW	HW	SAN	VENT	TRAP	REMARKS
P-101	WATER CLOSET	1"	"	4"	2"	1NT	SEE NOTE NO. 4
P-102	WATER CLOSET	1"	"	4"	2"	1NT	SEE NOTE NO. 1 & 4
P-201	URINAL	3/4"	"	2"	2"	1NT	SEE NOTE NO. 3
P-202	URINAL	3/4"	"	2"	2"	1NT	SEE NOTE NO. 1 & 3
P-418	LAVATORY	1/2"	1/2"	1 1/2"	1 1/2"	1P	SEE NOTE NO. 1 & 3
P-420	LAVATORY	1/2"	1/2"	1 1/2"	1 1/2"	1P	SEE NOTE NO. 1 & 2
P-501	MOP BASIN	3/4"	3/4"	3"	1 1/2"	1P	SEE NOTE NO. 4
P-528	COUNTERTOP SINK	1/2"	1/2"	1 1/2"	1 1/2"	1P	SEE NOTE NO. 2

NOTES:

1. ADA COMPLIANT.
2. COUNTERTOP MOUNTED.
3. WALL MOUNTED.
4. FLOOR MOUNTED.

FINNED TUBE RADIATION SCHEDULE								
SYMBOL	BTU/LF	GPM @ 20°F ΔT	EWTF (°F)	LWTF (°F)	ELEMENT (L x H x W)	RUNOUT SIZES	BASIS OF DESIGN	REMARKS
	780	0.32	180	160	48 x 3 1/4 x 3 1/4	1/2"	VULCAN	MIN. 4" AFF.

PLUMBING EQUIPMENT SCHEDULE			
DESIG.	SERVICE	DESCRIPTION	MANUFACTURER / MODEL
DWH-1	DOMESTIC WATER HEATER	COMMERCIAL ELECTRIC STORAGE TYPE WATER HEATER, ASME LISTED, WITH HEAVY-DUTY MEDIUM WATT DENSITY ELEMENTS, POWERED ANODES AND HEAVY FOAM INSULATION. TANK SHALL BE 50 GALLONS NOMINAL CAPACITY, 6 KW, WITH A RECOVERY OF 25 GPH AT 100° F RISE, 208V / 3 PHASE.	LOCHINVAR MODEL EST050GD
MV-1	DOMESTIC HOT WATER MIXING VALVE	BRONZE SELF-LUBRICATING CARTRIDGE CIRCULATOR W, RATED AT 3 GPM AT 7 FT. TDH, 1/8 HP, 120/60°1.	BELL & GOSSETT MODEL NRF-22
CP-1	DOMESTIC HOT WATER CIRCULATOR PUMP	MASTER DOMESTIC HOT WATER THERMOSTATIC MIXING VALVE, ASSE 1017 APPROVED, RATED TO MIX 24 GPM MAXIMUM AND 2 GPM MINIMUM WITH A MAXIMUM PRESSURE LOSS OF 5 PSI.	LAWLER MODEL 802, UNIT NO. 73000

FULLY SPRINKLERED  
CONTRACT DOCUMENTS SUBMISSION

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Drawing Scale:	Drawing Title: <b>MECHANICAL SCHEDULES</b>
Drawing Start Date:	Approved: Associate Director for Operations:
Drawing Finish Date:	Approved: Chief, Facilities Engineer:
Drawing Approved:	Approved: Director, Medical Center:

Project Title: BUILDING 5 RENOVATION		
Building No: 5	Checked: MAF	Drawn: ERS
Location: VAMHCS MEDICAL CENTER WILMINGTON, DELAWARE		

Date:  
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Project No:  
460-13-111

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