

COOLING MODULE SCHEDULE

SYMBOL	SERVICE / LOCATION	MAKE & MODEL NO.	CAPACITY (BTU/HR)	AIRFLOW (CFM)	AIR TEMP. (DRY BULB °F)	FLUID TEMP. (°F)	FLUID FLOW RATE (GPM)	FLUID	MAX. WORKING PRESSURE (PSIG)	FLUID PRESSURE DROP (FT. H2O)	FAN		MOTOR		COIL		OPERATING WEIGHT (LBS)	REMARKS	
											NO./DIA	SPEED (RPM)	NO. - HP	FLA (AMP)	VOLTS - PH - HZ	FACE AREA (CU. FT.)			CONNECTION SIZE OD CU. SWEAT (IN.)
CM-1	FUEL CELL 1 / LOT B	COLMAC COIL AFV-90	2,404,523	47,467	86 ENT. 134.3 LVG.	189 ENT. 98.1 LVG.	60	40% DOWNFROST	150 @ 250°F	9.5	6-30"	860	6 - 1.5HP	5.44	230 - 3 - 60	101.25	2 5/8 INLET 2 5/8 OUTLET	3850	FURNISHED BY UTC
CM-2	FUEL CELL 2 / LOT B	COLMAC COIL AFV-90	2,404,523	47,467	86 ENT. 134.3 LVG.	189 ENT. 98.1 LVG.	60	40% DOWNFROST	150 @ 250°F	9.5	6-30"	860	6 - 1.5HP	5.44	230 - 3 - 60	101.25	2 5/8 INLET 2 5/8 OUTLET	3850	FURNISHED BY UTC
CM-3	FUEL CELL 3 / LOT B	COLMAC COIL AFV-90	2,404,523	47,467	86 ENT. 134.3 LVG.	189 ENT. 98.1 LVG.	60	40% DOWNFROST	150 @ 250°F	9.5	6-30"	860	6 - 1.5HP	5.44	230 - 3 - 60	101.25	2 5/8 INLET 2 5/8 OUTLET	3850	FURNISHED BY UTC

RO SYSTEM

CIV-4000 NIMBUS RO SYSTEM:
 (1) SS VESSEL
 MULTISTAGE SS PUMP WITH 1.5 HP MOTOR 110/220VAC / 60HZ / 1PH
 20 INCH 20 MICRON SEDIMENT FILTER, BIG BLUE HOUSING
 20 INCH 10 MICRON GREEN CARBON BLOCK, BIG BLUE HOUSING
 SS PRE-FILTER INLET/OUTLET GAUGE
 SS VESSEL INLET/OUTLET GAUGE
 PRODUCT, BRINE, RECIRCULATION FLOW METERS
 TDS MONITOR
 MICROPROCESSOR
 FRAME IS WELDED ALUMINUM WITH POWDER COAT
 SIZE: 26"W x 23"L x 56"H
 CALIFORNIA AB1953 COMPLIANT

ANTI-SCALANT (DUAL TANK):
 ANTI-SCALANT MEDIA CARTRIDGE
 10" BIG BLUE HOUSINGS
 MOUNTING BRACKETS AND CONNECTORS

STORAGE TANK:
 ATMOSPHERIC STORAGE TANK WITH A 200 GALLON CAPACITY
 SIZE 31" DIA X 72" HEIGHT AND 1" INLET CONNECTION AND 1 1/2" OUTLET CONNECTION

TANK BUFFER (R014):
 PRESSURIZED STORAGE TANK WITH A 10.2 GALLON CAPACITY AT 60 PSI
 SIZE 16" DIA. X 24" HEIGHT AND 3/4" CONNECTION

DELIVERY PUMP
 PRESSURIZED PUMP ASSEMBLY
 1 HP 110 V 60 HZ
 20 GPM MAX
 POWER 110 VAC

EQUIPMENT CONNECTION KIT (CIV-4000 RO AND EQUIPMENT):
 BALL VALVE SHUT OFF
 TANK CONNECTION
 RO CONNECTION
 DELIVERY PUMP CONNECTIONS

FLOAT SWITCH KIT (ATMOSPHERIC TANKS ONLY):
 PUMP DOWN FLOAT SWITCH
 PUMP UP FLOAT SWITCH

COOLING TOWER SCHEDULE

SYMBOL	SERVICE / LOCATION	MAKE & MODEL NO.	TYPE	NO. OF CELLS	NOM CAP CELL (TONS)	FLOW RATE /CELL (GPM)	MIN FLOW RATE/ CELL (GPM)	PRESS DROP (PSI)	EWT (°F)	LWT (°F)	DESIGN TEMP (°F)(WB)	FAN INFORMATION					MCA EA MOTOR (AMPS)	INLET/ OUTLET (IN)	DIMEN. (L x W x H)	OPER WEIGHT (LBS)	REMARKS	
												NO. OF FANS	FLOW RATE (CFM)	NO. OF MOTORS	MOTOR POWER (HP)	ESP (IN WG)						VOLTS / PH / HZ
CT-1	LOT B/ ABSORPTION CHILLER	JT SERIES JT-37110	IND'CD DRFT/ CROSS-FLOW	1	-	286	-	-	95	85	78	1	29350	1	10	-	460 / 3 / 60	-	3/3	5.5 x 15 x 7.75	5980	FURNISHED BY UTC

ABSORPTION CHILLER SCHEDULE

SYMBOL	SERVICE	LOCATION	MAKE & MODEL NO.	CAPACITY (TONS)	EVAPORATOR				CONDENSER				ABSORBER				PUMP(S) (KW)	INPUT KVA	ELECTRICAL			WORKING WEIGHT (LBS)	REMARKS
					EWT (°F)	LWT (°F)	FLOW (GPM)	DELTA P (FT)	EWT (°F)	LWT (°F)	FLOW (GPM)	DELTA P (FT)	EWT (°F)	LWT (°F)	FLOW (GPM)	DELTA P (FT)			VOLTS	PH	HZ		
AC-1	LOT B	LOT B	WORLD ENERGY HWAR-L50	50	54	44	120	17.4	85	95	286	23.3	203	179.3	75	9.8	-	5.4	460	3	60	6,500	FURNISHED BY UTC

HEAT EXCHANGER SCHEDULE

SYMBOL	SERVICE / LOCATION	MAKE & MODEL NO.	HOT SIDE						COLD SIDE						OVERALL DIMENSION LxWxH (IN)	HEAT TRNSFRD (METH)	HEAT TRANSFR AREA (SF)	FLUID FLOW	NO. OF PLATES	ADD'L PLATE CAPACITY	NET WEIGHT (LBS)	REMARKS		
			FLOW (GPM)	ENT TEMP (°F)	LVG TEMP (°F)	PD (PSI)	INLET / OUTLET SIZE (IN)	DSN PRESS (PSI)	LIQ VOL (G/G)	FLOW (GPM)	ENT TEMP (°F)	LVG TEMP (°F)	PD (PSI)	INLET / OUTLET SIZE (IN)									DSN PRESS (PSI)	LIQ VOL (G/G)
HX-1	HEATING HOT WATER MECHANICAL ROOM	SONDEX / S9A-IG10-22-TM-LIQUID	150	203	188.9 180.8	8.95	2.5/2.5	150	0.22	150	139.5	153.43 161.48	7.62	2.5/2.5	195	0.22	15.5x17.28x24.65	1,026.2 1,617.4	22.11	COUNTER	22	37	290	
HX-2	DOMESTIC HOT WATER MECHANICAL ROOM	SONDEX / S20A-IG16-70-TL-DW-LIQUID	75	104 107.2	80	3.99	2/2	150	1.08	75	70	93.95 97.14	3.78	2/2	195	1.08	11.8x25.08x47.0	894.9 1,013.9	153.7	COUNTER	70	11	609	DOUBLE-WALLED HEAT EXCHANGER

* TOP NUMBER INDICATES BOL VALUE, BOTTOM NUMBER INDICATES EOL VALUE.

PUMP SCHEDULE

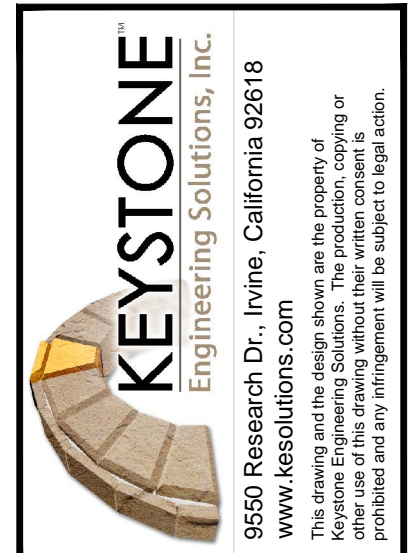
SYMBOL	SERVICE / LOCATION	MAKE & MODEL NO.	TYPE	FLOW RATE (GPM)	HEAD (FT)	NPSH (FT)	PUMP EFF. (%)	SUCTION SIZE (IN)	OUTLET SIZE (IN)	IMP. DIA. (IN)	MOTOR DATA				OPER. WEIGHT (LBS)	REMARKS	
											HP	SPEED (RPM)	VOLTS - PH - HZ	FLA (AMPS)			MIN. EFF. (%)
HWP-1	HEATING HOT WATER PUMP/FUEL CELL YARD	BELL & GOSSETT 1510 2-1/2 BB	END SUCTION	225	73.9	7.1	75.57	3	2.5	9.5	7.5	1750	460-3-60	9.5	91.7	520	250°F SEALS, SUITABLE FOR OUTDOOR MOUNTING AND OPERATION
HWP-2	DOMESTIC HOT WATER MECHANICAL ROOM	BELL & GOSSETT 1510 2BC	END SUCTION	75	56.9	4.1	56.42	2.5	2	7.5	5	1750	460-3-60	6.6	89.5	375	
HWP-3	HEATING HOT WATER / MECHANICAL ROOM	BELL & GOSSETT 80 3X3X7B	IN-LINE	150	26.0	5	66.58	3	3	5.75	2	1750	208-230/460-3-60	6-5.8/2.9	86.5	228	
CHWP-1	CHILLED WATER PUMP	BELL & GOSSETT 1510 1-1/2AC	END SUCTION	120	40	6.3	69.12	2	1.5	6.75	2	1750	460-3-60	3.2	-	175	TEFC
CWP-1	CONDENSER WATER PUMP	BELL & GOSSETT 1510 2-1/2BB	END SUCTION	288	68	8.4	76	3	2.5	8.875	7.5	1750	460-3-60	12.15	-	350	TEFC
RO-1	RO WATER PUMP	GRUNDFOS MQ 3-45	END SUCTION	13.2	91.9	-	-	1	1	-	1	-	110-1-60	-	-	29	

HEAT RECOVERY SUMMARY TABLE

PUMP ID	SERVICE	HEAT LOAD (MBH)	FLOW RATE (GPM)	ENTERING WATER TEMP. (°F)	LEAVING WATER TEMP. (°F)	NOTES
HIGH GRADE SYSTEM						
HWP-1	ABSORPTION CHILLER	888.75	75	203	179.3	
	HEATING HOT WATER	1,617.38	150	203	180.8	
TOTALS:		2,506.13				
LOW GRADE SYSTEM						
HWP-2	HEATING HOT WATER	1,013.86	75	107.2	80	
TOTALS:		1,013.86				

FUEL CELL SCHEDULE

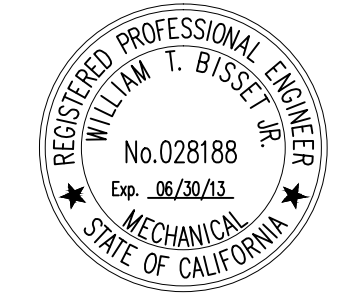
SYMBOL	SERVICE / LOCATION	MAKE & MODEL NO.	POWER PERFORMANCE	VOLTS - PH - HZ	EFFICIENCY OVERALL (LHV)	FUEL CONSUMP. (HHV) MMBTU/HR	FUEL PRESS. (IN. H2O)	HEAT RECOVERY (MMBTU/HR)		NOISE (dBA)	WEIGHT (LBS)	REMARKS
								LOW GRADE	HIGH GRADE			
FC-1	POWER & THERMAL / LOT B	PURECELL MODEL 400	400 kW LIFE AVG. 360 kW INITIAL	480 - 3 - 60	90%	3.79 AVG 3.60 INITIAL	10-14	1.708 NOM. 1.537 INITIAL	.785 NOM. .683 INITIAL	<65dBA @ 33FT	60,000	
FC-2	POWER & THERMAL / LOT B	PURECELL MODEL 400	400 kW LIFE AVG. 360 kW INITIAL	480 - 3 - 60	90%	3.79 AVG 3.60 INITIAL	10-14	1.708 NOM. 1.537 INITIAL	.785 NOM. .683 INITIAL	<65dBA @ 33FT	60,000	
FC-3	POWER & THERMAL / LOT B	PURECELL MODEL 400	400 kW LIFE AVG. 360 kW INITIAL	480 - 3 - 60	90%	3.79 AVG 3.60 INITIAL	10-14	1.708 NOM. 1.537 INITIAL	.785 NOM. .683 INITIAL	<65dBA @ 33FT	60,000	



CBS TELEVISION CITY
 FUEL CELL INSTALLATION PROJECT

ID	DATE	REMARKS
1	7/20/12	PRELIMINARY DESIGN REVIEW
2	8/20/12	PLAN CHECK
3	9/14/12	BD CLARIFICATIONS
4	9/19/12	UTC RECOMMENDED CORRECTIONS
5	9/25/12	UTC COMMENTS/REVISIONS

ENGR:	WTB
DRWN BY:	KAP
CHK'D BY:	WTB
DATE:	9/19/12
JOB NO.:	12-010
SCALE:	AS NOTED



SHEET
M0.3