AIR HANDLING UNIT SCHEDULE

EQUIP #	AREA SERVED	WEIGHT (LBS)	FAN DATA: AIRFLOW (CFM)	FAN DATA: BELT DRIVEN PLENUM FAN TYPE	FAN DATA: BHP	FAN DATA: MHP	FAN DATA: RPM	FAN DATA: ESP (IN. W.G.)	FAN DATA: TOTAL S.P. (IN. W.G.)	FAN DATA: OUTSIDE AIR (CFM)	COOLING COIL DATA (CHILLED WATER): CAPACITY: TOTAL (MBH)	CAPACITY: SENSIBLE (MBH)	ENT. AIR: db (°F)	ENT. AIR: wb (°F)	LVG. AIR: db (°F)	LVG. AIR: wb (°F)	WATER: EWT (°F)	WATER: LWT (°F)	GPM	WPD MAX (FT. W.G.)	APD MAX (IN. W.G.)	FACE VELOCITY MAX (FPM)	ROWS	PRE-HEAT COIL DATA (STEAM): MBH	EAT (°F)	LAT (°F)	STEAM (LB/HR)	STEAM PRESSURE (PSIG)	APD MAX (IN. W.G.)	ROWS	FILTERS: TYPE: PF-1 MERV 7 (APD " WG)	TYPE: PF-2 MERV 11 (APD " WG)	TYPE: FINAL MERV 14 (APD " WG	TOTAL APD (IN. W.G.) (CLEAN)	TOTAL APD (IN. W.G.) (DIRTY)	UNIT ELECTRICAL: VOLTS	FLA	MCA	MOCP	SWITCH RATING	BASIS OF DESIGN	REMARKS
AHU 3C-AHU65	SPD SUITE	4,750	9,400	(2) 20 NR	13	15	2,770	2.5	8	9,400	615	365	93	75	52	50	44.0	54.0	160	21.0	0.8	500	8	536	10	70	626	15	1.0	2	1" DEPTH 0.31 - 1.0"	2" DEPTH 0.34 - 1.0"	12" DEPTH 0.5 - 1"	1.15	3	460/3/60	21	26.3	30	30	TRANE SIZE 21 CLIMATE CHANGER OR EQUAL	MERV 7,11 & 14 FILTERS; DOUBLE WALL CONSTRUCTION; ECM MOTOR; 8-ROW TYPE WD COOLING COIL WITH 5/8" COPPER TUBES, COPPER FINS & COPPER HEADERS; 2-WAY SLOPED COPPER DRAIN PANS; FACTORY VFDs; INTEGRAL FACE & BYPASS (IFB) STEAM COIL; CLEAN STEAM HUMIDIFIER;

INTERNAL STATIC - " WG	
SECTION	ADP @ 500 FPM
PF-1	1.00
PF-2	1.00
IFB	0.50
COIL	1.00
HUM	0.04
FAN	0.00
DIFF	0.01
FINAL	1.00
DISCH	0.25
TOTAL	4.80

DISHWASHER UTILITY REQUIREMENTS

SERVICES

ON UNIT CONNECTION	SERVICES PIPE SIZE TO WASHER	PRESSURE RANGE DYNAMIC	FLOW RATE	TEMPERATURE	CONSUMPTION PER CYCLE
(CW) = COLD WATER ✳ 3/4" (20mm) NPT COUPLING	1" NPT (25mm)	30–80 PSIG (200–400 kPa) SEE NOTE #1	6–8 GPM (23–30 l/MIN)	NOT TO EXCEED 90° F (32° C)	8.72 GAL/PHASE (33 LITERS)
(HW) = HOT WATER ✳ 3/4" (20mm) NPT COUPLING	1" NPT (25mm)	30–80 PSIG (200–400 kPa) SEE NOTE #1	6–8 GPM (23–30 l/MIN)	110–140° F (43–60° C)	8.72 GAL/PHASE (33 LITERS)
(PW) = PURIFIED WATER ✳ 3/4" (20mm) NPT COUPLING	1" NPT (25mm)	8–60 PSIG (50–400 kPa) SEE NOTE #1	5–9 GPM (18–34 l/MIN)	N/A	8.72 GAL (33 LITERS)
(D) = DRAIN 2" (50mm) DIA.	N/A	N/A	20 GPM MINIMUM SEE NOTE #3	N/A	N/A
(ED) = EXHAUST DUCT 3" (75mm) DIA. SEE NOTES 5 & 6	N/A	N/A	140–175 CFM	120–140° F (49–60° C)	N/A
(S) = STEAM 1/2" (13mm) NPT	3/4" NPT (20mm)	45–90 PSIG (300–500 kPa)	2.3 LB/MIN PEAK (1.04 kg/MIN) 1–2 LB/MIN AVG (.45–.91 kg/MIN)	N/A	1.43 LB/Min (0.65 Kg/Min)
(C) = CONDENSATE RETURN 1/2" (13mm) NPT	3/4" NPT (20mm)	N/A	N/A	N/A	N/A
(A) = COMPRESSED AIR SEE NOTE 18 1/8" (3mm) QUICK CONNECT	1/4" NPT (6mm)	60–90 PSIG (400–530 kPa) SEE NOTE #1	N/A	N/A	N/A

✳ SEE WATER QUALITY NOTE #15

✳✳ CONSUMPTION BASED ON INCOMING STEAM TEMPERATURE

(E) ELECTRICAL SUPPLY 60/60 HZ

SERVICE	STEAM HEATED		ELECTRIC HEATED – OPTION	
	W/O DRYING	W/ DRYING	W/O DRYING	W/ DRYING
208V, 3PH, 60 HZ	20A, 2.5KW	30A, 6.9KW	60A, 17.5KW	60A, 17.5KW
230–240V 3PH, 50/60 HZ	16A, 2.5KW	20A, 6.9KW	50A, 17.5KW	50A, 17.5KW
380–415V 3PH, 50/60 HZ	10A, 2.5KW	16A, 6.6KW	35A, 20.5KW	35A, 20.5KW

NOISE LEVEL– dBA	
WASHING	56 dBA
WASHING & DRYING	58 dBA
WEIGHT– LB (Kg)	
UNCRATED	880 LBS (435 Kg)
CRATED	975 LBS (483 Kg)
TYPICAL HEAT LOSS– BTU/HR	

MODEL	WHOLE	CLEAN AREA
SINGLE DOOR	3500	N/A
DOUBLE DOOR	2200	1300

MINIMUM CLEARANCE REQUIRED FOR MOVING INTO POSITION		
	ACTUAL	CLEARANCE
WIDTH	3'–7 3/4"	3'–9 3/4"
HEIGHT	6'–1 3/4"	6'–9 3/4"
DEPTH	3'–2 1/4"	3'–4 1/4"

TRANSFER FAN SCHEDULE

EQUIP #	FAN HP	VOLTS	MAX CFM @ " TSP	MCA (ONE CKT*)	MOCP	SWITCH RATING	UNIT WEIGHT	UNIT DIMENSIONS (LxWxH)	MFGR/ MODEL #	REMARKS
XFR FAN 1 & 2	1/8	120-1Ø	439 @ 0.25	5	15	15	--------	18 x 14.4 x 14.5	GREENHECK SP-A510	VFD CONTROLLED; SPRING SUSPENSION; SEE SEQ OF OPS
XFR FAN 3	1/2	120-1Ø	2044 @ 0.25	9.8	15	15		35 x 14.8 x 14.8	GREENHECK CSP-A2150	VFD CONTROLLED; SPRING SUSPENSION; SEE SEQ OF OPS
XFR FAN 4	3/4	120-1Ø	3460 @ 0.25	13.8	15	15	--------	45.5 x 16.5 x 16.5	SLANTFIN MULTIPAK 90	VFD CONTROLLED; SPRING SUSPENSION; SEE SEQ OF OPS

AIRFLOW CONTROL VALVES

EQUIP TYPE	MAX CFM	APD (IN. WG)	UNIT DIMENSIONS (LxWxH)	MFGR/ MODEL # OR EQUAL	REMARKS
8"Ø VALVE	650	0.3	8"Ø x 24"L ++	TEK AIR AV 3112-08	DDC CONTROLLER, COOLING ONLY; SEE SEQ OF OPS
12"Ø VALVE	1450	0.3	12"Ø x 24"L **	TEK AIR AV 3112-12	DDC CONTROLLER, COOLING ONLY; SEE SEQ OF OPS
24x12" VALVE	3200	0.3	30 x 24 x 26**	TEK AIR AV 3212-24	DDC CONTROLLER, COOLING ONLY; SEE SEQ OF OPS
36x12" VALVE	5000	0.3	30 x 36x 26**	TEK AIR AV 3212-36	DDC CONTROLLER, COOLING ONLY; SEE SEQ OF OPS
++ - HEIGHT OF SHEETMETAL IS 8" - ALLOW 14" ABOVE FOR ACCESS TO BOX-MOUNTED CONTROLS					
** - HEIGHT OF SHEETMETAL IS 12" - ALLOW 14" ABOVE FOR ACCESS TO BOX-MOUNTED CONTROLS					

SPD SUPPLY / EXHAUST AIR FLOW SCHEDULE

ROOM	ZONE	AREA (SQ FT)	CEILING HT (FT)	AIR CHANGES PER HOUR	SUPPLY (CFM): CLASS.	SUPPLY (CFM): AIR FLOW	EXHAUST (CFM): TRANSFER	EXHAUST (CFM): SUPPLY AIR TRANSFERRED	EXHAUST (CFM): EXHAUST	REMARKS
SCOPE STERILIZATION	1	216	9	10	++	500	375	75%		PROVIDE TIGHT SEAL BETWEEN ADJOINING ROOMS
STERILE PREP	2	1335	9	10	++	2500	1875	75%		PROVIDE TIGHT SEAL BETWEEN ADJOINING ROOMS
SCOPE CLEANING	3	248	9	10	+	500	375	75%		PROVIDE TIGHT SEAL BETWEEN ADJOINING ROOMS
STORE ROOM	4	5700	9	4	0	3420	3000	88%		ZERO BALANCE AREA - MOST AIR MIGRATES TO ADJOINING AREAS
SOILED RECEIVE. & DECONTAM.	5	1056	9	10	--	1584	0	0%	1584	NO TRANSFER FROM ZONE 5. ONLY DIRECT EXHAUST
TOTAL SPD		8555		10	--	8504	5625	78%	7209	EQUALS SUM OF ZONE 1-4 TRANSFERS + ZONE 5 EXHAUST

Sequence of Operation and BMS Monitoring & Alarm for SPS

General Notes:

Each System is to have a local control panel which will provide for local display of system status, set points and provide for unit set point adjustment. Provide sensors and control valves meeting the project specifications.

SPS Zone Control

The SPS area consists of 5 zones as described by the attached table. The CFM of supply air and exhaust area is provide on the table. Also the static pressure control target listed as (+, ++, 0 or-) is also listed on the table and indicates the pressure relative to the adjacent hallway.

The intent of the control is to supply and exhaust continuously each zone while maintaining the static pressure target.

Supply a Paragon Controls, SPM 4000 or equal Space Pressurization Controller and annunciator panel for each of the 5 zones. Supply the required pressure monitors and interfaces to the VAV box and the exhaust fan to provide for the system to operate as described below.

Provide for BMS monitoring and remote set point adjustment via Bacnet by others. See the BMS points list.

Each of the SPM 4000 controllers will monitor the airflow into the individual zones and static pressure relative to the adjacent hallway. For normal system operation, the main SPS AHU operates continuously and supplies the required air to the two supply header ducts and into the SPS. The flow into each zone is continuously monitored and adjusted via the VAV box on the supply duct. The exhaust from each zone transferring to zone 5 is controlled via VFDs on each zone transfer fan. Zone 5 operates to exhaust into the main exhaust duct and in turn to outside the building. Supply interface to each SPM 4000 controller at the existing building BMS system via the appropriate interface.

After initial balance, the system will operate continuously and provide the required ventilation to the 5 zones. Transients caused by occasional door openings will be compensated by the controls so as to maintain the desired level of room pressure. If the static pressure falls outside the required airflow and static pressure set points and after a time delay provide annunciation at the SPM 4000 and remotely monitor at the existing BMS system. The SPM 4000 annunciators are to be wall mounted in each zone.

Provide a Baulin-tube indicator for each zone to provide positive indication of airflow and pressure status. Airflow Directional Incorporated ADI 69 or equal is to be provided.

For zones required for reheat, provide space temperature monitoring to control a steam valve for control of space temperature.

SPS AHU

For the new AHU unit provide a unit based controller with integral display to provide for unit control and status, inlet face and bypass damper, fan speed and VFD, the cooling and steam valves and monitor outside temperature, discharge air temperature and humidity, discharge airflow and static pressure. Also provide for monitoring the unit filter(s) status.

The AHU controller will operate continuously and the unit VFD will modulate to supply the required airflow and static pressure to the discharge air duct. The inlet face and bypass damper, the steam and cooling coil control valves will modulate to maintain discharge temperature set point. The humidifier will stop, start and modulate to maintain the desired discharge air humidity.

Provide for BMS monitoring and remote set point adjustment via Bacnet by others. See the BMS points list.

Exhaust Fan

For the existing exhaust fan, provide a local control panel with a VFD to provide for modulation of the main exhaust from the SPS. Provide a P&ID display for the complete system.

Provide for BMS monitoring and remote set point adjustment via Bacnet by others. See the BMS points list.

GENERAL NOTES:

SHEET NOTES:

LEGEND:

CV BOX	PRESSURE REGULATING BOX
VFD	VARIABLE FREQ DRIVE
AHU	AIR HANDLER
XF	TRANSFER FAN
MS	MOTOR STARTER
FM	AIRFLOW MEASURING DEVICE IN VAV BOX
PS	STATIC PRESSURE SENSOR RELATIVE TO CORRIDOR
AI	ALARM LIGHT INSIDE SPACE
LCP	LOCAL CONTROL PANEL
N	NEW
E	EXISTING

100% ISSUED FOR CONSTRUCTION
COMPLETION ITEM NO. 3
FULLY SPRINKLERED

Revisions	Date

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