

three inches = one foot
one and one half inches = 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

HVAC FANS Specification 23-34-00															Preferred Vendor
MARK # & LOCATION	SYSTEM	LOCATION	FLOW RATED (CFM)	ROTATION	S.P IN WG.	Model/Size	DRIVE	MOTOR DATA							
								BHP	HP	SPEED	VOLT	PHASE	FLA	DRIVE	
EF-118 ROOF MOUNTED	DECONTAMINATION	ROOF	2,100	CW-BAL	4	SFW-212-30	BELT	2.16	3	3076	460	3	4.8	VFD	GREENHECK OR APPROVED EQUAL WITH WEATHER HOOD, ACCESS DOOR AND BELT GUARD, FAN HOUSING DRAIN CONNECTION, AND HI-PRO COATING INLET AND OUTLET FLANGES, ISOLATOR MOUNTING RAILS OR RESTRAINED ISOLATORS 1.36IN DEFLECTION FHS-1-70 EQUIPMENT SUPPORTS SWB1 (FOR FAN AND DUCTWORK) DISCONNECT SWITCH WEATHERPROOF. VFD DRIVE AND CONTROLLER WITH AUTOMATION TO JOHNSON CONTROLS FACILITY EXPLORER 5TH FLOOR SUPERVISORY PANEL FX-PCG. SEE EP-401
EF-119 ROOF MOUNTED	ALTERNATE AND MANUAL CART WASH	ROOF	2,100	CW-BAL	4	SFW-212-30	BELT	2.16	3	3076	460	3	4.8	VFD	

HEAT RECOVERY SYSTEM – RECIRCULATION PUMP														
MARK # & LOCATION	SYSTEM	TYPE	CAPACITY (GPM)	HEAD (FT)	IMPELLER SIZE	SIZE		MOTOR DATA					Preferred Vendor	
						DISCHARGE	SUCTION	BHP	HP	RPM	VOLT	PHASE		
HRCP AHU-20 MECH ROOM	HR	INLINE	50	10	5	2	2	.30	.75	1750	460	3	BELL AND GOSSETT SERIES 80 -2 X 2 X 7 Or Approved Equal	

CHILLED WATER – RECIRCULATION PUMP													
MARK # & LOCATION	SYSTEM	TYPE	CAPACITY (GPM)	HEAD (FT)	IMPELLER SIZE	SIZE		MOTOR DATA					Preferred Vendor
						DISCHARGE	SUCTION	BHP	HP	RPM	VOLT	PHASE	
CHP-1 CC-20 BASEMENT MECH ROOM	CH	INLINE	50	10	5	2	2	.30	.75	1750	460	3	BELL AND GOSSETT SERIES 80 – 2x 2 –7 Or Approved Equal

THE VALUES OF HP, FLOW(CFM), GPM ARE INDICATIVE OF RATED OR MAXIMUM CAPACITY.
FOR ACTUAL CONTROL POINTS FOLLOW SEQUENCE OF OPERATIONS AND OTHER CONTROL DESCRIPTIONS ELSEWHERE.

PRESSURE INDICATING MONITORS AND PRESSURE SENSOR									
MARK	Type	LOW ALARM CONTACTS	DISPLAY RANGE IN W.C.	LOW ALARM RANGE IN W.C.	HIGH ALARM RANGE IN W.C.	ELECTRICAL SUPPLY	OPERATING TEMPERATURE	POWER DISSIPATION	MANUFACTURER
PIT5	PRESSURE INDICATING MONITORS WITH BACNET CONNECTIONS	MAX CURRENT: 5A MAX VOLTAGE: 150VDC,250VAC MIN SWITCH : 10mA,5VDC	-0.2 TO +0.2	-0.195 TO +0.195	-0.195 TO +0.195	24V, 5W MAX	32 TO 120 °F	--	TSI MODEL 8630-PM-BAC WITH 120:24 VAC TRANSFORMER
PS1 PS2	PRESSURE SENSOR TWO NEW	--	-0.2 TO +0.2	--	--	--	55 TO 95 °F	0.16W @ 0 IN W.C. 0.2W @ 0.001 IN W.C.	WITH TSI MODEL 8630-PM

Strainers VA Specifications – Steam and Condensate– 232213									
Strainer No.	Qty.	Size	Service	Type	Connection	Screen Perforation Size (in.)	Body Material	Screen Material	Blow-off Valve
ST-1	1	2 1/2"	Chilled Water	Y-Type With Basket Strainer	flanged	0.0625	Cast Iron ASTM A 126 B	Stainless Steel 18-8	1/4" NPT Ball Valve
ST-2	1	2"	STEAM	Y-Type With Basket Strainer	N.P.T.	0.033	Bronze ASTM B62	Stainless Steel ASTM A240	1/4" NPT Ball Valve
ST-3	1	3/8"	HOT WATER HEATING	Y-Type With Basket Strainer	N.P.T.	0.033	Bronze ASTM B62	Stainless Steel ASTM A240	1/4" NPT Ball Valve

Air Vent VA Specifications – Chilled Water – Hydronic Piping – 232113 Steam and Condensate– 232213			
Max Pressure	Type	Location	Manufacturer
250#	Balanced Pressure Thermostatic Air Vent	Chilled Water Return at AHU-20	Spirax-Sarco Model VS204 or Approved Equal
250#	Balanced Pressure Thermostatic Air Vent	HOT WATER HEATING VAV	Spirax-Sarco Model VS204 or Approved Equal

NOTES:
1. INSTALLATION CONTRACTOR SHALL PROCURE, CONSTRUCT AND COMMISSION AND INSTALL REQUIRED ADDITIONAL AUXILIARIES THAT ARE NOT LISTED HERE AND FOLLOW MANUFACTURERS RECOMMENDATIONS FOR A FULLY FUNCTIONAL SYSTEM.

Valves VA Specifications – Chilled Water – Hydronic Piping – 232113 Steam and Condensate– 232213							
Size	Service	Valve Type	Rating	Connections	Body Material	Seats/ Seals	Remarks
1/2"	Chilled Water	Ball	600# WOG	N.P.T.	Bronze	RPTFE	Vent/Drain Valves
1/2"	Chilled Water	Ball	600# WOG	N.P.T.	Bronze	RPTFE	PI Valves
3"	Hot Water heating	Gate	300# WOG	flanged	Bronze	Stainless Steel	Isolation Valves
3"	Chilled Water	Gate	300# WOG	flanged	Bronze	Stainless Steel	Isolation Valves
3/4"	Chilled Water	Gate	300# WOG	N.P.T.	Bronze	Stainless Steel	DRAIN Valves
1 1/4"	Condensate	Gate	300# WOG	N.P.T.	Bronze	Stainless Steel	Isolation Valves
1"	Chilled Water	Ball	300# WOG	N.P.T.	Bronze	RPTFE	Isolation Valves


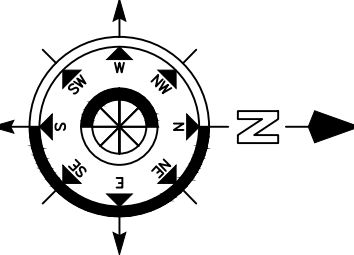


PRV/Regulator VA Specifications – Chilled Water – Hydronic Piping – 232113 Steam and Condensate– 232213						
Valve No.	Size	Service	Inlet Pressure	Outlet Pressure	Flow	Manufacturer
PRV-1	1 1/4"	Steam	60#	15#	400 lb/hr	ARMSTRONG or Approved Equal
PSV-1	1 1/2"	Steam	60#	15#	600 lb/hr	ARMSTRONG or Approved Equal

Check Valves VA Specifications – Chilled Water – Hydronic Piping – 232113 Steam and Condensate– 232213				
Valve No.	Size	Service	Type	Connection
CKV-1	2"	Condensate	Swing	2" N.P.T. Screwed

Control Valves									
Control Valve #	QTY	SERVICE	Elec Coil Control Valve Type	Elec Coil Control Valve Size	ELECTRICAL POWER REQUIREMENT	TRANSFORMER SIZING	MANUFACTURER	REFERENCE	
FCV-1	1	STEAM	2 – WAY Modulating VALVE		± 24VAC ± 20%, 60HZ ± 24VDC ± 10%, 60HZ	10 VA	BELIMO OR EQUAL	MP-100 MI-600 MI-601	
FCV-2	1	CHILLED WATER	2 – WAY Modulating Actuator		± 24VAC ± 20%, 60HZ ± 24VDC ± 10%, 60HZ	5 VA	BELIMO OR EQUAL	MP-100 MI-600 MI-601	
FCV-3	1	ENERGY HEAT RECOVERY	3 – WAY Modulating Actuator		± 24VAC ± 20%, 60HZ ± 24VDC ± 10%, 60HZ	5 VA	BELIMO OR EQUAL	MH-600 MI-600 MI-601	
FCV-4	1	STEAM GUN ON/OFF VALVE	3 – WAY ON/OFF Actuator	1" NPT 4 GPM MIN.	± 24VAC ± 20%, 60HZ ± 24VDC ± 10%, 60HZ	5 VA	AMSTRONG EMECH E25S OR EQUAL	MP-100 MI-600 MI-601	
CV-1	2	HOT WATER HEATING SUPPLY	2 – WAY Modulating Actuator	3/8" NPT	± 24VAC 2.5W RUNNING 1W HOLDING 4-20 mA	5 VA	BELIMO OR EQUAL	MP-100 MI-600 MI-601	

Gauges VA Specifications – Chilled Water – Hydronic Piping – 232113 Steam and Condensate– 232213								
Service	Type	Connection	Range	Figure Intervals	Grad. Marks	Case Material	Dial Size	Tube Type
Chilled Water	General service pressure gauge– grade 2A	1/2" N.P.T. male-bottom brass	0-100 PSI	10PSI	1PSI	Aluminum	4 1/2"	Bronze Bourdon
Hot Water	General service pressure gauge– grade 2A	1/2" N.P.T. male-bottom brass	0-100 PSI	10PSI	2PSI	Aluminum	6"	Bronze Bourdon
Steam	Corrosive service pressure gauge– grade 2A	1/2" N.P.T. male-bottom type 316 S.S.	0-100 PSI	10PSI	2PSI	Stainless Steel	4 1/2"	Type 316 Stainless Steel Bourdon tube
Steam	Thermometer general service	1/2" N.P.T. male-bottom Brass	0-100°F	5 Degrees	2 Degrees	Aluminum	6"	Mercury Liquid-filled type

BIDDING DOCUMENTS
FULLY SPRINKLERED

35% SD SUBMITTAL 35% SD REVISION 1 65% DD SUBMITTAL 35% CD SUBMITTAL 100% CD SUBMITTAL BIDDING DOCUMENTS AMENDMENT 2	1/11/4/2012 1/18/2012 1/22/2012 01/30/2013 02/27/2013 06/10/2013 8-2-2013	 Dept. of Veterans Affairs Richard L. Roudebush VA Medical Center 1481 W. 10th Street Indianapolis, In 46202	CERTIFIED BY:	NORTH REFERENCE 	ARCHITECT/ENGINEERS:  AMERICAN STRUCTUREPOINT INC. 7260 Shadeland Station Indianapolis, Indiana 46266 TEL 317.547.5580 FAX 317.543.0270 www.structurepoint.com	Drawing Title MECHANICAL SCHEDULES SHEET 2	Project Title RENOVATE SFS	Project Number 583-12-107 Building Number 1	Engineering and Facilities Management Services 
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								Drawn DS	41 of 55