

MAKE-UP AIR HANDLING UNIT SCHEDULE

MARK	FAN DATA				HEATING COIL DATA - STEAM					PRE-FILTER DATA			FILTER DATA			ELECTRIC SERVICE		MOTOR STARTER		UNIT WEIGHT (LBS)	REMARKS		
	AIR FLOW CFM	MOTOR HP	FAN RPM	ESP *WC	TOTAL MBH	EAT DEG. FDB	LAT DEG. FDB	STEAM PRESSURE (PSIG)	FLOW (LBS/HR)	AIR SIDE PRESSURE DROP (IN. WC.)	MAX FACE VELOCITY (FPM)	TYPE	APD (IN. WC.) CLEAN	APD (IN. WC.) DIRTY	TYPE	CLEAN	DIRTY	VOLTS	PH			SIZE	TYPE
MAU-1	24,000	30	976	1.75	1177	24	69	15	1244	0.25	745	35% EFF.	0.08	0.5	85% EFF.	.10	0.75	460	3	2	NEMA 4	13,500	SEE NOTE 1, 2

NOTES:
 1. PROVIDE UNIT DESIGNED FOR INTERIOR ROOF MOUNTING CONSISTING OF THE FOLLOWING: MIXING BOX, FILTER SECTION, HORIZONTAL STEAM COIL, INTEGRAL FACE AND BY-PASS DAMPER SECTION, AND HORIZONTAL FAN SECTION ALL IN DOUBLE WALL UNIT INSTALLED ON A 8 INCH CURB.
 2. PROVIDE PREMIUM EFFICIENCY INVERTER RATED TEFC MOTOR DESIGNED FOR VARIABLE FREQUENCY DRIVE (VFD) CONTROL.

EXHAUST FAN SCHEDULE

MARK	LOCATION	TYPE	AIR-FLOW CFM	ESP *WC	FAN RPM	DRIVE	MOTOR			MOTOR STARTER		WEIGHT (LBS)	REMARKS
							HP	VOLTS	PHASE	SIZE	TYPE		
EF-1	SHELTER ROOF	CENTRIFUGAL FAN	24,000	3.25	901	BELT	20	460	3	2	NEMA 4	3697	NOTE 1, 4

NOTES:
 1. PROVIDE FAN, ROOF CURB, AND PREMIUM EFFICIENCY INVERTER RATED TEFC MOTOR DESIGNED FOR VARIABLE FREQUENCY DRIVE (VFD) CONTROL. PROVIDE WEATHER ENCLOSURE FOR MOTOR AND BELT ASSEMBLY.
 2. PROVIDE FAN WITH GRAVITY BACKDRAFT DAMPER, ROOF CURB, STARTER/DISCONNECT SWITCH AND PREMIUM EFFICIENCY OPEN MOTOR.
 3. PROVIDE VARIABLE FREQUENCY DRIVE (VFD) CONTROL FROM PAINT BOOTH CONTROL PANEL.
 4. FAN SELECTION IS PROVIDED FOR ESTIMATING PAINT BOOTH CONTROL PANEL ELECTRICAL REQUIREMENTS, FINAL PERFORMANCE SELECTION SHALL BE INCORPORATED CONTRACTOR DESIGN OF PAINT BOOTH ENCLOSURE AND FILTERS.

STEAM TRAP SCHEDULE

MARK	LOCATION	SERVICE	TYPE	CAPACITY (LBS/HR)	STEAM PRESSURE		CONNECTION SIZE (IN.)	REMARKS
					INLET (PSIG)	OUTLET BACK (PSIG)		
ST-1	THROUGHOUT HPS PIPING	MPS DRIP TRAPS	INVERTED BUCKET	100	30	5	3/4	NOTE 2, 4
ST-2	PAINT BOOTH SHELTER	MAU LPR	INVERTED BUCKET	1244	15	0	1	NOTE 1, 3, 4
ST-3	MECHANICAL ROOM	PRV DRIP TRAP	INVERTED BUCKET	100	30	0	3/4	NOTE 2, 4, 5

NOTES:
 1. PROVIDE CAST IRON BODY (RATED FOR 250 PSIG) AND LARGE THERMOSTATIC AIR VENT.
 2. PROVIDE CAST IRON BODY (RATED FOR 250 PSIG)
 3. TRAP SIZE BASE ON SINGLE SECTION COIL. FOR MULTIPLE SECTION COILS, PROVIDE ADDITIONAL TRAPS AS REQUIRED AND SIZED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
 4. PROVIDE TRAP SELECTIONS FOR TRAPS TO BE LOCATED IN UNHEATED AREA SUBJECT TO FREEZING CONDITIONS.
 5. PROVIDE UNIVERSAL STEAM TRAP STATION WITH INTEGRAL ISOLATION VALVES, STRAINER W/ BLOWDOWN AND TEST VALVE

DUCT CONSTRUCTION AND LEAK TEST SCHEDULE

SYSTEM	DUCT PRESSURE CLASS		DUCT SEAL CLASS	DUCT LEAK CLASS	DUCT LEAK PRESSURE	DUCT TEST TYPE	REMARKS
	FAN SUCTION	FAN DISCHARGE					
MAU-1	- 2 IN. WG.	+ 2 IN. WG.	A	6	NOTE 2	NOTE 3	---
EF-1	---	---	---	---	---	---	NOTE 1, 2, 4

NOTE:
 1. ALL DUCT JOINTS IN PAINT BOOTH EXHAUST DUCTWORK SHALL BE WELDED LIQUID TIGHT.
 2. DUCT TEST PRESSURE SHALL BE 90% OF DUCT PRESSURE CLASS.
 3. TEST PER SMACNA HVAC AIR DUCT LEAKAGE TEST MANUAL, FIRST EDITION.
 4. PAINT BOOTH EXHAUST DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA INDUSTRIAL DUCT CONSTRUCTION STANDARDS FOR CLASS 1 DUCT SYSTEM, SUBJECT TO A MINIMUM NEGATIVE STATIC PRESSURE OF 2 IN. WG. AND A MINIMUM POSITIVE PRESSURE OF 2 IN. WG.

PRESSURE POWERED PUMP SCHEDULE

MARK	CONDENSATE LOAD (LBS/HR)	TOTAL LIFT PRESSURE (PSIG)	MINIMUM FILLING HEAD (INCHES)	PUMP SIZE (INCHES)		REMARKS
				INLET	OUTLET	
PPP-1	1245	30	12	1-1/2	1	NOTE 1, 2

NOTES:
 1. PROVIDE DUCTILE IRON BODY PUMP WITH WELDED STEEL INTERNALS AND WELDED STEEL INLET AND OUTLET CHECK VALVES FACTORY INSTALLED TO PUMP ASSEMBLY.
 2. 20 GALLON RECEIVER, 3/4 HP DUPLEX MOTORS.

DESIGN CONDITIONS

AREA	INDOORS				OUTDOORS				REMARKS
	SUMMER		WINTER		SUMMER		WINTER		
	DEG. F. DB.	% RH	DEG. F. DB.	DEG. F. DB.	DEG. F. DB.	DEG. F. WB.	DEG. F. DB.		
PAINT BOOTH	NOTE 1	---	68	90	78	24	---	---	

NOTE: 1. MECHANICAL HEATING AND VENTILATION ONLY

PRESSURE SAFETY VALVE (PSV) SCHEDULE

MARK	FLOW CHARACTERISTICS			VALVE SIZE		REMARKS
	MEDIUM	FLOW (LBS/HR)	SYSTEM OPERATING PRESSURE (PSIG)	INLET (INCHES)	OUTLET (INCHES)	
PSV-1	STEAM	1244	30	2-1/2	3	NOTE 1, 2

NOTES:
 1. PROVIDE FLANGED CAST STEEL SAFETY VALVE CONFORMING TO ASME CODE SECTION I AND ASME SECTION VIII.
 2. VALVE TRIP POINT SHALL BE SET AT 10PSI ABOVE SYSTEM OPERATING PRESSURE.

CONTROL VALVE SCHEDULE



MARK	UNIT SERVED	SERVICE	TYPE	ACTION	CAPACITY LBS/HR	STEAM PRESSURE		MINIMUM CV	NOM. SIZE (INCHES)	REMARKS
						INITIAL	FINAL			
V-1	MAU-1	STEAM	2-WAY	2-POSITION	1244	21	15	20	1-1/2"	NOTE 1

NOTE: 1. 24V ACTUATOR. ALL VALVES SHALL BE CAPABLE OF TIGHT CLOSURE AGAINST SYSTEM PRESSURE.

PRESSURE REDUCING VALVE (PRV) SCHEDULE

MARK	MEDIUM	FLOW CHARACTERISTICS		VALVE SIZE		VALVE CV	REMARKS
		FLOW (LBS/HR)	PRESSURE (PSIG)	INLET (INCHES)	OUTLET (INCHES)		
PRV-1	STEAM	1244	NOTE 2	30	1-1/2	7.4	NOTE 1
PRV-2	AIR	--	110	NOTE 3	3/4	-	DIRECT ACTING TYPE

NOTES:
 1. PROVIDE FULL PORT PRESSURE PILOT OPERATED STEAM REGULATOR VALVE ASSEMBLY.
 2. SELECT VALVE BASED ON INLET PRESSURE RANGE OF 90 TO 65 PSIG
 3. SELECT VALVE BASED ON OUTLET PRESSURE RANGE OF 20 TO 35 PSIG

REV		DATE		APPR	
MAU FAN UPGRADE					
 BOWMAN, FOSTER & ASSOC. CONSULTING ENGINEERS #4 INTERSTATE CORP. CENTER NORFOLK, VA 23502 2424 26TH ROAD SOUTH ARLINGTON, VA 22206					
 NORTH CAROLINA PROFESSIONAL ENGINEER S. G. ROBERTS 09-005A					
APPROVED					
ACTIVITY - SATISFACTORY TO					
DATE APPROVED					
FOR EFD FOR COMMANDER NAVFAC					
DATE					
A/E DESIGN					
LRH DRAWN					
WLF REVIEW					
SGR CHECK					
MED					
OC					
CHIEF ARCH/ ENGR.					
PROJECT MANAGER					
FIRE PROTECTION					
BRANCH MANAGER					
DESIGN DIRECTOR					
DEPARTMENT OF THE NAVY NAVY FACILITIES ENGINEERING COMMAND MARINE CORPS AIR STATION, CHERRY POINT, N.C. REPLACE PAINT BOOTH, BUILDING 250 SCHEDULES					
CODE ID. NO. 80091 SIZE D					
SCALE: AS SHOWN					
EFD NO. WR4927581					
STA. PROJ. NO. CP0936M					
SPEC. NO.					
CONSTR. CONTR. NO.					
NAVFAC DRAWING NO. 12548525					
SHEET 22 OF 26					
M-601					
DRAWING REVISION JULY 2003					

