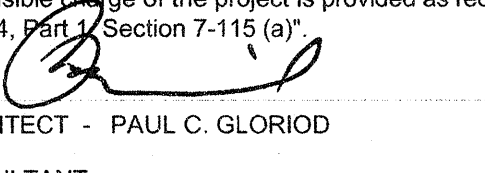


FKP Architects

ARCHITECT OF RECORD

"Architect of Record signature line only; this drawing was not prepared under the direct supervision of the Architect of Record. The direct responsibility for preparation of this sheet lies with its corresponding professional stamp and signature. The signature of the Architect of Record in general responsible charge of the project is provided as required by Title 24, Part 1, Section 7-115 (a)." 

ARCHITECT - PAUL C. GLORIOD

CONSULTANT



 • STRUCTURAL  
• MECHANICAL  
• ELECTRICAL  
• CIVIL

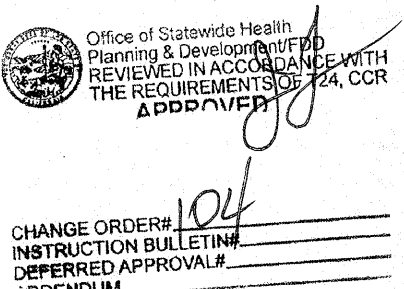
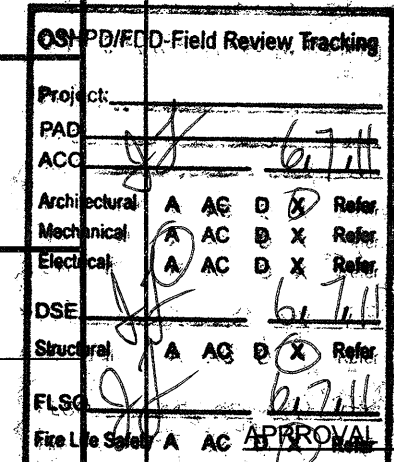
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Project No. 2305-163-07



Changes on these drawings do not consist of materially altered changes to approved drawings and don't require a change order.  
OSHDP review ADO \_\_\_\_\_  
OSHDP review FLSO \_\_\_\_\_  
OSHDP review DSE \_\_\_\_\_

REVISIONS

 01/24/2011 CHANGE ORDER #139  
 06/07/2011 CHANGE ORDER #104



PROJECT NAME

CHILDREN'S HOSPITAL  
OF ORANGE COUNTY

455 S. Main St.  
Orange, CA 92668-3874

TOWER II RECEIVED  
June 08 2011  
McCarthy



PROJECT NUMBER

12011.00  
Increment #7

OSHDP - PROJECT NUMBER

IL 072072-30

NONE

ISSUE

OSHDP PERMIT

DATE

01/27/2010

SCALE



DRAWING TITLE

EQUIPMENT SCHEDULES

DRAWING NUMBER

M0.04

## HEAT EXCHANGER SCHEDULE

SYMBOL	LOCATION	CATALOG		TYPE	SERVICE	STEAM IN			STEAM VALVE		HOT WATER OUT					OPERATING WEIGHT LBS	HX ANCHORAGE DETAIL	PUMPS										CONTROL POWER V/PH/HZ	OPERATING WEIGHT LBS	EMERGENCY POWER SUPPLY	PUMPS ANCHORAGE DETAIL		
		MANUFACTURE	MODEL			PRESSURE PSIG	MIN. CAPACITY LBS/HR	SURFACE SQ.FT	SIZE (IN)	CV	EWT F'	LWT F'	WATER GPM	PD FT	WG			CAPACITY MBH	SYMBOL	MANUFACTURER	MODEL	QTY.	FLOW RATE GPM	STATIC HEAD FT	MIN. EFFICIENCY (%)	RPM	HP (EA)					V/PH/HZ	
	BASEMENT TOWER II	B & G	SU14-6-2	SHELL & TUBE	HYDRONIC WATER	30	9,000	174.0	4"	170	140	180	400	7.7	6500	2000	ISAT		B & G	1510-3G	3	400	85	72	1750	20	480/3/60	120/1/60	750	YES	ISAT		
<div>REMARKS:</div> <div><div>1. STEAM PRESSURE 30 PSI BEFORE THE CONTROL VALVE</div><div>2. ONE STANDBY PUMP WITH PLC CONTROL</div><div>3. PROVIDE VFD FOR ALL PUMPS</div><div>4. ASME AIR SEPARATOR B&amp;G MODEL B-200</div></div>																																	


## BOILER SCHEDULE

I.D. NUMBER	LOCATION	SERVICE	CATALOG		TYPE	NUMBER OF PASSES	BOILER EMISSIONS (NOX PPM)	HEAT CAPACITY			STEAM CAPACITY			TURNDOWN RATIO	FUEL			BOILER PRESSURE (PSI)		ELECTRICAL DATA				WATER VOLUME (GAL)	EMERGENCY POWER	OPERATING WEIGHT (LBS)	ANCHOR DETAIL		
			MANUFACTURER	MODEL				INPUT (MBH)	OUTPUT (MBH)	SURFACE (SQ.)	LBS/HR	HP	EFFICIENCY		GAS (CFH)	OIL (GPH)	BACK-UP OIL	DESIGN	OPERT.	FD FAN MOTOR (HP)	OIL PUMP MOTOR (HP)	AIR COMP. MOTOR (HP)	V/P/H						
B 2.3	BASEMENT NORTH TOWER	STEAM AND HEATING SYSTEM	CLEAVER BROOKS	4W(L)-400	FIRE TUBE	4	9	16,328	13,389	2,000	13,880	400	82.5%	5:1	16,328	116.6	AMBER 363	150	110	30	3/4	5	480/3/60	2,156	YES	51,380	6/M10-03		
REMARKS:																													
1. PROVIDE WITH CLEAVER BROOKS LEVEL MASTER CONTROL.																													
2. PROVIDE WITH MODULATE BOILER FEEDWATER CONTROL VALVE AND THREE VALVE BY-PASS ASSEMBLY SHIPPED LOOSE.																													
3. PROVIDE WITH CLEAVER BROOKS HAWK-ICS ADVANCED BOILER CONTROL SYSTEM. CONTROL SYSTEM TO INCLUDE INTEGRATED PARALLEL POSITIONING CONTROL.																													
4. PROVIDE WITH OXY TRIM SYSTEM.																													
5. PROVIDE WITH VARIABLE SPEED DRIVE FOR THE FD FAN. VFD TO BE FACTORY MOUNTED AND WIRED.																													
6. PROVIDE INTEGRAL OIL PUMP																													


## DEAERATOR FOR STEAM BOILER SCHEDULE

SYMBOL	LOCATION	SERVICE	CATALOG		SERVICE	CAPACITY		CONDENSATE RETURN		MAK-UP WATER		DA STEAM (LBS/HR)	TRANSFER PUMP				FEED WATER PUMP				EMERGENCY POWER	OPERATING WEIGHT (LBS.)	ANCHORAGE DETAIL				
			MANUFACTURER	MODEL		WATER VOLUME (GAL)	CAPACITY (LBS/HR)	PERCENTAGE (%)	TEMP (°F)	PERCENTAGE (%)	TEMP (°F)		NO.	GPM	HEAD (FT)	MOTOR			NO.	GPM				HEAD (FT)	MOTOR		
																RPM	HP	V/PH/H							RPM	HP	V/PH/H
<div>DA 1</div>	BOILER ROOM	CLEAN STEAM	CLEAVER BROOKS	SDP45-900	SPRAY/DUO TANK	900	45,000	60	180	40	70	5,400	2	148	80	3500	7.5	460/3/60	4	42.7	365	3500	7.5	460/3/60	YES	24,000	8/M10-03
<div>REMARKS:</div> <div><div>1. PROVIDE WITH VALVING SO TRANSFER PUMPS CAN BE FEED DIRECTLY TO THE FEED WATER PUMP TO ALLOW FOR DEAERATOR TANK SECTION MAINTENANCE.</div><div>2. PROVIDE EMERGENCY MAKE-UP WATER VALVE TO ALLOW DA TO MAKE-UP 100% SOFT COLD WATER DURING SURGE TANK MAINTENANCE.</div><div>3. PROVIDE TANK MANWAY FOR DEAERATOR SECTION.</div><div>4. PROVIDE SYSTEM WITH CLEAVER BROOKS ADAC CONTROL.</div><div>5. PROVIDE PUMP DISCHARGE PRESSURE TRANSMITTER.</div><div>6. PROVIDE FEEDWATER PUMP LEAD/LAG, STAGING AND AUTOMATIC ROTATION.</div><div>7. PROVIDE TRANSFER PUMP LEAD/LAG, STAGING AND AUTMATIC ROTATION.</div></div>																											




## DEAERATOR FOR CLEAN STEAM GENERATOR SCHEDULE

SYMBOL	LOCATION	SERVICE	CATALOG		CAPACITY			FEEDWATER PUMP						EMERGENCY POWER	OPERATING WEIGHT (LBS.)	ANCHORAGE DETAIL	REMARKS
			MANUFACTURER	MODEL	WATER VOLUME (GAL)	CAPACITY (LBS/HR)	CLEAN STEAM REQUIRED (LBS/HR)	NO.	GPM	HEAD (FT)	MOTOR						
											RPM	HP	V/PH/HZ				
	BASEMENT TOWER II	CLEAN STEAM	SHIPCO	.005 DA-ISTP	180	7,000	1,000	3	12	254	1750	5	460/3/60	YES	6,100	3/M10-03	
<div>REMARKS:</div> <div><div>1. NEMA 12 CONTROL PANEL WITH FUSED CONTROL TRANSFORMER 115 VOLTS.</div><div>4. DA LIQUID FILLED GAUGE ASSEMBLY</div><div>7. HIGH &amp; LOW WATER ALARM SYSTEM</div><div>13. S.S. CHEMICAL FEED QUILL</div><div>16. DRESSER SUCTION COUPLING 2"</div></div> <div><div>2. AUTO-OFF PUMP SELECTOR SWITCHES WITH TEST BUTTONS</div><div>5. 4" INLET BASKET STRAINER</div><div>8. SAMPLING VALVE.</div><div>14. MANIFOLD DISCHARGE PIPING INCLUDING AUTOMATIC CONTROL VALVE</div><div>17. 1" OVERFLOW DRAINER</div></div> <div><div>3. ALARM RELAY/DRY CONTACTS</div><div>6. 2" SUCTION GATE VALVE.</div><div>9. 3 VALVE BYPASS &amp; Y STRAINER AT REGULATORS</div><div>15. LOW WATER CUT-OFF.</div><div>18. VACUUM BREAKER</div></div>																	

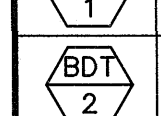
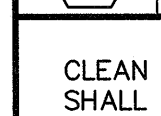
## CLEAN STEAM GENERATOR SCHEDULE

SYMBOL	LOCATION	SERVICE	CATALOG		STEAM IN		STEAM OUT		TANK SIZE DIA X HGT	ELECTRICAL DATA (V/P/HZ)	EMERGENCY POWER	OPERATING WEIGHT (LBS)	ANCHORAGE DETAIL	REMARKS
			MANUFACTURER	MODEL	PRESSURE PSIG	CAPACITY LBS/HR	PRESSURE PSIG	CAPACITY LBS/HR						
	BASEMENT TOWER II	CLEAN STEAM	ACE	PSBH3009-06 SP250	80	2782	30	2500	42" X 84"	120/1/60	YES	5300	9/M10-03	ALL PARTS SHALL BE STAINLESS STEEL
REMARKS: 1. 2-1/2" Y TYPE STRAINER WITH S.S. SCREEN. 2. ELECTRIC STEAM CONTROL VALVE. 3. 2-WAY SOLENOID VALVE TO SHUT OFF CONTROL VALVE. 4. 1" BRONZE VACUUM BREAKER SCREWED INTO STEAM BONNET FITTING. 5. 0-160 PSI PRESSURE GAUGE 6. PRESSURE ACTIVATED SWITCH SHUT OFF CONTROL VALVE 7. NEMA 1 UL CONTROL PANEL 8. 316 S.S. MODULATE LEVEL CONTROL 9. SITEGLASS ASSEMBLY WITH SS. BALL VALVE 10. S.S. BOTTOM BLOWDOWN, ONE QUICK OPENING AND ONE SLOW OPENING. 11. FLOAT & THERMOSTATIC CONDENSATE STEAM TRAP. 12. 2" THICK INSULATION AND JACKET 13. S.S. STEAM SEPARATOR AND FLANGE OUTLET STEAM TO BE CONTROLLED BY OS&Y GATE VALVE. 14. S.S. STEAM SAFETY RELIEF VALVE. 15. S.S. SURFACE BLOW DOWN VALVE 16. S.S. FEED WATER GLOBE VALVE ASSEMBLY WITH BALL VALVE FOR ISOLATION, STRAINER, CHECK VALVE. 17. S.S. PRESSURE TRANSMITTER 18. HIGH WATER CONTROLLER WITH S.S. PROBE. 19. BOILER-MATIC 3000 FOR AUTO-MATIC BLOW DOWN WITH CONDUCTIVITY PROBE CONTROLLER (120/1/60 POWER REQUIREMENT FOR THE CONTROL PANEL)														

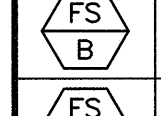

## CONDENSATE RETURN UNIT SCHEDULE

SYMBOL	LOCATION	CATALOG		TYPE	SERVICE	WATER VOLUME (GAL)	TRANSFER PUMP						ELECTRICAL DATA (V/P/HZ)	EMERGENCY POWER	OPERATING WEIGHT LBS	ANCHORAGE DETAIL	REMARKS	
		MANUFACTURER	MODEL				QUANTITY	MFG	MODEL	HP	RPM	FLOW RATE (GPM)						PRESSURE (FT)
	BASEMENT TOWER II	SHIPCO	1003PSS	ATMOSPHERIC	CLEAN STEAM	128	2	SHIPCO	CRN 10-3	5	3500	100	85	460/3/60	YES	2165	1/M10-03	PROVIDE TWO INLET CONNECTIONS GRAVITY AND PUMP CONDENSATE RETURN ALL PART SHALL BE STAINLESS STEEL
	BASEMENT TOWER II	SHIPCO	3005PSSD	ATMOSPHERIC	CLEAN STEAM	50	2	SHIPCO	CRN 20-2	3	3500	35	50	460/3/60	YES	1436	1/M10-03	ALL PART SHALL BE STAINLESS STEEL
	BASEMENT TOWER II	B & G	151.5CC	ATMOSPHERIC	HX	23	2	B & G	650FF	1/2	1750	15	—	120/1/60	YES	500	ISAT	ALL PART SHALL BE STAINLESS STEEL
REMARKS: 1. NEMA 12 CONTROL PANEL WITH FUSED CONTROL TRANSFORMER 115 VOLTS. 2. AUTO-OFF PUMP SELECTOR SWITCHES WITH TEST BUTTONS 3. ALARM RELAY/DRY CONTACTS 4. 2-1/2" DISCHARGE PSI GAUGE ASSEMBLY 5. 4" INLET BASKET STRAINER 6. 4" SUCTION VALVE W/ BALL VALVE 7. GAUGE GLASS ASSEMBLY. 8. DIAL THERMOMETER. 9. HIGH WATER FLOAT SWITCH FOR ALARM.																		

## BLOWDOWN TANK

SYMBOL	LOCATION	SERVICE	CATALOG		WATER VOLUME (GAL)	CONNECTION				SIZE DIA X HGT	OPERATING WEIGHT (LB)	ANCHORAGE DETAIL	REMARKS
			MANUFACTURER	MODEL		INLET (IN)	CW INLET (IN)	OUTLET (IN)	VENT (IN)				
	BOILER ROOM	STEAM	ACE	SB4207	600	2	2	3	5	42"x108"	6800	4/M10-03	AFTER COOLER ASSEMBLY INCLUDING TEMPERING VALVE, INLET STRAIN & THERMOMETER, STAINLESS STEEL TANK.
	HX ROOM	CLEAN STEAM	ACE	SB3607	425	2	2	3	5	36"x105"	3900	3/M10-11	
CLEAN STEAM BLOW DOWN TANK ALL PARTS SHALL BE STAINLESS STEEL													

## FLUE STACK SCHEDULE

ID	LOCATION	SERVING	CATALOG		MATERIAL SELECTION			PIPE SIZE (IN)	TEMPERATURE		REMARKS
			MFG	MODEL	INSULATION CERAMIC	FLUE	CASING		FLUE GAS TEMP. (°F)	CASING TEMP RISE ABOVE AMBIENT (°F)	
	NORTH TOWER BOILER RM.	BOILERS	METAL-FAB	IPIC	1"	304SS	304SS	24"	400°F	80-100°F	1. STACKHEAD ASSEMBLY. 2. DRAIN TO CAP WITH CASING AND CLOSURE. 3. ROOF SUPPORT ASSEMBLY, WALL SUPPORT ASSEMBLY WALL AND FLOOR GUIDES
	TOWER II GENERATOR	GENERATOR	METAL-FAB	IPIC-4	4"	304SS	304SS	14" & 20"	1000°F	80°F-100°F	4. FOR FS-G BASEMENT TO 6TH FLOOR (4) 14" FLUE STACK 7TH FLOOR TO ROOF. COMBINE (2) 14" FLUE STACK TO ONE 20" STACK. ABOVE ROOF, 20" 316 S.S. SCHEDULE 10 WITH OUTDOOR S.S. JACKET AND INSULATION. 5. PROVIDE APPROVED THIMBLE (S) WHERE EXHAUST PASSES THROUGH COMBUSTIBLE WALLS OR PARTITION.
DEFERRED APPROVAL REQUIRES FOR BOILERS' AND GENERATORS' FLUE STACK SEISMIC ANCHORAGE AND SUPPORT.											