MAKE-UP AIR UNIT SCHEDULE

MARK	MANUF.	MODEL NUMBER	HEATING COIL							BLOWER			ELECTRICAL VOLT/PH	ACCESSORIES
			MBH	△T (°F)	LIQUID	GPM	PD	E.W.T.	L.W.T.	CFM	E.S.P.	HP		
MAU2	TEMTROL	ACH550-UH -06A9-4	408.2	70	WATER	41.1	3.8	180	160	5400	1"	3	460/3	DM,FSR,BD

NOTES:
1. CONTRACTOR SHALL CONFIRM EXISTING POWER V/PH, PRIOR TO SUBMITTING EQUIPMENT.
2. UNDER BASE BID THE HOT WATER CONTROL VALVE SHALL BE 3-WAY, MODULATING. UNDER ALTERNATE BID #3, THE HOT WATER VALVE SHALL BE 2-WAY, MODULATING.
3. PROVIDE UNIT WITH MERV 8 FILTERS.

ABBREVIATIONS:
DM – DISCONNECT MEANS
FSR – FAN SHUT-DOWN RELAY
BD – FULL FACE AND BY-PASS DAMPER

HOT WATER REHEAT COIL SCHEDULE

MARK	ASSOCIATED AIR HANDLER	MANUFACTURER	AIRFLOW	ROWS	SIZE WxH	CAPACITY MBH	GPM	MAX. WPD (FT.)	MAX. APD (IN.)	ACCESSORIES
RH5	AHU5	RAE	4000	1	20/30	65.7	5.5	13.6	0.21	H2W
RH6	AHU6	RAE	4000	1	20/30	65.7	5.5	13.6	0.21	H2W
RH7	AHU7	RAE	4000	1	20/30	65.7	5.5	13.6	0.21	H2W
RH8	AHU8	RAE	4000	1	20/30	65.7	5.5	13.6	0.21	H2W
RH9	AHU9	RAE	4000	1	20/30	65.7	5.5	13.6	0.21	H2W
RH10	AHU10	RAE	4000	1	20/30	65.7	5.5	13.6	0.21	H2W

NOTES:
1. 100% WATER, 140F EWT, 55F EAT.

ABBREVIATIONS:
H2W – HEATING HOT WATER 2-WAY MODULATING VALVE

CUSTOM AIR HANDLING UNIT SCHEDULE

AIR HANDLING UNIT	AHU1	AHU2	AHU3	AHU4	AHU5/6/7/8/9/10	AHU11	AHU12
AREA SERVED	BASEMENT LEVEL	DINING/LOBBY	KITCHEN	ADMINISTRATION	CLIENT WINGS	CORE AREAS	DEMENTIA DINING
MANUFACTURER	TEMTROL	EXISTING TO REMAIN	EXISTING TO REMAIN	TEMTROL	TEMTROL	EXISTING TO REMAIN	EXISTING TO REMAIN
MODEL	CUSTOM			CUSTOM	CUSTOM		
UNIT SIZE	CUSTOM			CUSTOM	CUSTOM		
ARRANGEMENT	DRAW THRU			DRAW THRU	DRAW THRU		
MIN. OUTDOOR AIR (CFM)	200	825	700	215	2200	900	125
MAX. OUTDOOR AIR (CFM)	–	2410	950	730	–	3750	750
MAX. UNIT WEIGHT (LBS.)	2200 LBS			2300 LBS	2400 LBS		
SUPPLY FAN DATA							
FAN TYPE	SDDP			SDDP	SDDP		
FAN WHEEL DIAMETER	16"			16"	16"		
FAN SPEED (RPM)	1893			1915	2301		
SUPPLY AIR (CFM)	1995	7300	9500	2200	4000	9230	
SUPPLY ESP (in w.g.)	1.0			1.0	1.65		
SUPPLY TSP (in w.g.)	2.00			2.20	3.35		
MOTOR HP	2			3	5		
INITIAL FILTER DATA							
AIRFLOW (CFM)	1995			2200	4000		
MERV RATING	8			8	8		
THICKNESS	2"			2"	2"		
CLEAN PD (IN. W.C.)	0.21			0.23	0.35		
FINAL PD (IN. W.C.)	1.0			1.0	1.0		
CHILLED WATER COOLING COIL DATA							
AIRFLOW (CFM)	1995			2200	4000		
MAX. FACE VEL. (FPM)	399			440	485		
COIL ENTERING AIR (DB°F/WB°F)	77/64			82/68	86/72		
COIL LEAVING AIR (DB°F/WB°F)	53.07/52.21			54.09/53.49	53.24/53.05		
UNIT LEAVING AIR (DB°F/WB°F)	54.07/53.21			55.09/54.49	54.24/54.05		
EWT/LWT	44/56			44/56	44/57		
FLOWRATE (GPM)	11.7	60.8	53.8	17.5	40.0	82.5	16.5
MAX. WPD (FT. HEAD)	11.17			7.80	21.21		
MAX. APD (IN. W.C.)	0.38			0.55	0.92		
MAX. FPF	84			96	132		
MAX. ROWS	6			6	6		
CONTROL VALVE	3-WAY, MODULATING	3-WAY, MODULATING	3-WAY, MODULATING	3-WAY, MODULATING	3-WAY, MODULATING	3-WAY, MODULATING	3-WAY, MODULATING
HOT WATER COIL DATA							
AIRFLOW (CFM)	1995			2200	4000		
MAX. FACE VEL. (FPM)	399			440	485		
COIL ENTERING AIR (DB°F)	62.00			43.50	26.00		
COIL LEAVING AIR (DB°F)	91.63			92.13	91.00		
EWT/LWT	190/160			190/160	190/160		
FLOWRATE (GPM)	4.4	27.2	21.2	7.9	19.3	36.6	15.0
MAX. WPD (FT. HEAD)	1.70			4.84	4.91		
MAX. APD (IN. W.C.)	0.05			0.09	0.13		
MAX. FPF	84			108	84		
MAX. ROWS	1			1	2		
CONTROL VALVE	SEE NOTE #11	SEE NOTE #11	SEE NOTE #11	SEE NOTE #11	3-WAY, MODULATING	SEE NOTE #11	SEE NOTE #11
ELECTRICAL DATA							
VOLTAGE/PHASE	460/3			460/3	460/3		
MCA	4			6	6		
MOP	10			10	10		
MFS	8			8	8		
ACOUSTICAL DATA - UNIT SUPPLY DISCHARGE							
63 Hz (dB)	69			78	80		
125 Hz (dB)	67			75	77		
250 Hz (dB)	76			88	89		
500 Hz (dB)	67			78	78		
1000 Hz (dB)	67			75	75		
2000 Hz (dB)	64			71	72		
4000 Hz (dB)	59			67	68		
8000 Hz (dB)	50			57	58		
ACOUSTICAL DATA - UNIT RETURN INLET							
63 Hz (dB)	66			73	74		
125 Hz (dB)	65			71	73		
250 Hz (dB)	81			92	92		
500 Hz (dB)	73			84	82		
1000 Hz (dB)	69			74	75		
2000 Hz (dB)	67			74	76		
4000 Hz (dB)	65			72	73		
8000 Hz (dB)	63			68	70		

ABBREVIATIONS:
SDDP – STACKED DIRECT DRIVE PLENUM FAN

NOTES:
1. THE ENTIRE UNITS SHALL BE DOUBLE WALL, SOLID INNER LINER CONSTRUCTION.
2. CHILLED WATER SHALL BE 100% WATER.
3. HOT WATER SHALL BE 100% WATER.
4. SUPPLY FANS SHALL BE MOUNTED ON SPRING ISOLATORS.
6. SUPPLY FAN EXTERNAL STATIC PRESSURE SHALL INCLUDE ALL SHEETMETAL WORK EXTERIOR TO THE UNIT ONLY. SUPPLY FAN TOTAL STATIC PRESSURE SHALL INCLUDE EXTERNAL STATIC PRESSURE PLUS FILTER PRESSURE DROP PLUS AND ALL UNIT COMPONENTS.
6. UNITS SHALL BE SELECTED AT 1,250 FT. ELEVATION.
7. EACH FILTER BANK SHALL BE PROVIDED WITH A MAGNAHELIC FILTER GAUGE MOUNTED EXTERIOR TO UNIT.
8. ACOUSTICAL DATA LISTED IS MAXIMUM ALLOWABLE.
9. ALL PIPING LOCAL TO EACH AIR HANDLER, NEW AND EXISTING, SHALL BE REPLACED PER THE COIL PIPING DETAILS. 2-WAY OR 3-WAY TYPE CONTROL VALVES ARE INDICATED ON THIS SCHEDULE.
10. CONTRACTOR SHALL CONFIRM EXISTING POWER V/PH, PRIOR TO SUBMITTING EQUIPMENT.
11. UNDER BASE BID, HOT WATER VALVE SHALL BE 3-WAY MODULATING. UNDER ALTERNATE BID #3, HOT WATER VALVE SHALL BE 2-WAY MODULATING.
12. CONTRACTOR SHALL BALANCE THE SUPPLY AIRFLOW, OUTSIDE AIRFLOWS AND ALL WATER FLOWRATES LISTED IN THE SCHEDULE.
13. AHU5 THRU AHU10 SHALL BE SELECTED AT 4,000 CFM SUPPLY TO ACCOUNT FOR AN ADDITIONAL 300 CFM TO SERVE THE FUTURE STORAGE ROOM ADDITION. TAB CONTRACTOR SHALL BALANCE AIRFLOW TO 3,700 CFM FOR THIS PROJECT.
14. AHU-1, 4, 5, 6, 7, 8, 9 & 10 SUPPLY FANS SHALL BE PROVIDED WITH VARIABLE FREQUENCY DRIVES FOR BALANCING PURPOSES ONLY.

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4-PIPE FAN COIL UNIT SCHEDULE

MARK		"FCU-003"					
MANUFACTURER		JCI					
MODEL NO.		FHP30					
CFM		450					
E.S.P.	IN W.G.	0.3					
CABINET TYPE		HORIZONTAL CONCEALED					
COOLING DATA							
E.W.T.	°F	44					
E.A.T.	°F	75/63					
GPM		2.5					
MAX. COIL WPD	FT.	4.3					
MIN. SHC	MBH	10.0					
MIN. THC	MBH	12.4					
HEATING DATA							
E.W.T.	°F	190					
E.A.T.	°F	60					
MIN. L.A.T.	°F	106					
GPM	°F	1.5					
MAX. COIL WPD	FT.	1.0					
MIN. HTG. CAP.	MBH	22.7					
ELECTRICAL DATA							
VOLTS/PHASE		115/1					
MOTOR		230 W					
ACCESSORIES		C3W,H2W,DM					

NOTES:
1. CONTRACTOR SHALL CONFIRM EXISTING POWER V/PH, PRIOR TO SUBMITTING EQUIPMENT.

ABBREVIATIONS:
C3W – CHILLED WATER 3-WAY VALVE PACKAGE
H2W – HEATING HOT WATER 2-WAY VALVE PACKAGE
DM – DISCONNECTING MEANS

GRILLES, REGISTERS & DIFFUSER SCHEDULE

MARK	MANUFACTURER	CATALOG #	APP	FINISH	FRAME TYPE	VOLUME DAMPER	MAX NC (DB)	MIN THROW (FT)	MAX THROW (FT)	MAX PRESS DROP
A	TITUS	TMS	SUP	WHITE	SURFACE	Y	30	10	15	0.03
B	TITUS	PAR	RET	WHITE	T-BAR	N	30	–	–	0.02

ABBREVIATIONS:
RET – RETURN
SUP – SUPPLY

NOTES:
1. THROWS ARE BASED ON 50 FEET PER MINUTE VELOCITY.
2. OPPOSED BLADE DAMPERS SHALL BE PROVIDED ON ALL DIFFUSERS REQUIRING VOLUME DAMPERS.

WATER HEATER/BOILER SCHEDULE

MARK	MFG.	MODEL #	BOILER				ELECTRICAL			ACCESSORIES
			MIN. OUTPUT (MBH)	DESIGN PRESSURE (PSI)	MIN. EFF. (%)	GAS INPUT (MBH)	VOLTS/ PHASE	MOTOR FLA	MOTOR MOCP	
WH1	LOCHINVAR	AWN-400	383.9	160	96.0	400.0	120/1	6.5	15	PTRV,CN,FS,LW
WH2	LOCHINVAR	AWN-400	383.9	160	96.0	400.0	120/1	6.5	15	PTRV,CN,FS,LW

NOTES:
1. WATER HEATER/BOILERS SHALL BE PROVIDED UNDER ALTERNATE BID #1.

ABBREVIATIONS:
PTRV – PRESSURE AND TEMPERATURE RELIEF VALVE, 75 PSIG.
CN – CONDENSATE NEUTRALIZATION KIT
FS – FLOW SWITCH
LW – LOW WATER CUT-OFF

PROVIDE BOILER CIRCULATION PUMP "WH1" AND "WH2" WITH BELL & GOSSETT MODEL PL-55 SIZED FOR 21 GPM, 21 FOOT HEAD, 0.4 HP OR APPROVED EQUAL.

FURNACE - EVAP. - COND. UNIT SCHEDULE

GAS FIRED FURNACE

MARK	MFG.	MODEL #	BLOWER			HEATER		ELECTRICAL			ACCESSORIES
			CFM	*E.S.P.	HP	IN	OUT	VOLT/PH	MCA	MOCP	
F1	YORK	TM9E120D	1925	0.76"	0.75	120	116	115/1	10.9	15	CH,LA

EVAPORATOR-CONDENSING UNIT

MARK	MFG.	CLG. CAPACITY		EVAPORATOR					CONDENSING UNIT				AMB TEMP
		SENS	TOTAL	MODEL #	CFM	EDB	EWB	APD	MODEL #	V/PH	MCA	MOCP	
CU1	YORK	42.6	56.3	CF64DXA1	1925	76.25	72.47	0.15"	YCG60B21S	208/1	32.4	50	95

NOTES:
1. CONTRACTOR SHALL CONFIRM EXISTING POWER V/PH, PRIOR TO SUBMITTING EQUIPMENT.

ABBREVIATIONS:
CH – CRANKCASE HEATER
LA – LOW AMBIENT CONTROL (0 F)
*E.S.P. – DOES NOT INCLUDE FILTER LOSS

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OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF PUBLIC SAFETY,
MISSOURI VETERANS COMMISSION

HVAC REPLACEMENT PROJECT

MISSOURI VETERANS HOME

620 N. JEFFERSON
ST. JAMES, MO 65559

PROJECT # U1503-03
FAI # 29-051
SITE # 4700
FACILITY # 55019

REVISION:
DATE:
REVISION:
DATE:
REVISION:
DATE:
ISSUE DATE: 10-27-17

CAD DWG FILE: M-600.DWG
DRAWN BY: JMO
CHECKED BY: CKC
DESIGNED BY: JMO

SHEET TITLE:

MECHANICAL SCHEDULES

SHEET NUMBER:

M-600

29 OF 41 SHEETS

10-27-17

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