CENTRAL AIR HANDLING UNIT SCHEDULE MANUFACTURER TYPE SUPPLY FAN TOTAL DRIVE VFD FAN AIRFLOW OA ESP TSP FAN AIRFLOW ESP TSP TOTAL DRIVE VFD MERV IN MERV IN MERV IN IN IN IN RPM HP TYPE QTY CFM IN IN BHP QTY CFM Y/N ROOFTOP PLENUM FAN ARRAY 4 12,000 3,000 2.50 4.90 4.52 4066 20.0 DIRECT PLENUM FAN ARRAY 2 10,500 1.10 1.76 3.67 1824 10.0 DIRECT Y JCI / YORK BUILDING 6 ROOF BUILDING 6 - WING A ROOFTOP PLENUM FAN ARRAY 4 10,000 Y PLENUM FAN ARRAY 2 6,500 1.75 2.38 2.19 2473 6.0 DIRECT 20.0 DIRECT JCI / YORK BUILDING 6 ROOF BUILDING 6 - WING B 1 ELVATION: 948 FEET ABOVE SEA LEVEL. COIL CAPACITIES AND AIRFLOWS SHOWN INCLUDE ALTITUDE CORRECTION VALUES. 2 CONTRACTOR SHALL PROVIDE CONDENSATE TRAPS WITH REQUIRED TRAP HEIGHT AS DETERMINED BY DETAIL 3/6-M-501 3 PROVIDE AIR HANDLING UNIT WITH MIN OA DAMPER AND ECONOMIZER DAMPER. **CENTRAL AIR HANDLING UNIT - SOUND ATTENUATOR SCHEDULE** CENTRAL AIR HANDLING UNIT - HYDRONIC COOLING COIL SCHEDULE MARK AHU MARK LOCATION MANUFACTURERS AIRFLOW MAX MAX DYNAMIC INSERTION LOSS (dB LOCATION MANUFACTURERS CFM | FLOW | EWT | LWT | MAX. APD | MAX. WPD | LENGTH APD GPM FT'-IN" 12,000 397.0 321.0 80.8 64.2 BUILDING 6 WING A ROOF AHU-1 SUPPLY AIR JCI / YORK UNIT PROVIDED 12000 650 5'-0" 0.11 2 6 11 JCI / YORK 53.5 53.0 79.3 45 55 AHU-1 - WING A JCI / YORK 10,000 402.0 303.0 84.5 66.7 53.5 53.0 79.3 45 55 SA-2 AHU-2 BUILDING 6 WING B ROOF AHU-2 SUPPLY AIR JCI / YORK UNIT PROVIDED 10000 650 5'-0" 0.11 2 6 11 16 17 12 11 10 AHU-2 - WING B 1 DIVISION 23 CONTRACTOR SHALL ACCOUNT FOR +3dB ACROSS ALL OCTAVE BANDS OF THE SUPPLY FAN OUTLET SOUND POWER TO ACCOUNT FOR FAN ARRAYS PRIOR TO ATTENUATOR SELECTION. CONTRACTOR SHALL ADJUST ATTENUATOR INSERTION LOSS AS REQUIRED IF THE SUPPLY FAN OUTLET SOUND POWER IS GREATER THAN THE SCHEDULED SUPPLY FAN OUTLET SOUND POWER. SEE AHU ACOUSTICS SCHEDULE. 1 ELEVATION: 940 FEET ABOVE SEA LEVEL. COIL CAPACITIES AND AIRFLOWS SHOWN INCLUDE ALTITUDE CORRECTION VALUES. 3 SOUND ATTENUATOR CONSTRUCTION SHALL BE REACTIVE OR PACKLESS WITH NO MEDIA OR SHALL BE HOSPITAL GRADE WITH AN INTERIOR MYLAR LINING WITH ACOUSTIC STANDOFF. 2 PROVIDE UNIT COIL PERFORMANCE CURVES WITH AIRFLOW AND CAPACITY VS. WATER FLOW. 4 SOUND ATTENUATOR INSERTION LOSS SHOWN IS THE MINIMUM INSERTION LOSS REQUIRED TO ACHIEVE NC-35 AT THE FIRST OUTLET IN THE SYSTEM. 3 COOLING COIL LEAVING AIR TEMPERATURE SHALL ACCOUNT FOR FAN HEAT. UNIT LEAVING AIR TEMPERATURE SHALL BE 55°F **CENTRAL AIR HANDLING UNIT - ACOUSTICS SCHEDULE** CENTRAL AIR HANDLING UNIT - HYDRONIC HEATING COIL SCHEDULE SUPPLY FAN OUTLET SOUND POWER (dB) NOTES LAT | FLOW | EWT | LWT | MAX. APD | MAX. WPD | MAX. VEL. | DB FREQUENCY (HZ) MBH °F °F GPM 3,000
 183.8
 -3.5
 53.5
 18.4
 180
 160
 0.76

 210.8
 -3.5
 53.50
 21.1
 180
 160
 0.65
 BLDG 57 PENTHOUSE BUILDING 6 - WING A AHU 1 - WING A IFB PREHEAT 3,440 210.8 <u>-3.5</u> 53.50 10,000 BLDG 57 PENTHOUSE BUILDING 6 - WING B IFB PREHEAT JCI / YORK AHU 2 - WING B 1 ELEVATION: 948 FEET ABOVE SEA LEVEL. COIL CAPACITIES AND AIRFLOWS SHOWN INCLUDE ALTITUDE CORRECTION VALUES. 1 CONTRACTOR SHALL ACCOUNT FOR +3dB ACROSS ALL OCTAVE BANDS OF THE SUPPLY FAN OUTLET SOUND POWER TO ACCOUNT FOR FAN ARRAYS PRIOR TO ATTENUATOR SELECTION. 2 PROVIDE UNIT COIL PERFORMANCE CURVES WITH AIRFLOW AND CAPACITY VS. WATER FLOW. 2 CONTRACTOR SHALL ADJUST ATTENUATOR INSERTION LOSS IF SUPPLY FAN OUTLET SOUND POWER IS GREATER THAN THE SCHEDULED SUPPLY FAN OUTLET SOUND POWER. **HUMIDIFIER SCHEDULE - ELECTRIC** MANUFACTURER | MODEL DB 70 CFM 11500 RS130 RESISTIVE ELEMENT 128.0 AHU-1 - WING A RS130 RESISTIVE ELEMENT 124.0 B128 HAC 1 ELEVATION: 948 FEET ABOVE SEA LEVEL. CAPACITIES SHOWN INCLUDE ALTITUDE CORRECTION VALUES. PROVIDE UNIT WITH BACNET INTEGRATED BAS COMMUNICATION INTERFACE AND COORDINATE WITH MECHANICAL CONTROL DRAWINGS AND SPECIFICATIONS. 3 UNIT SHALL BE PROVIDED WITH A SCALE COLLECTOR TANK OR SIMILAR SCALE PREVENTION MEASURES 4 PROVIDE MOUNTING BRACKET AND ACCESSORIES AS NECESSARY FOR WALL MOUNTING. MOUNT IN LOCATION SHOWN ON PLAN. DISCONNECT SWITCH FURNISHED AND INSTALLED BY DIVISION 26 CONTRACTOR. 6 UNIT SHALL BE INSTALLED WITH MANUFACTURER PROVIDED RELAY CONTACTS FOR REMOTE OPERATING AND FAULT INDAICATION. PROVIDE 5 MICRON FILTER ON DOMESTIC WATER SUPPLY PIPING TO THE HUMIDIFER. 8 PROVIDE MANUFACTURER FURNISHED DISPERSION GRID. DISPERSION GRID SIZE AS REQUIRED FOR AHU MOUNTING. **ENERGY RECOVERY VENTILATION UNIT SCHEDULE** SERVICE **MANUFACTURERS EXHAUST FAN** SUPPLY FAN SUMMER EXHAUST EAT (DB/WB) 95.7 / 75.7 ROOFTOP A-WING AHU-1: WING-A FV-4000V 75 / 62.6 82.4 / 68.2 70 / 54.4 ROOFTOP B-WING 95.7 / 75.7 80.4 / 66.9 SEMCO FV-4000V 75 / 62.6 70 / 54.4 AHU-2 : WING-B 1 PROVIDE 2" PLEATED MERV 7 THROWAWAY AIR FILTERS IN EACH AIRSTREAM. 2 PROVIDE DEFROST CONTROL. 3 PROVIDE SHAFT GROUNDING SYSTEM ON MOTOR. REFER TO MOTOR SPECIFICATION FOR ADDITIONAL INFORMATION. 4 PROVIDE UNIT WITH BYPASS AIR DAMPER **CONTROL VALVE SCHEDULE** MANUFACTURERS APPLICATION NORMAL | FLOW BRANCH LINE | INLET PRESSURE MAX. SHUTOFF (N.C. / N.O.) | GPM AHU-1 COOLING COI PHC-1_CV AHU-1 PREHEAT COIL CV-1-X N.O. NOTE 6 0.75 160 5.0 A-WING VAVS A-WING VAVS N.C. 79.3 N.O. 22.0 N.O. NOTE 6 AHU-2 COOLING COI **ELECTRIC DUCT HEATER SCHEDULE** PHC-2_CV HW ROOF AHU-2 PREHEAT COIL **DANFOSS** AB-QM CV-2-X B-WING VAVS DANFOSS AB-QM B-WING VAVS NO. WIDTH HEIGHT DEPTH APD DISC. V/PH KW STAGES IN IN TYPE FCU-1 COOLING COIL A100 VESTIBULE (E) B129 PHYSICAL THERAPY PT/OT TEMP. HEAT THERMOLEC -10.0 75.0 45.82 13.50 MOD 14.00 12.00 CV-3.2 AB-QM NOTE 3 | 208/3 | 1-6 FCU-1 HEATING COIL A100 VESTIBULE DANFOSS 1 UNIT AIR PRESSURE DROP SHALL NOT EXCEED SCHEDULED VALUE. 1 PROVIDE ELECTRONIC OPERATOR. 2 SUPPORT UNIT FROM STRUCTURE WITH ALL-THREAD HANGING RODS. 2 NC MEANS NORMALLY CLOSED, NO MEANS NORMALLY OPEN. MOD MEANS MODULATING, 2-POS MEANS TWO-POSITION. 3 DISCONNECT SWITCH FURNISHED BY DIVISION 26 CONTRACTOR 4 CONTROL VALVE SHALL BE PRESSURE INDEPENDENT. 4 PROVIDE AIRFLOW PROVING SWITCH AND THERMAL OVERLOAD PROTECTION. 5 PROVIDE MAGNETIC CONTACTORS. 5 COORDINATE CONTROL VALVE MARK NUMBER WITH VAV ATU MARK NUMBER AS SCHEDULED. 6 PROVIDE SCR CONTROLS DESIGNED TO MODULATE THE HEATER OUTPUT FROM 0 TO 100 PERCENT CAPACITY. 6 SEE VAV SCHEDULE FOR INDEPENDENT VAV ATU REHEAT COIL FLOW RATES. **FAN COIL UNIT SCHEDULE (HYDRONIC COILS)** AIR SEPARATOR SCHEDULE COOLING COIL

TH SH ENTERING AIR TEMP. LEAVING AIR TEMP. GPM EWT LWT MAX MAX. CAP EAT LAT GPM EWT LWT MAX MAX WPD DISC. STARTER (MBH) (MBH) EDB EWB LDB LWB (°F) (°F) (°F) FPI ROWS WPD (FT) (MBH) (°F) (°F) (°F) (°F) FPI ROWS FT TYPE TYPE MANUFACTURER NOTES CAP EAT LAT GPM EWT LWT MAX MAX WPD DISC. STARTER V/PH 1000 1/6 0.35 19.2 19.2 75.0 55.1 53.5 45.1 3.84 45.0 55.0 11 3 9.60 8.2 | 68 | 105 | 1.63 | 180 | 160 | 11 | 1 | 0.24 | NOTE 5 | NOTE 6 | 115/1 | 1-9 VESTIBULE A100 ELEVATION: 948 FEET ABOVE SEA LEVEL. COIL CAPACITIES AND AIRFLOWS SHOWN INCLUDE ALTITUDE CORRECTION VALUES. EQUIPMENT COMPONENTS SHALL BE BY THE SAME MANUFACTURER. PROVIDE 2", 30% PLEATED THROWAWAY MERV 7 OR BETTER AIR FILTERS. PROVIDE WITH 7-DAY PROGRAMMABLE DIGITAL DISPLAY THERMOSTAT WITH STAGED HEATING AND COOLING CAPABILITY AS REQUIRED FOR OPERATION DISCONNECT SWITCH FURNISHED AND INSTALLED BY DIVISION 26 CONTRACTOR. STARTER FURNISHED AND INSTALLED BY DIVISION 26 CONTRACTOR. PROVIDE UNIT COIL PERFORMANCE CURVES WITH AIRFLOW AND CAPACITY VS. WATER FLOW. PROVIDE CONDENSATE TRAP AS SHOWN IN DETAIL 5/6-M-501. PROVIDE COIL PIPING COMPONENTS AND CONNECTIONS AS SHOWN IN DETAIL 4/6-M-501. one-eighth inch = one foot $\begin{array}{c|c}
0 & 4 & 8 \\
\hline
\end{array}$

VA FORM 08-6231

MARK	LOCATION	SERVICE	MANUFACTURERS	MODEL	MAX	PRESS.	NOTES
					FLOW	LOSS	
					GPM	FTHD	
AS-1	BASEMENT MECH RM	HEATING HOT WATER	SPIROVENT	VDT300	140.0	0.5	1-4
2 THE BODY	ITH BLOW DOWN VALVE AND A SHALL BE MADE OF CAST IRON LIDE THREADED BLOW DOWN	OR CARBON STEEL.	ADED AIR REMOVAL CONN	IECTION ON TOP OF THE L	INIT		
3 SHALL INCL	ODE THINEADED BEOW DOWN	CONTROL TIME	IDED / III C I CENTO V/ IE OOI 11 1	LONGING TO OF THE	INI I .		

PRE-FILTER

0.44

DB 75

0.34

17.1

0.9

(DB/WB)

2.00

2.00 0.75

20.0

480.00

PF-1 PF-2 AF

14 4 90.0 61.0 435.0 10,380 208/3

NOTES

NOTES

NOTES

TYPE V/PH

LBS DISC. STARTER V/PH

 TYPE
 TYPE

 VFD
 VFD
 208/3

 VFD
 VFD
 208/3

60 48.6 NOTE 5 460/3 1-8

48.6 NOTE 5

	CONSULTANT INFORMATION	ARCHITECT	Office of	MECHANICAL SCHEDULES I	PROJECT PHASE BID DOCUMENTS	PROJECT TITLE RENOVATE A 8	& B WING BUILD	ING 6	VA PROJECT NUMBER 589A5-19-116
			Construction			DD0 ISOT LOGATION			BUILDING NUMBER
	STRUCTURAL / MECHANICAL / ELECTRICAL / FIRE PROTECTION CIVIL ENGINEER PLUMBING / TECHNICAL ENGINEER ENGINEER	STOUL STOULD STOULD BE SOME TO SERVE STOULD BE SOME TO SERVE SERVE STOULD BE SOME TO SERVE	and Facilities			PROJECT LOCATION 2200 SW GAGE	BLVD		6
	STAND STRUCTURAL ENGINEERING SPUR DESIGN POOLE FIRE PROTECTION, INC.	DESIGN	Management	APPROVED: PROJECT DIRECTOR		TOPEKA, KS 6	6622		DRAWING NUMBER 6-M-601
	11827 W. 112TH STREET, SUITE 200 11020 KING STREET, SUITE 350 19910 W. 161ST STREET OVERLAND PARK, KS 66210 OVERLAND PARK, KS 66210 OLATH, KS 66062	7/10/2019 312 SW 25th Street 11020 King Street, Suite 350 Oklahoma City, OK 73109 Overland Park, KS 66210 spur-design.com spur-design.com	_		FULLY SPRINKLERED		1		
	(913) 214-2169 (405) 842-6100 (913) 829-8650	O ONAL ERIST	U.S. Department of Veteran Affairs			DATE	CHECKED BY	DRAWN BY	111 05 100
Revision # Date		KS ARCH REG. NO. A-1139, EXP. 12/31/2019 KS ENGR REG. NO. E-2586. EXP. 12/31/2019	of Veteran Affairs			07/10/19	JES	JAD	Dwg. 114 OF 160

DIFF	USER , R	EGISTER A	AND G	RILLE SCH	IEDULE					
MARK	SERVICE	MANUFACTURER	MODEL	TYPE	MOUNTING	FACE SIZE	NECK SIZE	MAX.		NOTES
i									DROP	
						IN	IN	NC	IN W.C.	
CD-1	SUPPLY	TITUS	OMNI-AA	PLAQUE	DROP CEILING	24x24	SEE PLAN	20	0.10	1-5, 7
CD-2	SUPPLY	TITUS	OMNI-AA	PLAQUE	GYPSUM	12X12	SEE PLAN	15	0.12	1-5, 7
CD-3	SUPPLY	TITUS	350RL	LOUVERED	DUCT	SEE PLAN	SEE PLAN	30	0.10	1-5, 8
CD-4	SUPPLY	TITUS	350RL	LOUVERED	WALL	SEE PLAN	SEE PLAN	30	0.15	1-5, 8
RG-1	RETURN	TITUS	350RL	LOUVERED	DROP CEILING	24x24	SEE PLAN	30	0.06	2-6
RG-2	RETURN	TITUS	350RL	PERFORATED	DROP CEILING	12x12	SEE PLAN	30	0.06	2-6, 8
RG-3	RETURN	TITUS	MLR-39	LINEAR SLOT	GYPSUM	SEE PLAN	SEE PLAN	30	0.10	2-5, 9
EG-1	EXHAUST	TITUS	350RL	LOUVERED	DROP CEILING	24X24	SEE PLAN	30	0.05	1-5, 8
EG-2	EXHAUST	TITUS	350RL	LOUVERED	GYPSUM	12X12	SEE PLAN	30	0.05	1-5, 8
	EXHAUST	TITUS	350RL	LOUVERED	GYPSUM	12X12	SEE PLAN	30	0.05	1-5, 8

1 ALL ALUMINUM CONSTRUCTION

2 FINISH - BAKED ENAMEL FINISH, WHITE TO MATCH CEILING COLOR.

- 3 FRAME TYPE TO MATCH CEILING CONSTRUCTION, COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLAN. 4 NECK SIZE SHOWN ON DRAWINGS.
- BRANCH DUCT SIZE SHALL BE SAME AS NECK SIZE UNLESS OTHERWISE SHOWN ON DRAWINGS.
- 6 PROVIDE NECK FOR DUCT CONNECTION. 4-WAY THROW PATTERN UNLESS OTHERWISE SHOWN ON DRAWINGS.
- 8 FRONT BLADES PARALLEL TO LONG DIMENSION. 9 PROVIDE WITH PLENUM FOR DUCT CONNECTION.

EXPANS	ION / COMPR	RESSION TAN	K SCHEDULE										
MARK	LOCATION	SERVICE	MANUFACTURERS	MODEL	FUNCTION	MOUNTING	TANK SIZE (GALLONS)	ACCEPTANCE (GALLONS)	MIN. TEMP. (°F)	MAX. TEMP. (°F)	MAX. PRESS. (PSIG)	WEIGHT (LBS)	NOTES
ET-1	BASEMENT MECH RM	WING A/B HEATING HW	BELL & GOSSETT	D-40V	EXPANSION	SUSPENDED	15.0	3.11	40.0	180.0	125.0	90	1-3

1 PROVIDE PRECHARGED DIAPHRAM-TYPE ASME RATED TANK

2 PROVIDE STANDARD ASME RATED COMPRESSION TANK. 3 SUPPORT UNIT FROM WALL WITH BRACKETS AND STRAPS

MARK	LOCATION	SERVICE	MANUFACTURER	MODEL	AIRFLOW	TYPE	ESP	DRIVE	MIN.	FAN	VFD	WEIGHT	i	ELECTRIC <i>A</i>	ÀL '	NOTES
					CFM		(IN)	(BELT/DIRECT)	HP	RPM	(Y/N)	LBS	V/PH	DISC.	STARTER	
EXHAUST F	ANS															
EF 1-1	WING A ROOF	WING A PT/OT	GREENHECK	CUE-090-VG	420	UPBLAST	0.50	DIRECT	1/10	1498	N	31	115/1	NOTE 5	NOTE 6	1-9
EF 2-1	WING B ROOF	WING B KITCHEN HOOD EXHAUST	GREENHECK	CUE-121-VG	500	UPBLAST	0.50	DIRECT	1/4	1035	Υ	47	115/1	VFD	VFD	1-8
EF 2-2	WING B ROOF	WING B GENERAL EXHAUST	GREENHECK	CUE-080-VG	220	UPBLAST	0.50	DIRECT	1/10	1548	N	25	208/3	NOTE 5	NOTE 6	1-3, 5, 6
OUTSIDE A	IR FANS															
OAF 2-1	WING B ROOF	WING B EXISTING PT/OT SUPPLY	GREENHECK	AS-16-420-A5	500	AXIAL	0.50	DIRECT	1/2	1750	N	53	115/1	NOTE 5	NOTE 6	1-3, 5, 6

1 ELEVATION: 948 FEET ABOVE SEA LEVEL. AIRFLOWS SHOWN INCLUDE ALTITUDE CORRECTION VALUES.

- 2 PROVIDE WITH SPRING VIBRATION ISOLATION. 3 PROVIDE SHAFT GROUNDING SYSTEM ON MOTOR. REFER TO MOTOR SPECIFICATION FOR ADDITIONAL INFORMATION.
- 4 VARIABLE FREQUENCY DRIVE TO BE FURNISHED BY DIVISION 23 CONTRACTOR COORDINATE INSTALLATION WITH DIVISION 26 CONTRACTOR.
- 5 DISCONNECT SWITCH FURNISHED AND INSTALLED BY DIVISION 26 CONTRACTOR. 6 STARTER FURNISHED AND INSTALLED BY DIVISION 26 CONTRACTOR
- 7 FAN MOTOR SHALL BE OF SPARK RESISTANT AND EXPLOSION PROOF CONSTRUCTION
- 8 FAN ASSEMBLY SHALL BE OF CORROSION RESISTANT CONSTRUCTION.
- 9 CONTRACTOR TO PROVIDE EXHAUST FAN IF DEDUCT ALTERNATE IS CHOSEN.

	LOCATION	SERVICE	MANUFACTURER	MODEL	MOUNTING			T		COOLING					T		ELECTR		NOTES
						REFR.	CFM	NOMINAL	TH	SH	EA		LA		WEIGHT	MCA	MOCP	V/PH	
			ļ	1		TYPE		TONS	MBH	МВН	DB	WB	DB	WB	LBS				
-1	A115 IT EXTENSION	ELECTRICAL ROOM	MITSUBISHI	PKA-A24KA7	WALL	R410A	750	2	24.0	16.9	90.0	73.0	66.0	59.0	29	1	15	208/1	1-11
	1		1		,														

SPLIT SY	STEM COND	ENSING UNI	T SCHEDULE												
MARK	LOCATION	SERVICE	MANUFACTURER	MODEL	REFR.	COOLING	CAPACITY	AMBIENT E	EXTREMES		WEIGHT	E	LECTRICA	\L	NOTES
					TYPE	NOMINAL	TH (MBH)	WINTER	SUMMER	MIN EFF	LBS	MCA	MOCP	V/PH	

1 EQUIPMENT SIZED FOR 100°F AMBIENT TEMPERATURE.

2 DISCONNECT SWITCH FURNISHED BY DIVISION 26 CONTRACTOR. 3 STARTERS FOR ALL MOTORS SHALL BE FURNISHED INTEGRAL WITH UNIT.

7 PROVIDE NECESSARY MOUNTING BRACKET AND ACCESSORIES FOR SPECIFIED MOUNTING.

9 PROVIDE CONDENSATE PUMP AND OVERFLOW SHUTOFF SWITCH WITH UNIT.

11 PROVIDE STANDARD FACTORY FURNISHED WASHABLE FILTERS.

- 4 INDOOR FAN COIL POWERED FROM OUTDOOR CONDENSING UNIT.
- 5 COORDINATE SIZE OF CONDUCTOR TERMINATION LUGS WITH CONDUCTOR SIZES SHOWN ON ELECTRICAL DRAWINGS.
- 6 CONTRACTOR SHALL COORDINATE REFRIGERANT PIPE CONFIGURATION, SIZE, AND ROUTING AS RECOMMENDED BY MANUFACTURER.

3 PROVIDE CONNECTION TO EF 2-1 EXHAUST AIR SYSTEM. DUCTWORK SHALL BE 0" CLEAR IN CONSTRUCTION.

6 TEMPERATURE CONTROL: PROVIDE COMMUNICATING WALL THERMOSTAT INTERFACE FOR BAS. SEE CONTROL DRAWINGS FOR RELATED INFORMATION.

10 PROVIDE SEPARATE CONDENSATE PUMP WHEN NOT A FACTORY FURNISHED ITEM. SEE CONDENSATE PUMP SCHEDULE FOR RELATED INFORMATION.

8 PROVIDE ALL MOUNTING HARDWARE REQUIRED FOR UNIT TYPE SUBJECT TO MANUFACTURERS INSTALLATION INSTRUCTIONS.

A115 IT EXTENSION

2 MOUNTING ACCESSORIES SHALL BE PROVIDED WITH EQUIPMENT SELECTION.

4 INSTALL RANGE HOOD PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

PROVIDE MOUNTING RAILS FOR EQUIPMENT ON ROOF. COORDINATE INSTALLATION AND HEIGHT OF MOUNTING RAILS WITH ROOF SLOPE AND INSULATION.

	AHU	LOCATION / SERVICE	MANUFACTUR	ERS MODEL	INLET			MINIMUM	HEAT	HEATIN				I		1		1	ITROL	NOTES
	MARK				SIZE IN	SIZE W"XH"	AIR CFM	CFM	CFM	EAT _{°F}	LAT °F	MIN. MBH	EWT	LWT °F	FLOW GPM	ROWS	MAX WPD (FT)		OUT VDC	-
WING	1				114	VV XIII	OI W	OI IVI	OI W	1	•	IVIDIT	, , , , , , , , , , , , , , , , , , ,		OI W	ROWO	VVFD (I I)	114 471 11	001 100	
/ 1-1	1	A119 REPORT ROOM	TITUS	DESV	6	12X8	200	50	60	55.0	93.5	2.5	140.0	127.9	0.4	1	0.1	115/1	24	1-6
√ 1 - 2	1	A120 STORAGE	TITUS	DESV	6	12X8	200	50	60	55.0	93.5	2.5	140.0	127.9	0.4	1	0.1	115/1	24	1-6
′ 1-3	1	A118 HOSPICE APRN	TITUS	DESV	6	12X8	200	50	60	55.0	93.5	2.5	140.0	127.9	0.4	1	0.1	115/1	24	1-6
1-4	1	A121 DIETICIAN	TITUS	DESV	6	12X10	230	50	69	55.0	90.9	2.7	140.0	127.0	0.4	1	0.1	115/1	24	1-6
′ 1-5	1	ACDR1 CORRIDOR	TITUS	DESV	6	12X8	250	250	138	55.0	97.4	6.3	140.0	124.6	8.0	2	0.1	115/1	24	1-6
′ 1-6	1	A122 LACTATION / PUMP	TITUS	DESV	6	12X10	240	50	72	55.0	90.1	2.7	140.0	126.7	0.4	1	0.1	115/1	24	1-6
1-7	1	A117 ACNS	TITUS	DESV	5	12X8	170	40	51	55.0	96.5	2.3	140.0	128.8	0.4	1	0.1	115/1	24	1-6
<u>/</u> 1-8	11	A123 SOCIAL WORK	TITUS	DESV	6	12X10	250	50	75	55.0	90.0	2.9	140.0	127.1	0.4	1	0.2	115/1	24	1-6
/ 1-9	1	A116 ASST NURSE MANAGER	TITUS	DESV	6	12X8	200	50	60	55.0	93.5	2.5	140.0	127.9	0.4	1	0.1	115/1	24	1-6
V 1-10	1 1	A124 PHARM D	TITUS	DESV	6	12X10	240	50	72	55.0	90.1	2.7	140.0	126.7	0.4	1	0.1	115/1	24	1-6
/ 1-11	1	A115 REC THERAPY	TITUS	DESV	8	12X8	540	150	162	55.0	98.7	7.7	140.0	121.3	0.8	2	0.2	115/1	24	1-6
/ 1-12	1	A125 REC THERAPY OFFICE	TITUS	DESV	6	12X10	230	50	69	55.0	90.9	2.7	140.0	127.0	0.4	1	0.1	115/1	24	1-6
/ 1-13	1	A126 EXAM / A127 HAC	TITUS	DESV	8	12X10	480	50	145	55.0	101.1	7.2	140.0	122.4	0.8	2	0.2	115/1	24	1-6
<u>′ 1-14</u>	1	ACDR1 CORRIDOR	TITUS	DESV	6	12X8	250	250	138	55.0	97.4	6.3	140.0	124.6	0.8	2	0.1	115/1	24	1-6
1-15	1	A114 IT EXTENSION	TITUS	DESV	5	12X10	150	40	45	55.0	100.8	2.2	140.0	132.8	0.4	2	0.1	115/1	24	1-6
/ 1-16 / 1-17	1 1	A110 PT/OT ROOM	TITUS	DESV	12	14X13	1400	150	420	55.0	91.7	16.7	140.0	113.0	1.3	2	0.2	115/1	24	1-6
′ 1-17	1	A129 GEC PHYSICIAN A110 PT/OT ROOM	TITUS	DESV	10	12X8	100	40	30 315	55.0	106.8 92.9	1.7 12.9	140.0	106.8	0.4	2	0.1	115/1	24	1-6
	1 1	ACDR3 CORRIDOR	TITUS	DESV DESV	5	14X13	1050	150		55.0			140.0	119.1	1.3	1	0.2	115/1	24	1-6
′ 1-19 ′ 1-20	1		TITUS	DESV	3	12X8 12X8	200 120	200 120	60	55.0 55.0	93.5 93.5	2.5	140.0 140.0	127.9 127.9	0.4	1	0.1	115/1	24	1-6
′ 1 - 20	1	A105 / A106 STAFF TOILET			12				60			2.5			0.4	2	0.1	115/1	24	1-6
1-21	1 1	A110 PT/OT ROOM ACDR3 CORRIDOR	TITUS	DESV DESV	12	14X13 12X8	1400 200	150 200	420 60	55.0 55.0	91.7 93.5	16.7 2.5	140.0 140.0	113.0 127.9	1.3 0.4	1	0.2 0.1	115/1 115/1	24	1-6 1-6
1-22	1	A107 MDS / RESTOR OFFICE	TITUS	DESV	8	12X8 12X10	800	100	240	55.0	93.5	9.2	140.0	127.9	0.4	2	0.1	115/1	24	1-6
1-23	1	A107 MIDS / RESTOR OFFICE	TITUS	DESV	5	12X10	230	40	69	55.0	91.3	2.7	140.0	127.0	0.8	1	0.4	115/1	24	1-6
1-24	1	A110 PT/OT ROOM	TITUS	DESV	10	14X13	1400	150	420	55.0	91.7	16.7	140.0	113.0	1.3	2	0.1	115/1	24	1-6
1-25	1	A109 GEROPSYCH	TITUS	DESV	6	14X13	260	50	78	55.0	90.0	3.0	140.0	127.5	0.5	1	0.2	115/1	24	1-6
/ 1 - 20 / 1 - 27	1	A133 TOILET / SHOWER, BARIATRIC	TITUS	DESV	4	12X10	90	90	27	55.0	108.8	2.3	140.0	158.6	0.3	1	0.2	115/1	24	1-6
′ 1 - 27	1	A134 IMAGING (ULTRASOUND)	TITUS	DESV	6	12X0	270	50	81	55.0	90.0	3.1	140.0	128.0	0.5	1	0.1	115/1	24	1-6
′ 1 - 29	1	A134 IMAGING (OLTRASCOND)	TITUS	DESV	6	12X10	250	50	75	55.0	90.0	2.9	140.0	127.1	0.4	1	0.2	115/1	24	1-6
′ 1 - 30	1	ACDR2 CORRIDOR	TITUS	DESV	5	12X10	200	200	60	55.0	93.5	2.5	140.0	127.1	0.4	1	0.1	115/1	24	1-6
/ 1 - 31	1	A132 BREAKROOM	TITUS	DESV	10	14X13	1000	170	300	55.0	93.9	12.7	140.0	119.5	1.3	2	0.1	115/1	24	1-6
/ 1-32		A136 EXAM	TITUS	DESV	6	12X10	260	50	78	55.0	90.0	3.0	140.0	127.5	0.5	1	0.2	115/1	24	1-6
/ 1-33	1	A137 NURSE MED ROOM	TITUS	DESV	6	12X10	340	50	102	55.0	90.0	3.9	140.0	132.0	1.0	1	0.4	115/1	24	1-6
/ 1-34	1	A131 LEARNER OFFICE	TITUS	DESV	8	12X8	300	80	90	55.0	90.2	3.4	140.0	129.2	0.4	1	0.2	115/1	24	1-6
1-35	1	A130 CONFERENCE	TITUS	DESV	7	12X10	400	80	120	55.0	90.0	4.6	140.0	127.5	0.7	1	0.1	115/1	24	1-6
/ 1-36	1	A138 EXAM, BARIATRIC	TITUS	DESV	8	12X12	660	100	198	55.0	94.5	8.5	140.0	119.4	0.8	2	0.2	115/1	24	1-6
/ 1-37	1	A139 ED SUPPLY ROOM	TITUS	DESV	4	12X8	60	30	18	55.0	116.1	1.2	140.0	134.2	0.4	1	0.1	115/1	24	1-6
/ 1 - 38	1	A101 RECEPTION	TITUS	DESV	8	12X10	600	140	180	55.0	96.5	8.1	140.0	120.3	0.8	2	0.2	115/1	24	1-6
V 1 - 39	1	ACDR1 CORRIDOR	TITUS	DESV	5	12X8	200	200	60	55.0	93.5	2.5	140.0	127.9	0.4	1	0.1	115/1	24	1-6
NG - B	2																			
V 2-1		B122 RESIDENT ROOM / TOILET	TITUS	DESV	7	12X12	500	120	150	55.0	100.4	7.4	140.0	122.1	0.8	2	0.2	115/1	24	1-6
	2										4004	7.4	140.0	122.1	0.8	2				1 4 6
/ 2-2	2	B123 RESIDENT ROOM / TOILET	TITUS	DESV	7	12X12	500	120	150	55.0	100.4				-		0.2	115/1	24	1-6
/ 2-2 / 2-3	2 2	BCDR4 CORRIDOR-B	TITUS	DESV	5	12X10	220	210	66	55.0	91.7	2.6	140.0	127.3	0.4	1	0.1	115/1	24	1-6
/ 2-2 / 2-3 / 2-4	2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET	TITUS TITUS	DESV DESV	7 5 6	12X10 12X12	220 420	210 120	66 126	55.0 55.0	91.7 99.2	2.6 6.1	140.0	125.3	0.4 0.8	1 2	0.1 0.1	115/1 115/1	24 24	1-6 1-6
/ 2-2 / 2-3 / 2-4 / 2-5	2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET	TITUS TITUS TITUS	DESV DESV DESV	6 7	12X10 12X12 12X10	220 420 500	210 120 120	66 126 150	55.0 55.0 55.0	91.7 99.2 100.4	2.6 6.1 7.4	140.0 140.0	125.3 122.1	0.4 0.8 0.8	1	0.1 0.1 0.2	115/1 115/1 115/1	24 24 24	1-6 1-6 1-6
/ 2-2 / 2-3 / 2-4 / 2-5 / 2-6	2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET	TITUS TITUS TITUS TITUS	DESV DESV DESV DESV	6 7 6	12X10 12X12 12X10 12X10	220 420 500 320	210 120 120 100	66 126 150 96	55.0 55.0 55.0 55.0	91.7 99.2 100.4 90.0	2.6 6.1 7.4 3.6	140.0 140.0 140.0	125.3 122.1 130.6	0.4 0.8 0.8 0.8	1 2	0.1 0.1 0.2 0.3	115/1 115/1 115/1 115/1	24 24 24 24	1-6 1-6 1-6 1-6
/ 2-2 / 2-3 / 2-4 / 2-5 / 2-6 / 2-7	2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET	TITUS TITUS TITUS TITUS TITUS	DESV DESV DESV DESV DESV	6 7 6 6	12X10 12X12 12X10 12X10 12X10	220 420 500 320 330	210 120 120 100 100	66 126 150 96 99	55.0 55.0 55.0 55.0 55.0	91.7 99.2 100.4 90.0 90.0	2.6 6.1 7.4 3.6 3.8	140.0 140.0 140.0 140.0	125.3 122.1 130.6 131.3	0.4 0.8 0.8 0.8 0.9	1 2	0.1 0.1 0.2 0.3 0.4	115/1 115/1 115/1 115/1 115/1	24 24 24 24 24 24	1-6 1-6 1-6 1-6 1-6
/ 2-2 / 2-3 / 2-4 / 2-5 / 2-6 / 2-7 / 2-8	2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET	TITUS TITUS TITUS TITUS TITUS TITUS	DESV DESV DESV DESV DESV DESV	6 7 6 6 6	12X10 12X12 12X10 12X10 12X10 12X10	220 420 500 320 330 310	210 120 120 100 100 100	66 126 150 96 99	55.0 55.0 55.0 55.0 55.0 55.0	91.7 99.2 100.4 90.0 90.0	2.6 6.1 7.4 3.6 3.8 3.5	140.0 140.0 140.0 140.0 140.0	125.3 122.1 130.6 131.3 129.9	0.4 0.8 0.8 0.8 0.9 0.7	1 2	0.1 0.1 0.2 0.3 0.4 0.2	115/1 115/1 115/1 115/1 115/1 115/1	24 24 24 24 24 24 24	1-6 1-6 1-6 1-6 1-6 1-6
7 2-2 7 2-3 7 2-4 7 2-5 7 2-6 7 2-7 7 2-8 7 2-9	2 2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET BCDR4 CORRIDOR-B	TITUS TITUS TITUS TITUS TITUS TITUS TITUS TITUS	DESV DESV DESV DESV DESV DESV DESV	6 7 6 6 6 6 5	12X10 12X12 12X10 12X10 12X10 12X10 12X10	220 420 500 320 330 310 190	210 120 120 100 100 100 210	66 126 150 96 99 93 63	55.0 55.0 55.0 55.0 55.0 55.0 55.0	91.7 99.2 100.4 90.0 90.0 90.0 92.5	2.6 6.1 7.4 3.6 3.8 3.5 2.6	140.0 140.0 140.0 140.0 140.0 140.0	125.3 122.1 130.6 131.3 129.9 127.5	0.4 0.8 0.8 0.8 0.9 0.7 0.4	1 2 2 1 1 1	0.1 0.1 0.2 0.3 0.4 0.2 0.1	115/1 115/1 115/1 115/1 115/1 115/1 115/1	24 24 24 24 24 24 24 24	1-6 1-6 1-6 1-6 1-6 1-6
2-2 2-3 2-4 2-5 2-6 2-7 2-8 2-9 2-10	2 2 2 2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET BCDR4 CORRIDOR-B B119 RESIDENT / TOILET (BARIATRIC)	TITUS TITUS TITUS TITUS TITUS TITUS TITUS TITUS TITUS	DESV DESV DESV DESV DESV DESV DESV DESV	6 7 6 6 6 6 5	12X10 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10	220 420 500 320 330 310 190 620	210 120 120 100 100 100 210 200	66 126 150 96 99 93 63 186	55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0	91.7 99.2 100.4 90.0 90.0 90.0 92.5 95.8	2.6 6.1 7.4 3.6 3.8 3.5 2.6 8.2	140.0 140.0 140.0 140.0 140.0 140.0 140.0	125.3 122.1 130.6 131.3 129.9 127.5 120.0	0.4 0.8 0.8 0.8 0.9 0.7 0.4 0.8	1 2	0.1 0.2 0.3 0.4 0.2 0.1	115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1	24 24 24 24 24 24 24 24 24	1-6 1-6 1-6 1-6 1-6 1-6 1-6
7 2-2 7 2-3 7 2-4 7 2-5 7 2-6 7 2-7 7 2-8 7 2-9 7 2-10 7 2-11	2 2 2 2 2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET BCDR4 CORRIDOR-B B119 RESIDENT / TOILET (BARIATRIC) B28 HAC	TITUS	DESV DESV DESV DESV DESV DESV DESV DESV	6 7 6 6 6 6 5 8	12X10 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X10	220 420 500 320 330 310 190 620 200	210 120 120 100 100 100 210 200 200	66 126 150 96 99 93 63 186 60	55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0	91.7 99.2 100.4 90.0 90.0 90.0 92.5 95.8 93.5	2.6 6.1 7.4 3.6 3.8 3.5 2.6 8.2 2.5	140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0	125.3 122.1 130.6 131.3 129.9 127.5 120.0 127.9	0.4 0.8 0.8 0.9 0.7 0.4 0.8 0.4	1 2 2 1 1 1	0.1 0.2 0.3 0.4 0.2 0.1 0.2 0.1	115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1	24 24 24 24 24 24 24 24 24 24 24	1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6
/ 2-2 / 2-3 / 2-4 / 2-5 / 2-6 / 2-7 / 2-8 / 2-9 / 2-10 / 2-11	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET BCDR4 CORRIDOR-B B119 RESIDENT / TOILET (BARIATRIC) B28 HAC B134 SNOEZELEN	TITUS	DESV DESV DESV DESV DESV DESV DESV DESV	6 7 6 6 6 6 5 8	12X10 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X10	220 420 500 320 330 310 190 620 200 400	210 120 120 100 100 100 210 200 200 130	66 126 150 96 99 93 63 186 60	55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0	91.7 99.2 100.4 90.0 90.0 90.0 92.5 95.8 93.5 90.0	2.6 6.1 7.4 3.6 3.8 3.5 2.6 8.2 2.5 4.6	140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0	125.3 122.1 130.6 131.3 129.9 127.5 120.0 127.9 127.5	0.4 0.8 0.8 0.9 0.7 0.4 0.8 0.4 0.7	1 2 2 1 1 1	0.1 0.2 0.3 0.4 0.2 0.1 0.2 0.1 0.3	115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1	24 24 24 24 24 24 24 24 24 24 24	1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6
/ 2-2 / 2-3 / 2-4 / 2-5 / 2-6 / 2-7 / 2-8 / 2-9 / 2-10 / 2-11 / 2-12 / 2-13	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET BCDR4 CORRIDOR-B B119 RESIDENT / TOILET (BARIATRIC) B28 HAC B134 SNOEZELEN B135 RESIDENT ROOM / TOILET	TITUS	DESV DESV DESV DESV DESV DESV DESV DESV	6 7 6 6 6 5 8 8	12X10 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X12 12X12	220 420 500 320 330 310 190 620 200 400 410	210 120 120 100 100 100 210 200 200 130 40	66 126 150 96 99 93 63 186 60 120	55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0	91.7 99.2 100.4 90.0 90.0 90.0 92.5 95.8 93.5 90.0	2.6 6.1 7.4 3.6 3.8 3.5 2.6 8.2 2.5 4.6 4.7	140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0	125.3 122.1 130.6 131.3 129.9 127.5 120.0 127.9 127.5 128.5	0.4 0.8 0.8 0.9 0.7 0.4 0.8 0.4 0.7 0.8	1 2 2 1 1 1 1 2 1 1	0.1 0.2 0.3 0.4 0.2 0.1 0.2 0.1 0.3 0.4	115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1	24 24 24 24 24 24 24 24 24 24 24 24	1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6
/ 2-2 / 2-3 / 2-4 / 2-5 / 2-6 / 2-7 / 2-8 / 2-9 / 2-10 / 2-11 / 2-12 / 2-13 / 2-14	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET BCDR4 CORRIDOR-B B119 RESIDENT / TOILET (BARIATRIC) B28 HAC B134 SNOEZELEN B135 RESIDENT ROOM / TOILET B133 REC THERAPY	TITUS	DESV DESV DESV DESV DESV DESV DESV DESV	6 7 6 6 6 5 8 6 8 8	12X10 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X12 12X12 12X12	220 420 500 320 330 310 190 620 200 400 410 960	210 120 120 100 100 100 210 200 200 130 40	66 126 150 96 99 93 63 186 60 120 125 288	55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0	91.7 99.2 100.4 90.0 90.0 90.0 92.5 95.8 93.5 90.0 90.0	2.6 6.1 7.4 3.6 3.8 3.5 2.6 8.2 2.5 4.6 4.7	140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0	125.3 122.1 130.6 131.3 129.9 127.5 120.0 127.9 127.5 128.5 119.9	0.4 0.8 0.8 0.9 0.7 0.4 0.8 0.4 0.7 0.8 1.3	1 2 2 1 1 1 1 2 1 1 1 2	0.1 0.2 0.3 0.4 0.2 0.1 0.2 0.1 0.3 0.4 0.2	115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1	24 24 24 24 24 24 24 24 24 24 24 24 24	1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6
7 2-2 7 2-3 7 2-4 7 2-5 7 2-6 7 2-7 7 2-8 7 2-9 7 2-10 7 2-11 7 2-12 7 2-13 7 2-14 7 2-15	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET BCDR4 CORRIDOR-B B119 RESIDENT / TOILET (BARIATRIC) B28 HAC B134 SNOEZELEN B135 RESIDENT ROOM / TOILET B133 REC THERAPY B136 RESIDENT ROOM / TOILET	TITUS	DESV DESV DESV DESV DESV DESV DESV DESV	6 7 6 6 6 5 8 8 6 8 8	12X10 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X12 12X12 12X12 12X12	220 420 500 320 330 310 190 620 200 400 410 960 420	210 120 120 100 100 100 210 200 200 130 40 40	66 126 150 96 99 93 63 186 60 120	55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0	91.7 99.2 100.4 90.0 90.0 90.0 92.5 95.8 93.5 90.0 94.7 99.2	2.6 6.1 7.4 3.6 3.8 3.5 2.6 8.2 2.5 4.6 4.7 12.4 6.1	140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0	125.3 122.1 130.6 131.3 129.9 127.5 120.0 127.9 127.5 128.5 119.9 125.3	0.4 0.8 0.8 0.9 0.7 0.4 0.8 0.4 0.7 0.8 1.3 0.8	1 2 2 1 1 1 1 2 1 1	0.1 0.2 0.3 0.4 0.2 0.1 0.2 0.1 0.3 0.4 0.2	115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1	24 24 24 24 24 24 24 24 24 24 24 24 24 2	1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6
7 2-2 7 2-3 7 2-4 7 2-5 7 2-6 7 2-7 7 2-8 7 2-9 7 2-10 7 2-11 7 2-12 7 2-13 7 2-14 7 2-15 7 2-16	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET BCDR4 CORRIDOR-B B119 RESIDENT / TOILET (BARIATRIC) B28 HAC B134 SNOEZELEN B135 RESIDENT ROOM / TOILET B133 REC THERAPY B136 RESIDENT ROOM / TOILET B132 REC THERAPY OFFICE	TITUS	DESV DESV DESV DESV DESV DESV DESV DESV	6 7 6 6 6 5 8 6 8 8	12X10 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X12 12X12 12X12 12X12 12X12	220 420 500 320 330 310 190 620 200 400 410 960 420 100	210 120 120 100 100 100 210 200 200 130 40 40 120 40	66 126 150 96 99 93 63 186 60 120 125 288 126	55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0	91.7 99.2 100.4 90.0 90.0 90.0 92.5 95.8 93.5 90.0 94.7 99.2 90.0	2.6 6.1 7.4 3.6 3.8 3.5 2.6 8.2 2.5 4.6 4.7 12.4 6.1 2.0	140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0	125.3 122.1 130.6 131.3 129.9 127.5 120.0 127.9 127.5 128.5 119.9 125.3 120.0	0.4 0.8 0.8 0.9 0.7 0.4 0.8 0.4 0.7 0.8 1.3 0.8	1 2 2 1 1 1 1 2 1 1 1 2	0.1 0.2 0.3 0.4 0.2 0.1 0.2 0.1 0.3 0.4 0.2 0.1 0.3	115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1	24 24 24 24 24 24 24 24 24 24 24 24 24 2	1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6
7 2-2 7 2-3 7 2-4 7 2-5 7 2-6 7 2-7 7 2-8 7 2-9 7 2-10 7 2-11 7 2-12 7 2-13 7 2-14 7 2-15 7 2-16 7 2-17	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET BCDR4 CORRIDOR-B B119 RESIDENT / TOILET (BARIATRIC) B28 HAC B134 SNOEZELEN B135 RESIDENT ROOM / TOILET B133 REC THERAPY B136 RESIDENT ROOM / TOILET B132 REC THERAPY OFFICE BCDR2 CORRIDOR-B	TITUS	DESV DESV DESV DESV DESV DESV DESV DESV	6 7 6 6 6 5 8 8 6 8 8	12X10 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X12 12X12 12X12 12X12 12X12 12X12 12X12	220 420 500 320 330 310 190 620 200 400 410 960 420 100 200	210 120 120 100 100 210 200 200 130 40 40 120 40 200	66 126 150 96 99 93 63 186 60 120 125 288 126	55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0	91.7 99.2 100.4 90.0 90.0 90.0 92.5 95.8 93.5 90.0 90.0 94.7 99.2 90.0 93.5	2.6 6.1 7.4 3.6 3.8 3.5 2.6 8.2 2.5 4.6 4.7 12.4 6.1 2.0 2.5	140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0	125.3 122.1 130.6 131.3 129.9 127.5 120.0 127.9 127.5 128.5 119.9 125.3 120.0 127.9	0.4 0.8 0.8 0.9 0.7 0.4 0.8 0.4 0.7 0.8 1.3 0.8 1.0 0.4	1 2 2 1 1 1 1 2 1 1 2 2 1 1 1 2	0.1 0.2 0.3 0.4 0.2 0.1 0.2 0.1 0.3 0.4 0.2 0.1 0.3 0.4	115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1	24 24 24 24 24 24 24 24 24 24 24 24 24 2	1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6
2-2 2-3 2-4 2-5 2-6 2-7 2-8 2-9 2-10 2-11 2-12 2-13 2-14 2-15 2-16 2-17 2-18	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET BCDR4 CORRIDOR-B B119 RESIDENT / TOILET (BARIATRIC) B28 HAC B134 SNOEZELEN B135 RESIDENT ROOM / TOILET B133 REC THERAPY B136 RESIDENT ROOM / TOILET B132 REC THERAPY OFFICE BCDR2 CORRIDOR-B B131 RESIDENT ROOM / TOILET	TITUS	DESV DESV DESV DESV DESV DESV DESV DESV	6 7 6 6 6 5 8 8 6 8 8	12X10 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12	220 420 500 320 330 310 190 620 200 400 410 960 420 100 200 520	210 120 120 100 100 100 210 200 200 130 40 40 120 40 200 130	66 126 150 96 99 93 63 186 60 120 125 288 126	55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0	91.7 99.2 100.4 90.0 90.0 90.0 92.5 95.8 93.5 90.0 90.0 94.7 99.2 90.0 93.5 99.5	2.6 6.1 7.4 3.6 3.8 3.5 2.6 8.2 2.5 4.6 4.7 12.4 6.1 2.0 2.5 7.5	140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0	125.3 122.1 130.6 131.3 129.9 127.5 120.0 127.9 127.5 128.5 119.9 125.3 120.0 127.9 121.7	0.4 0.8 0.8 0.9 0.7 0.4 0.8 0.4 0.7 0.8 1.3 0.8 1.0 0.4 0.8	1 2 2 1 1 1 1 2 1 1 1 2 2 1 1 1 2 2	0.1 0.2 0.3 0.4 0.2 0.1 0.2 0.1 0.3 0.4 0.2 0.1 0.5 0.1	115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1	24 24 24 24 24 24 24 24 24 24 24 24 24 2	1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6
7 2-2 7 2-3 7 2-4 7 2-5 7 2-6 7 2-7 7 2-8 7 2-9 7 2-10 7 2-11 7 2-12 7 2-13 7 2-14 7 2-15 7 2-16 7 2-17 7 2-18 7 2-19	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET BCDR4 CORRIDOR-B B119 RESIDENT / TOILET (BARIATRIC) B28 HAC B134 SNOEZELEN B135 RESIDENT ROOM / TOILET B133 REC THERAPY B136 RESIDENT ROOM / TOILET B132 REC THERAPY OFFICE BCDR2 CORRIDOR-B B131 RESIDENT ROOM / TOILET B137 RESIDENT ROOM / TOILET	TITUS	DESV DESV DESV DESV DESV DESV DESV DESV	6 7 6 6 6 5 8 8 6 8 8	12X10 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12	220 420 500 320 330 310 190 620 200 400 410 960 420 100 200 520 450	210 120 120 100 100 210 200 200 130 40 40 120 40 200 130 120	66 126 150 96 99 93 63 186 60 120 125 288 126	55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0	91.7 99.2 100.4 90.0 90.0 90.0 92.5 95.8 93.5 90.0 94.7 99.2 90.0 93.5 99.5 97.8	2.6 6.1 7.4 3.6 3.8 3.5 2.6 8.2 2.5 4.6 4.7 12.4 6.1 2.0 2.5 7.5 6.3	140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0	125.3 122.1 130.6 131.3 129.9 127.5 120.0 127.9 127.5 128.5 119.9 125.3 120.0 127.9 121.7	0.4 0.8 0.8 0.9 0.7 0.4 0.8 0.4 0.7 0.8 1.3 0.8 1.0 0.4 0.8	1 2 2 1 1 1 1 2 1 1 2 2 1 1 1 2 2 1 1 2 2 2	0.1 0.2 0.3 0.4 0.2 0.1 0.2 0.1 0.3 0.4 0.2 0.1 0.5 0.1 0.5	115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1	24 24 24 24 24 24 24 24 24 24 24 24 24 2	1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6
7 2-2 7 2-3 7 2-4 7 2-5 7 2-6 7 2-7 7 2-8 7 2-9 7 2-10 7 2-11 7 2-12 7 2-13 7 2-14 7 2-15 7 2-16 7 2-17 7 2-18 7 2-19 7 2-19 7 2-20	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET BCDR4 CORRIDOR-B B119 RESIDENT / TOILET (BARIATRIC) B28 HAC B134 SNOEZELEN B135 RESIDENT ROOM / TOILET B133 REC THERAPY B136 RESIDENT ROOM / TOILET B132 REC THERAPY OFFICE BCDR2 CORRIDOR-B B131 RESIDENT ROOM / TOILET B137 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET	TITUS	DESV DESV DESV DESV DESV DESV DESV DESV	6 7 6 6 6 5 8 8 6 8 8	12X10 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X8 12X10 12X12 12X12 12X12 12X12 12X12	220 420 500 320 330 310 190 620 200 400 410 960 420 100 200 520 450 520	210 120 120 100 100 100 210 200 200 130 40 40 120 40 200 130 120 130	66 126 150 96 99 93 63 186 60 120 125 288 126 60 156 135	55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0	91.7 99.2 100.4 90.0 90.0 90.0 92.5 95.8 93.5 90.0 94.7 99.2 90.0 93.5 99.5 97.8 99.5	2.6 6.1 7.4 3.6 3.8 3.5 2.6 8.2 2.5 4.6 4.7 12.4 6.1 2.0 2.5 7.5 6.3 7.5	140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0	125.3 122.1 130.6 131.3 129.9 127.5 120.0 127.9 127.5 128.5 119.9 125.3 120.0 127.9 121.7 124.8 121.7	0.4 0.8 0.8 0.9 0.7 0.4 0.8 0.4 0.7 0.8 1.3 0.8 1.0 0.4 0.8	1 2 2 1 1 1 1 2 1 1 1 2 2 1 1 1 2 2	0.1 0.2 0.3 0.4 0.2 0.1 0.2 0.1 0.3 0.4 0.2 0.1 0.5 0.1 0.2	115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1	24 24 24 24 24 24 24 24 24 24 24 24 24 2	1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6
/ 2-2 / 2-3 / 2-4 / 2-5 / 2-6 / 2-7 / 2-8 / 2-9 / 2-10 / 2-11 / 2-12 / 2-13 / 2-14 / 2-15 / 2-16 / 2-17 / 2-18 / 2-19 / 2-20 / 2-21	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET BCDR4 CORRIDOR-B B119 RESIDENT / TOILET (BARIATRIC) B28 HAC B134 SNOEZELEN B135 RESIDENT ROOM / TOILET B133 REC THERAPY B136 RESIDENT ROOM / TOILET B132 REC THERAPY OFFICE BCDR2 CORRIDOR-B B131 RESIDENT ROOM / TOILET B137 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET	TITUS	DESV DESV DESV DESV DESV DESV DESV DESV	6 7 6 6 6 5 8 8 6 8 8	12X10 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X12 12X12 12X12 12X12 12X12 12X12 12X8 12X10 12X12 12X12 12X12 12X12 12X12 12X12	220 420 500 320 330 310 190 620 200 400 410 960 420 100 200 520 450 520 150	210 120 120 100 100 100 210 200 230 130 40 40 120 40 200 130 130 30	66 126 150 96 99 93 63 186 60 120 125 288 126 60 156 135 156 45	55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0	91.7 99.2 100.4 90.0 90.0 90.0 92.5 95.8 93.5 90.0 94.7 99.2 90.0 93.5 99.5 99.5 99.5 99.5	2.6 6.1 7.4 3.6 3.8 3.5 2.6 8.2 2.5 4.6 4.7 12.4 6.1 2.0 2.5 7.5 6.3 7.5 2.1	140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0	125.3 122.1 130.6 131.3 129.9 127.5 120.0 127.9 127.5 128.5 119.9 125.3 120.0 127.9 121.7 124.8 121.7	0.4 0.8 0.8 0.9 0.7 0.4 0.8 0.4 0.7 0.8 1.3 0.8 1.0 0.4 0.8 0.4	1 2 2 1 1 1 1 2 1 1 2 2 1 1 1 2 2 1 1 2 2 2	0.1 0.2 0.3 0.4 0.2 0.1 0.2 0.1 0.3 0.4 0.2 0.1 0.5 0.1 0.2 0.1	115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1	24 24 24 24 24 24 24 24 24 24 24 24 24 2	1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6
7 2-2 7 2-3 7 2-4 7 2-5 7 2-6 7 2-7 7 2-8 7 2-9 7 2-10 7 2-11 7 2-12 7 2-13 7 2-14 7 2-15 7 2-16 7 2-17 7 2-18 7 2-19 7 2-20 7 2-21	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET BCDR4 CORRIDOR-B B119 RESIDENT / TOILET (BARIATRIC) B28 HAC B134 SNOEZELEN B135 RESIDENT ROOM / TOILET B133 REC THERAPY B136 RESIDENT ROOM / TOILET B132 REC THERAPY OFFICE BCDR2 CORRIDOR-B B131 RESIDENT ROOM / TOILET B137 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET	TITUS	DESV DESV DESV DESV DESV DESV DESV DESV	6 7 6 6 6 5 8 8 6 8 8	12X10 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12	220 420 500 320 330 310 190 620 200 400 410 960 420 100 200 520 450 520 150 120	210 120 120 100 100 100 210 200 20	66 126 150 96 99 93 63 186 60 120 125 288 126 60 156 135 156 45 40	55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0	91.7 99.2 100.4 90.0 90.0 90.0 92.5 95.8 93.5 90.0 94.7 99.2 90.0 93.5 99.5 99.5 99.5 99.5 98.9 101.2	2.6 6.1 7.4 3.6 3.8 3.5 2.6 8.2 2.5 4.6 4.7 12.4 6.1 2.0 2.5 7.5 6.3 7.5 2.1 2.0	140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0	125.3 122.1 130.6 131.3 129.9 127.5 120.0 127.9 127.5 128.5 119.9 125.3 120.0 127.9 121.7 124.8 121.7 129.6 130.3	0.4 0.8 0.8 0.9 0.7 0.4 0.8 0.4 0.7 0.8 1.3 0.8 1.0 0.4 0.8 0.4	1 2 2 1 1 1 1 2 1 1 2 2 1 1 1 2 2 1 1 2 2 2	0.1 0.2 0.3 0.4 0.2 0.1 0.2 0.1 0.3 0.4 0.2 0.1 0.5 0.1 0.2 0.1 0.2	115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1	24 24 24 24 24 24 24 24 24 24 24 24 24 2	1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6
/ 2-2 / 2-3 / 2-4 / 2-5 / 2-6 / 2-7 / 2-8 / 2-9 / 2-10 / 2-11 / 2-12 / 2-13 / 2-14 / 2-15 / 2-16 / 2-17 / 2-18 / 2-19 / 2-20 / 2-21 / 2-22 / 2-23	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET BCDR4 CORRIDOR-B B119 RESIDENT / TOILET (BARIATRIC) B28 HAC B134 SNOEZELEN B135 RESIDENT ROOM / TOILET B133 REC THERAPY B136 RESIDENT ROOM / TOILET B132 REC THERAPY OFFICE BCDR2 CORRIDOR-B B131 RESIDENT ROOM / TOILET B137 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET B100 MEDS B129 SHARED OFFICE / REPORT B102 NURSE STATION	TITUS	DESV DESV DESV DESV DESV DESV DESV DESV	6 7 6 6 6 6 5 8 8 8 10 6 5 5 7 6 7 6	12X10 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12	220 420 500 320 330 310 190 620 200 400 410 960 420 100 200 520 450 520 150 120 180	210 120 120 100 100 210 200 200	66 126 150 96 99 93 63 186 60 120 125 288 126 60 156 135 156 45 40 55	55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0	91.7 99.2 100.4 90.0 90.0 90.0 92.5 95.8 93.5 90.0 90.0 94.7 99.2 90.0 93.5 99.5 97.8 99.5 97.8 99.5 97.8	2.6 6.1 7.4 3.6 3.8 3.5 2.6 8.2 2.5 4.6 4.7 12.4 6.1 2.0 2.5 7.5 6.3 7.5 2.1 2.0 2.4	140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0	125.3 122.1 130.6 131.3 129.9 127.5 120.0 127.9 127.5 128.5 119.9 125.3 120.0 127.9 121.7 124.8 121.7 129.6 130.3 128.4	0.4 0.8 0.8 0.9 0.7 0.4 0.8 0.4 0.7 0.8 1.3 0.8 1.0 0.4 0.8 0.8 0.4 0.4	1 2 2 1 1 1 1 2 1 1 2 2 1 1 1 2 2 1 1 2 2 2	0.1 0.2 0.3 0.4 0.2 0.1 0.2 0.1 0.3 0.4 0.2 0.1 0.5 0.1 0.2 0.1 0.2	115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1	24 24 24 24 24 24 24 24 24 24 24 24 24 2	1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6
7 2-2 7 2-3 7 2-4 7 2-5 7 2-6 7 2-7 7 2-8 7 2-9 7 2-10 7 2-11 7 2-12 7 2-13 7 2-14 7 2-15 7 2-16 7 2-17 7 2-18 7 2-19 7 2-20 7 2-21 7 2-22 7 2-23 7 2-24	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET BCDR4 CORRIDOR-B B119 RESIDENT / TOILET (BARIATRIC) B28 HAC B134 SNOEZELEN B135 RESIDENT ROOM / TOILET B133 REC THERAPY B136 RESIDENT ROOM / TOILET B132 REC THERAPY OFFICE BCDR2 CORRIDOR-B B131 RESIDENT ROOM / TOILET B137 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET	TITUS	DESV DESV DESV DESV DESV DESV DESV DESV	6 7 6 6 6 6 5 8 8 8 10 6 5 5 7 6 7 6 7 6	12X10 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12	220 420 500 320 330 310 190 620 200 400 410 960 420 100 200 520 450 520 150 120 180 200	210 120 120 100 100 100 210 200 20	66 126 150 96 99 93 63 186 60 120 125 288 126 60 156 135 156 45 40 55 60	55.0 55.0	91.7 99.2 100.4 90.0 90.0 90.0 92.5 95.8 93.5 90.0 94.7 99.2 90.0 93.5 99.5 97.8 99.5 97.8 99.5 97.8 99.5	2.6 6.1 7.4 3.6 3.8 3.5 2.6 8.2 2.5 4.6 4.7 12.4 6.1 2.0 2.5 7.5 6.3 7.5 2.1 2.0 2.4 2.5	140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0	125.3 122.1 130.6 131.3 129.9 127.5 120.0 127.9 127.5 128.5 119.9 125.3 120.0 127.9 121.7 124.8 121.7 129.6 130.3 128.4	0.4 0.8 0.8 0.9 0.7 0.4 0.8 0.4 0.7 0.8 1.3 0.8 1.0 0.4 0.8 0.4	1 2 2 1 1 1 1 2 1 1 2 2 1 1 1 2 2 1 1 2 2 2	0.1 0.2 0.3 0.4 0.2 0.1 0.2 0.1 0.3 0.4 0.2 0.1 0.5 0.1 0.2 0.1 0.2 0.1	115/1 115/1	24 24 24 24 24 24 24 24 24 24 24 24 24 2	1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6
2-2 2-3 2-4 2-5 2-6 2-7 2-8 2-9 2-10 2-11 2-12 2-13 2-14 2-15 2-16 2-17 2-18 2-19 2-20 2-21 2-22 2-23 2-24 2-25	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET BCDR4 CORRIDOR-B B119 RESIDENT / TOILET (BARIATRIC) B28 HAC B134 SNOEZELEN B135 RESIDENT ROOM / TOILET B133 REC THERAPY B136 RESIDENT ROOM / TOILET B132 REC THERAPY OFFICE BCDR2 CORRIDOR-B B131 RESIDENT ROOM / TOILET B137 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET B100 MEDS B129 SHARED OFFICE / REPORT B102 NURSE STATION BCDR3 CORRIDOR	TITUS	DESV DESV DESV DESV DESV DESV DESV DESV	6 7 6 6 6 6 5 8 8 8 10 6 5 7 6 7 6 7 6 4 4	12X10 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12	220 420 500 320 330 310 190 620 200 400 410 960 420 100 200 520 450 520 150 120 180	210 120 120 100 100 100 210 200 230 200 130 40 40 120 40 200 130 120 130 120 130 120 130 120	66 126 150 96 99 93 63 186 60 120 125 288 126 60 156 135 156 45 40 55	55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0 55.0	91.7 99.2 100.4 90.0 90.0 90.0 92.5 95.8 93.5 90.0 90.0 94.7 99.2 90.0 93.5 99.5 97.8 99.5 97.8 99.5 97.8	2.6 6.1 7.4 3.6 3.8 3.5 2.6 8.2 2.5 4.6 4.7 12.4 6.1 2.0 2.5 7.5 6.3 7.5 2.1 2.0 2.4	140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0 140.0	125.3 122.1 130.6 131.3 129.9 127.5 120.0 127.9 127.5 128.5 119.9 125.3 120.0 127.9 121.7 124.8 121.7 129.6 130.3 128.4	0.4 0.8 0.8 0.9 0.7 0.4 0.8 0.4 0.7 0.8 1.3 0.8 1.0 0.4 0.8 0.8 0.4 0.4 0.4 0.8	1 2 2 1 1 1 1 2 1 1 2 2 1 1 1 2 2 1 1 2 2 2	0.1 0.2 0.3 0.4 0.2 0.1 0.2 0.1 0.3 0.4 0.2 0.1 0.5 0.1 0.2 0.1 0.2	115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1 115/1	24 24 24 24 24 24 24 24 24 24 24 24 24 2	1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6
2-2 2-3 2-4 2-5 2-6 2-7 2-8 2-9 2-10 2-11 2-12 2-13 2-14 2-15 2-16 2-17 2-18 2-19 2-20 2-21 2-22 2-23 2-24 2-25 2-26	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET B127 RESIDENT ROOM / TOILET B128 RESIDENT / TOILET (BARIATRIC) B28 HAC B139 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET B131 RESIDENT ROOM / TOILET B132 REC THERAPY B136 RESIDENT ROOM / TOILET B137 RESIDENT ROOM / TOILET B137 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET B100 MEDS B129 SHARED OFFICE / REPORT B102 NURSE STATION BCDR3 CORRIDOR B113 SOCIAL WORKER	TITUS	DESV DESV DESV DESV DESV DESV DESV DESV	6 7 6 6 6 6 5 8 8 8 10 6 5 7 6 7 6 7 6 4 4	12X10 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12	220 420 500 320 330 310 190 620 200 400 410 960 420 100 200 520 450 520 150 120 180 200 210	210 120 120 100 100 100 210 200 20	66 126 150 96 99 93 63 186 60 120 125 288 126 60 156 135 156 45 40 55 60 65	55.0 55.0	91.7 99.2 100.4 90.0 90.0 90.0 92.5 95.8 93.5 90.0 94.7 99.2 90.0 93.5 97.8 99.5 97.8 99.5 97.8 99.5 98.9 101.2 95.1 93.5	2.6 6.1 7.4 3.6 3.8 3.5 2.6 8.2 2.5 4.6 4.7 12.4 6.1 2.0 2.5 7.5 6.3 7.5 2.1 2.0 2.4 2.5 2.6	140.0 140.0	125.3 122.1 130.6 131.3 129.9 127.5 120.0 127.9 127.5 128.5 119.9 125.3 120.0 127.9 121.7 124.8 121.7 129.6 130.3 128.4 127.9 127.4	0.4 0.8 0.8 0.9 0.7 0.4 0.8 0.4 0.7 0.8 1.3 0.8 1.0 0.4 0.8 0.8 0.4 0.4 0.4 0.8	1 2 2 1 1 1 1 2 1 1 2 2 1 1 1 2 2 1 1 2 2 2	0.1 0.2 0.3 0.4 0.2 0.1 0.2 0.1 0.3 0.4 0.2 0.1 0.5 0.1 0.2 0.1 0.2 0.1 0.5	115/1 115/1	24 24 24 24 24 24 24 24 24 24 24 24 24 2	1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6
2-2 2-3 2-4 2-5 2-6 2-7 2-8 2-9 2-10 2-11 2-12 2-13 2-14 2-15 2-16 2-17 2-18 2-19 2-20 2-21 2-22 2-23 2-24 2-25 2-26 2-27	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET B127 RESIDENT ROOM / TOILET B128 HAC B139 RESIDENT / TOILET (BARIATRIC) B28 HAC B134 SNOEZELEN B135 RESIDENT ROOM / TOILET B136 RESIDENT ROOM / TOILET B137 RESIDENT ROOM / TOILET B137 RESIDENT ROOM / TOILET B137 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET B131 SOCIAL WORKER B114 CLINICAL NURSE LEADER	TITUS	DESV DESV DESV DESV DESV DESV DESV DESV	6 7 6 6 6 6 5 8 8 8 10 6 5 7 6 7 6 7 6 4 4	12X10 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X12	220 420 500 320 330 310 190 620 200 400 410 960 420 100 200 520 450 520 150 120 180 200 210 250	210 120 120 100 100 100 210 200 20	66 126 150 96 99 93 63 186 60 120 125 288 126 60 156 135 156 45 40 55 60 65 75	55.0 55.0	91.7 99.2 100.4 90.0 90.0 90.0 92.5 95.8 93.5 90.0 94.7 99.2 90.0 93.5 97.8 99.5 97.8 99.5 97.8 99.5 99.5 99.0 90.0	2.6 6.1 7.4 3.6 3.8 3.5 2.6 8.2 2.5 4.6 4.7 12.4 6.1 2.0 2.5 7.5 6.3 7.5 2.1 2.0 2.4 2.5 2.6	140.0 140.0	125.3 122.1 130.6 131.3 129.9 127.5 120.0 127.9 127.5 128.5 119.9 125.3 120.0 127.9 121.7 124.8 121.7 129.6 130.3 128.4 127.9 127.4 127.1	0.4 0.8 0.8 0.9 0.7 0.4 0.8 0.4 0.7 0.8 1.3 0.8 1.0 0.4 0.8 0.8 0.4 0.4 0.4 0.4 0.4 0.4 0.4	1 2 2 1 1 1 1 2 1 1 2 2 1 1 1 2 2 1 1 2 2 2	0.1 0.2 0.3 0.4 0.2 0.1 0.2 0.1 0.3 0.4 0.2 0.1 0.5 0.1 0.2 0.1 0.2 0.1 0.2	115/1 115/1	24 24 24 24 24 24 24 24 24 24 24 24 24 2	1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6
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2-2 2-3 2-4 2-5 2-6 2-7 2-8 2-9 2-10 2-11 2-12 2-13 2-14 2-15 2-16 2-17 2-18 2-19 2-20 2-21 2-22 2-23 2-24 2-25 2-26 2-27 2-28 2-29	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET BCDR4 CORRIDOR-B B119 RESIDENT / TOILET (BARIATRIC) B28 HAC B134 SNOEZELEN B135 RESIDENT ROOM / TOILET B133 REC THERAPY B136 RESIDENT ROOM / TOILET B132 REC THERAPY OFFICE BCDR2 CORRIDOR-B B131 RESIDENT ROOM / TOILET B137 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET B100 MEDS B129 SHARED OFFICE / REPORT B102 NURSE STATION BCDR3 CORRIDOR B113 SOCIAL WORKER B114 CLINICAL NURSE LEADER B112 NURSE MANAGER BCDR5 CORRIDOR	TITUS	DESV DESV DESV DESV DESV DESV DESV DESV	6 7 6 6 6 6 5 8 8 8 10 6 5 5 7 6 7 6 7 6 4 4 4 5 5 5 5 5	12X10 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X10	220 420 500 320 330 310 190 620 200 400 410 960 420 100 200 520 450 520 150 120 180 200 210 250 220 200	210 120 120 100 100 100 210 200 20	66 126 150 96 99 93 63 186 60 120 125 288 126 60 156 135 156 45 40 55 60 65 75 65 60	55.0 55.0	91.7 99.2 100.4 90.0 90.0 90.0 90.0 92.5 95.8 93.5 90.0 94.7 99.2 90.0 93.5 99.5 97.8 99.5 98.9 101.2 95.1 93.5 92.0 90.0 93.5	2.6 6.1 7.4 3.6 3.8 3.5 2.6 8.2 2.5 4.6 4.7 12.4 6.1 2.0 2.5 7.5 6.3 7.5 2.1 2.0 2.4 2.5 2.6 2.9 2.6 2.5	140.0 140.0	125.3 122.1 130.6 131.3 129.9 127.5 120.0 127.9 127.5 128.5 119.9 125.3 120.0 127.9 121.7 124.8 121.7 129.6 130.3 128.4 127.9 127.4 127.1 127.4	0.4 0.8 0.8 0.9 0.7 0.4 0.8 0.4 0.7 0.8 1.3 0.8 1.0 0.4 0.8 0.4 0.4 0.4 0.4 0.4 0.4 0.4	1 2 2 1 1 1 1 2 1 1 2 2 1 1 1 2 2 1 1 2 2 2	0.1 0.1 0.2 0.3 0.4 0.2 0.1 0.2 0.1 0.2 0.1 0.3 0.4 0.2 0.1 0.5 0.1 0.2 0.1 0.2 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	115/1 115/1	24 24 24 24 24 24 24 24 24 24 24 24 24 2	1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6
2-2 2-3 2-4 2-5 2-6 2-7 2-8 2-9 2-10 2-11 2-12 2-13 2-14 2-15 2-16 2-17 2-18 2-19 2-20 2-21 2-22 2-23 2-24 2-25 2-26 2-27 2-28 2-29 2-30	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET B127 RESIDENT / TOILET (BARIATRIC) B28 HAC B139 RESIDENT / TOILET (BARIATRIC) B130 RESIDENT ROOM / TOILET B131 RESIDENT ROOM / TOILET B132 REC THERAPY B136 RESIDENT ROOM / TOILET B137 RESIDENT ROOM / TOILET B137 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET B131 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET B131 RESIDENT ROOM / TOILET B140 MEDS B141 RESIDENT ROOM / TOILET B151 RESIDENT ROOM / TOILET B161 RESIDENT ROOM / TOILET B170 MEDS B171 RESIDENT ROOM / TOILET B171 RESIDENT ROOM / TOILET B172 RESIDENT ROOM / TOILET B173 RESIDENT ROOM / TOILET B174 RESIDENT ROOM / TOILET B175 RESIDENT ROOM / TOILET B175 RESIDENT ROOM / TOILET B176 RESIDENT ROOM / TOILET B177 RESIDENT ROOM / TOILET	TITUS	DESV DESV DESV DESV DESV DESV DESV DESV	6 7 6 6 6 6 5 8 8 8 10 6 5 5 7 6 7 6 7 6 4 4 4 5 5 5 5 5	12X10 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X10	220 420 500 320 330 310 190 620 200 400 410 960 420 100 200 520 450 520 150 120 180 200 210 250 220 200	210 120 120 100 100 210 200 200	66 126 150 96 99 93 63 186 60 120 125 288 126 60 156 135 156 45 40 55 60 65 75 65 60 65	55.0 55.0	91.7 99.2 100.4 90.0 90.0 90.0 90.0 92.5 95.8 93.5 90.0 94.7 99.2 90.0 93.5 97.8 99.5 97.8 99.5 97.8 99.5 98.9 101.2 95.1 93.5 92.0 93.5	2.6 6.1 7.4 3.6 3.8 3.5 2.6 8.2 2.5 4.6 4.7 12.4 6.1 2.0 2.5 7.5 6.3 7.5 2.1 2.0 2.4 2.5 2.6 2.9 2.6 2.5 2.6	140.0 140.0	125.3 122.1 130.6 131.3 129.9 127.5 120.0 127.9 127.5 128.5 119.9 125.3 120.0 127.9 121.7 124.8 121.7 129.6 130.3 128.4 127.9 127.4 127.4 127.4 127.4	0.4 0.8 0.8 0.9 0.7 0.4 0.8 0.4 0.7 0.8 1.3 0.8 1.0 0.4 0.8 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.4	1 2 2 1 1 1 1 1 2 1 1 1 2 2 1 1 1 2 2 1 1 1 1 2 2 1	0.1 0.1 0.2 0.3 0.4 0.2 0.1 0.2 0.1 0.3 0.4 0.2 0.1 0.5 0.1 0.2 0.1 0.2 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	115/1 115/1	24 24 24 24 24 24 24 24 24 24 24 24 24 2	1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6
2-2 2-3 2-4 2-5 2-6 2-7 2-8 2-9 2-10 2-11 2-12 2-13 2-14 2-15 2-16 2-17 2-18 2-19 2-20 2-21 2-22 2-23 2-24 2-25 2-26 2-27 2-28 2-29 2-30 2-31	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET BCDR4 CORRIDOR-B B119 RESIDENT / TOILET (BARIATRIC) B28 HAC B134 SNOEZELEN B135 RESIDENT ROOM / TOILET B133 REC THERAPY B136 RESIDENT ROOM / TOILET B132 REC THERAPY OFFICE BCDR2 CORRIDOR-B B131 RESIDENT ROOM / TOILET B137 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET B100 MEDS B129 SHARED OFFICE / REPORT B102 NURSE STATION BCDR3 CORRIDOR B113 SOCIAL WORKER B114 CLINICAL NURSE LEADER B112 NURSE MANAGER BCDR5 CORRIDOR B111 GERIATRIC PSYCHIATRIST B115 STAFF BREAK	TITUS	DESV DESV DESV DESV DESV DESV DESV DESV	6 7 6 6 6 6 5 8 8 8 8 10 6 5 5 7 6 7 6 4 4 4 5 5 5 5 5 5	12X10 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X10	220 420 500 320 330 310 190 620 200 400 410 960 420 100 200 520 450 520 150 120 180 200 210 250 220 200 220 1100	210 120 120 100 100 100 210 200 20	66 126 150 96 99 93 63 186 60 120 125 288 126 60 156 135 156 45 40 55 60 65 75 65 60 65 330	55.0 55.0	91.7 99.2 100.4 90.0 90.0 90.0 92.5 95.8 93.5 90.0 94.7 99.2 90.0 93.5 97.8 99.5 97.8 99.5 98.9 101.2 95.1 93.5 92.0 90.0 93.5	2.6 6.1 7.4 3.6 3.8 3.5 2.6 8.2 2.5 4.6 4.7 12.4 6.1 2.0 2.5 7.5 6.3 7.5 2.1 2.0 2.4 2.5 2.6 2.9 2.6 2.5 2.6 13.2	140.0 140.0	125.3 122.1 130.6 131.3 129.9 127.5 120.0 127.9 127.5 128.5 119.9 125.3 120.0 127.9 121.7 124.8 121.7 129.6 130.3 128.4 127.9 127.4 127.4 127.4 127.4 118.6	0.4 0.8 0.8 0.9 0.7 0.4 0.8 0.4 0.7 0.8 1.3 0.8 1.0 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0	1 2 2 1 1 1 1 1 2 1 1 1 2 2 1 1 1 2 2 1 1 1 1 2 2 1	0.1 0.2 0.3 0.4 0.2 0.1 0.2 0.1 0.2 0.1 0.3 0.4 0.2 0.1 0.5 0.1 0.2 0.1 0.2 0.1 0.1 0.2 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.2 0.1 0.1 0.2 0.1 0.1 0.2 0.1 0.1 0.2 0.1 0.1 0.2 0.1 0.1 0.2 0.1 0.1 0.2 0.1 0.2 0.1 0.1 0.2 0.1 0.2 0.1 0.2 0.1 0.1 0.2	115/1 115/1	24 24 24 24 24 24 24 24 24 24 24 24 24 2	1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6
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2-2 2-3 2-4 2-5 2-6 2-7 2-8 2-9 2-10 2-11 2-12 2-13 2-14 2-15 2-16 2-17 2-18 2-19 2-20 2-21 2-22 2-23 2-24 2-25 2-26 2-27 2-28 2-29 2-30 2-31 2-32 2-33 2-34 2-35	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET BCDR4 CORRIDOR-B B119 RESIDENT / TOILET (BARIATRIC) B28 HAC B134 SNOEZELEN B135 RESIDENT ROOM / TOILET B133 REC THERAPY B136 RESIDENT ROOM / TOILET B132 REC THERAPY OFFICE BCDR2 CORRIDOR-B B131 RESIDENT ROOM / TOILET B137 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET B100 MEDS B129 SHARED OFFICE / REPORT B102 NURSE STATION BCDR3 CORRIDOR B113 SOCIAL WORKER B114 CLINICAL NURSE LEADER B112 NURSE MANAGER BCDR5 CORRIDOR B111 GERIATRIC PSYCHIATRIST B115 STAFF BREAK B110 APRN B116 STAFF TOILET B117EXAM ROOM BCDR3 CORRIDOR B109 KITCHEN / PANTRY	TITUS	DESV DESV DESV DESV DESV DESV DESV DESV	6 7 6 6 6 6 5 8 8 8 8 10 6 5 5 7 6 7 6 4 4 4 5 5 5 5 5 5 5 5 7 6 4 4 4 4 5 5 8 8 8 8 8 8 8 8 8 8 8 8 8 8	12X10 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X10 12X8 12X8 12X8 12X8 12X10 12X10 12X10 12X10 12X10 12X8 12X8 12X8 12X8 12X8 12X8 12X8 12X8 12X8 12X10 12X10 12X10 12X10 12X8 12X8 12X8 12X8 12X8 12X8 12X8 12X8 12X8 12X8	220 420 500 320 330 310 190 620 200 400 410 960 420 100 200 520 450 520 150 120 180 200 210 250 220 200 210 210 200 520 100 200 660	210 120 120 100 100 100 100 210 200 200	66 126 150 96 99 93 63 186 60 120 125 288 126 60 156 135 156 45 40 55 60 65 75 65 60 65 330 65 45 45 45 60 200	55.0 55.0	91.7 99.2 100.4 90.0 90.0 90.0 90.0 92.5 95.8 93.5 90.0 90.0 94.7 99.2 90.0 93.5 97.8 99.5 97.8 99.5 97.8 99.5 97.8 99.5 97.8 99.5 97.8 99.5 97.8 99.5 97.8 99.5 97.8 99.5 97.8 99.5 97.8 99.5 97.8 99.5 97.8 99.5 99.0 90.0 93.5 97.8 99.5 99.5 97.8 99.5 99.0 90.0 93.5 99.5 99.5 99.5 99.0 90.0	2.6 6.1 7.4 3.6 3.8 3.5 2.6 8.2 2.5 4.6 4.7 12.4 6.1 2.0 2.5 7.5 6.3 7.5 2.1 2.0 2.4 2.5 2.6 2.9 2.6 2.9 2.6 2.5 2.6 13.2 2.6 2.1 2.1 2.5 8.5	140.0 140.0	125.3 122.1 130.6 131.3 129.9 127.5 120.0 127.9 127.5 128.5 119.9 125.3 120.0 127.9 121.7 124.8 121.7 129.6 130.3 128.4 127.9 127.4 127.4 127.4 127.9 127.4 127.9 127.4 127.9 127.4 118.6 129.6 129.6 129.6 129.6 129.6	0.4 0.8 0.8 0.9 0.7 0.4 0.8 0.4 0.7 0.8 1.3 0.8 1.0 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0	1 2 2 1 1 1 1 1 2 1 1 1 2 2 1 1 1 2 2 2 1	0.1 0.2 0.3 0.4 0.2 0.1 0.2 0.1 0.2 0.1 0.3 0.4 0.2 0.1 0.5 0.1 0.5 0.1 0.2 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	115/1 115/1	24 24 24 24 24 24 24 24 24 24 24 24 24 2	1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6
2-2 2-3 2-4 2-5 2-6 2-7 2-8 2-9 2-10 2-11 2-12 2-13 2-14 2-15 2-16 2-17 2-18 2-19 2-20 2-21 2-22 2-23 2-24 2-25 2-26 2-27 2-28 2-29 2-30 2-31 2-32 2-33 2-34 2-35 2-36	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET BCDR4 CORRIDOR-B B119 RESIDENT / TOILET (BARIATRIC) B28 HAC B134 SNOEZELEN B135 RESIDENT ROOM / TOILET B136 RESIDENT ROOM / TOILET B137 RESIDENT ROOM / TOILET B138 REC THERAPY B136 RESIDENT ROOM / TOILET B137 RESIDENT ROOM / TOILET B137 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET B131 SOCIAL WORKER B112 NURSE STATION BCDR3 CORRIDOR B113 SOCIAL WORKER B114 CLINICAL NURSE LEADER B115 NURSE MANAGER BCDR5 CORRIDOR B111 GERIATRIC PSYCHIATRIST B115 STAFF BREAK B110 APRN B116 STAFF TOILET B117EXAM ROOM BCDR3 CORRIDOR B109 KITCHEN / PANTRY B118 COMPUTER LOUNGE	TITUS	DESV DESV DESV DESV DESV DESV DESV DESV	6 7 6 6 6 6 5 8 8 8 8 10 6 5 5 7 6 7 6 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	12X10 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X10 12X8 12X8 12X8 12X8 12X8 12X8 12X8 12X10 12X10 12X10 12X10 12X8 12X8 12X8 12X8 12X8 12X8 12X8 12X8	220 420 500 320 330 310 190 620 200 400 410 960 420 100 200 520 450 520 150 120 180 200 210 250 220 210 250 220 1100 210 100 200 660 100	210 120 120 100 100 100 100 210 200 200	66 126 150 96 99 93 63 186 60 120 125 288 126 60 156 135 156 45 40 55 60 65 75 65 60 65 330 65 45 45 45 40 200 45	55.0 55.0	91.7 99.2 100.4 90.0 90.0 90.0 90.0 92.5 95.8 93.5 90.0 94.7 99.2 90.0 93.5 97.8 99.5 97.8 99.5 97.8 99.5 98.9 101.2 95.1 93.5 92.0 90.0 93.5 92.0 93.5 93.5	2.6 6.1 7.4 3.6 3.8 3.5 2.6 8.2 2.5 4.6 4.7 12.4 6.1 2.0 2.5 7.5 6.3 7.5 2.1 2.0 2.4 2.5 2.6 2.9 2.6 2.9 2.6 2.5 2.6 13.2 2.6 2.1 2.1 2.5 8.5 2.1	140.0 140.0	125.3 122.1 130.6 131.3 129.9 127.5 120.0 127.9 127.5 128.5 119.9 125.3 120.0 127.9 121.7 124.8 121.7 129.6 130.3 128.4 127.9 127.4 127.4 127.4 127.4 127.9 127.4 118.6 127.4 129.6 129.6 127.9 119.3 129.6	0.4 0.8 0.8 0.9 0.7 0.4 0.8 0.4 0.7 0.8 1.3 0.8 1.0 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0	1 2 2 1 1 1 1 1 2 1 1 1 2 2 1 1 1 2 2 2 1	0.1 0.2 0.3 0.4 0.2 0.1 0.2 0.1 0.2 0.1 0.3 0.4 0.2 0.1 0.5 0.1 0.2 0.1 0.2 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	115/1 115/1	24 24 24 24 24 24 24 24 24 24 24 24 24 2	1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6
2-2 2-3 2-4 2-5 2-6 2-7 2-8 2-9 2-10 2-11 2-12 2-13 2-14 2-15 2-16 2-17 2-18 2-19 2-20 2-21 2-22 2-23 2-24 2-25 2-26 2-27 2-28 2-29 2-30 2-31 2-32 2-34 2-35 2-36 2-37	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	BCDR4 CORRIDOR-B B124 RESIDENT ROOM / TOILET B121 RESIDENT ROOM / TOILET B125 RESIDENT ROOM / TOILET B120 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET B126 RESIDENT ROOM / TOILET BCDR4 CORRIDOR-B B119 RESIDENT / TOILET (BARIATRIC) B28 HAC B134 SNOEZELEN B135 RESIDENT ROOM / TOILET B133 REC THERAPY B136 RESIDENT ROOM / TOILET B137 RESIDENT ROOM / TOILET B137 RESIDENT ROOM / TOILET B130 RESIDENT ROOM / TOILET B1400 MEDS B129 SHARED OFFICE / REPORT B102 NURSE STATION BCDR3 CORRIDOR B113 SOCIAL WORKER B114 CLINICAL NURSE LEADER B115 NURSE MANAGER BCDR5 CORRIDOR B111 GERIATRIC PSYCHIATRIST B115 STAFF BREAK B110 APRN B116 STAFF TOILET B117EXAM ROOM BCDR3 CORRIDOR B109 KITCHEN / PANTRY B118 COMPUTER LOUNGE	TITUS	DESV DESV DESV DESV DESV DESV DESV DESV	6 7 6 6 6 6 5 8 8 8 8 10 6 5 5 7 6 7 6 4 4 4 5 5 5 5 5 5 5 7 6 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	12X10 12X12 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X10 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X12 12X112 12X12 12X112 12X111 12X110 12X110 12X110 12X110 12X110 12X110 12X10 12X8 12X8 12X8 12X8	220 420 500 320 330 310 190 620 200 400 410 960 420 100 200 520 450 520 150 120 180 200 210 250 220 210 250 220 1100 210 100 200 660 100 1410	210 120 120 100 100 100 210 200 200 130 40 40 120 40 200 130 30 60 60 60 200 40 40 40 40 40 40 40 40 200 40 170 40 100 30 200 250 30 110	66 126 150 96 99 93 63 186 60 120 125 288 126 60 156 135 156 45 40 55 60 65 75 65 60 65 330 65 45 45 45 40 200 45	55.0 55.0	91.7 99.2 100.4 90.0 90.0 90.0 90.0 92.5 95.8 93.5 90.0 94.7 99.2 90.0 93.5 99.5 97.8 99.5 98.9 101.2 95.1 93.5 92.0 90.0 93.5 99.5 98.9 90.0 91.9 92.0 93.5	2.6 6.1 7.4 3.6 3.8 3.5 2.6 8.2 2.5 4.6 4.7 12.4 6.1 2.0 2.5 7.5 6.3 7.5 2.1 2.0 2.4 2.5 2.6 2.9 2.6 2.9 2.6 2.5 2.6 13.2 2.6 2.1 2.1 2.5 8.5 2.1 16.8	140.0 140.0	125.3 122.1 130.6 131.3 129.9 127.5 120.0 127.9 127.5 128.5 119.9 125.3 120.0 127.9 121.7 124.8 121.7 129.6 130.3 128.4 127.9 127.4 127.4 127.4 127.4 127.9 127.4 118.6 127.4 129.6 129.6 129.6 119.3 129.6 119.3	0.4 0.8 0.8 0.9 0.7 0.4 0.8 0.9 0.7 0.4 0.8 0.4 0.7 0.8 1.3 0.8 1.0 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0	1 2 2 1 1 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1	0.1 0.2 0.3 0.4 0.2 0.1 0.2 0.1 0.2 0.1 0.3 0.4 0.2 0.1 0.5 0.1 0.2 0.1 0.2 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	115/1 115/1	24 24 24 24 24 24 24 24 24 24 24 24 24 2	1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6 1-6

PUMP S																
MARK	LOCATION	SERVICE	MANUFACTURERS	MODEL	CONN.	TYPE	MOUNTING	FLOW	PRESS.	NPSHA	MIN. HP	RPM				NOTES
					DIAMETER				LOSS	(FT)			DISC.	STARTER	V/PH	
					IN			GPM	FTHD	, ,			TYPE	TYPE		
HHP-1	BASEMENT MECH RM	WING A/B HEATING HW	ARMSTRONG	DE 4360	3.0	INLINE	INLINE	140.0	40.0	14.3	3	1,700	VFD	VFD	208/3	1-6
HHP-2	BASEMENT MECH RM	WING A/B HEATING HW	ARMSTRONG	DE 4360	3.0	INLINE	INLINE	140.0	40.0	14.3	3	1,700	VFD	VFD	208/3	1-6

4 PROVIDE FACTORY-INSTALLED, PRESSURE INDEPÈNDENT, DDC CONTROL PACKAGE.

6 PROVIDE COIL PIPING COMPONENTS AND CONNECTIONS AS SHOWN IN DETAIL 9/165-M-501.

5 PROVIDE BOX WITH EITHER RIGHT HAND OR LEFT HAND CONFIGURATION AS SHOWN ON DRAWINGS.

1 PROVIDE WITH AIR SEPARATOR AND EXPANSION / COMPRESSION TANK. 2 SUPPORT PUMP FROM STRUCTURE WITH VERTICAL SUPPORTS INDEPENDENT FROM PIPING.

3 DISCONNECT SWITCH FURNISHED AND INSTALLED BY DIVISION 26 CONTRACTOR.

VARIABLE AIR VOLUME TERMINAL UNIT - HYDRONIC HEAT

4 VFD FURNISHED BY DIVISION 23 IN COMPLIANCE WITH SPECIFICATION SECTION 262911 MOTOR CONTROLLERS. SEE VFD SCHEDULE FOR BASIS OF DESIGN. 5 PUMP MOTOR SHALL BE NON-OVERLOADING THROUGHOUT THE FULL RANGE OF THE PUMP CURVE.

INLET SIZE SHOWN IS THE MINIMUM ALLOWABLE INLET SIZE. NO SMALLER SIZES SHALL BE ACCEPTED. PROVIDE DUCT TRANSITION FROM BRANCH TO INLET SIZE SHOWN WHERE BRANCH IS LARGER THAN VAV INLET SIZE.

PROVIDE FACTORY INSTALLED CONTROL POWER (CP) TRANSFORMER. COORDINATE PRIMARY POWER WITH DIVISION 26. COORDINATE CONTROLS WITH TEMPERATURE CONTROL CONTRACTOR.

7 PROVIDE DUCT TRANSITION FROM VAV OUTLET TO THE SCHEDULED OUTLET SIZE WHERE THE SCHEDULED OUTLET SIZE IS LARGER THAN THE VAV OUTLET CONNECTION SIZE.

6 NPSHA IS THE NET POSITIVE SUCTION HEAD AVAILABLE TO THE PUMP. PUMP AT DESIGN CONDITIONS SHALL HAVE NPSH LESS THAN SPECIFIED VALUE.

	<u>N EXHAUST I</u>					1	
MARK	LOCATION	SERVICE	MANUFACTURERS	MODEL	HOOD DIMENSIONS (IN.) (L x W x H)	EXHAUST AIR CFM	NOTES
RHD-1	B-109 KITCHEN	B-109 STOVE TOP	GREENHECK	GRRS	30"x20"x11"	500.00	1-4
NOTES:	GE HOOD WITH INTEGRA	ATED COMMERCIAL ST	 YLE FIRE SUPPRESSION SYS	TEM FOR RESIDENTIAL	GRADE APPLIANCES		

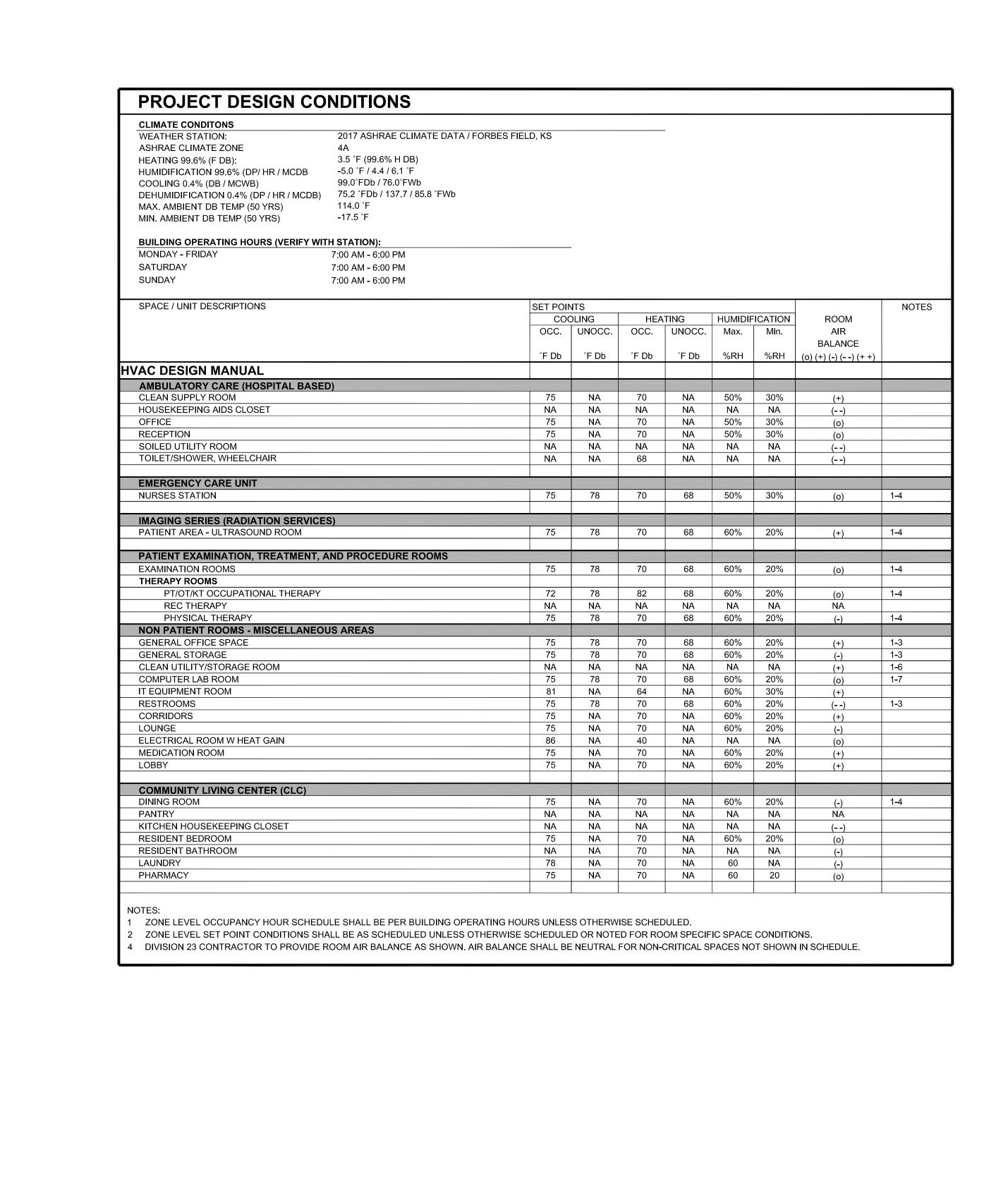
MITSUBISHI PUY-A24NHA7-BS R410A 2

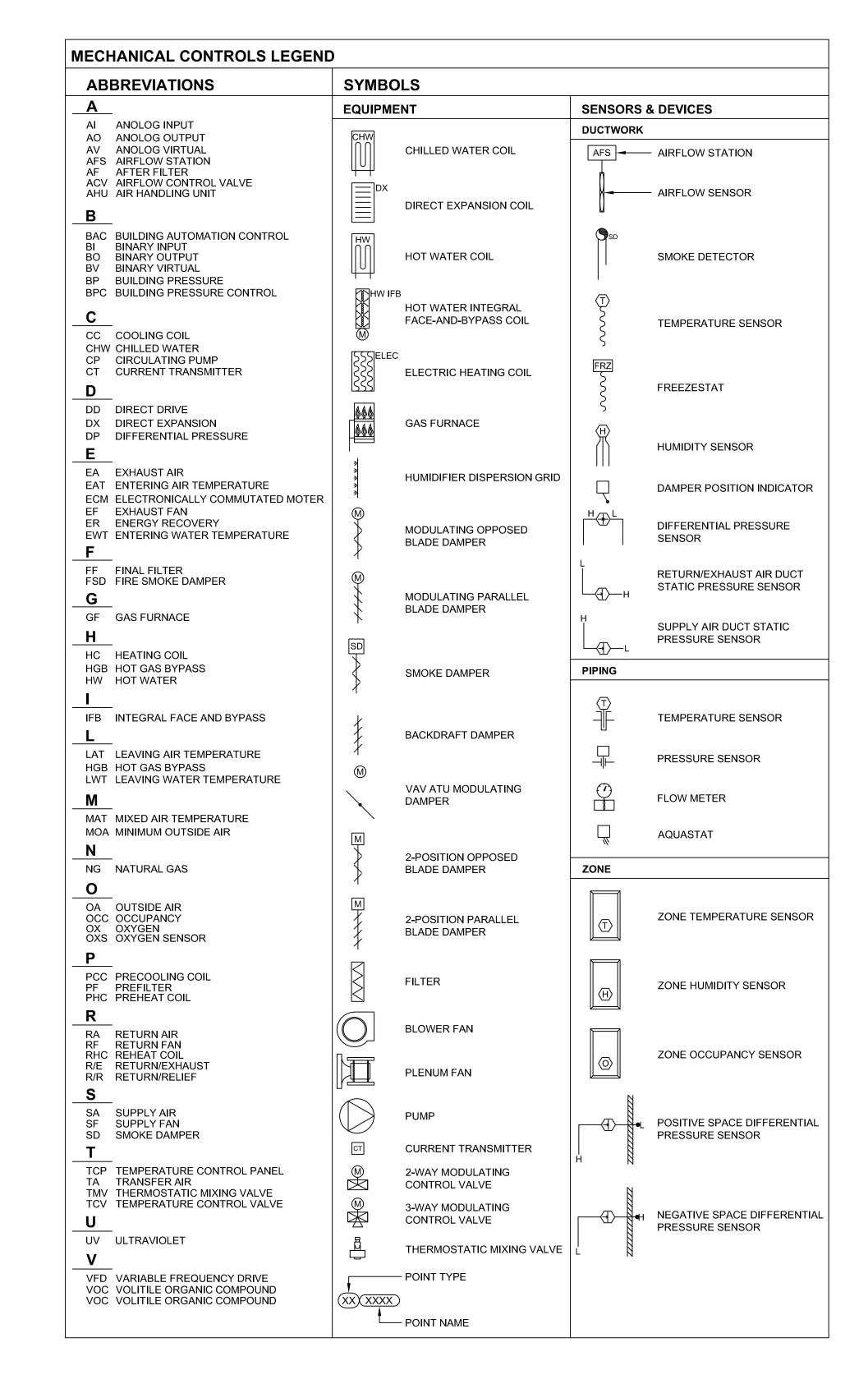
HEA	T EXCHANGI	ER SCHEDUL	E																		
MARK	LOCATION	SERVICE	MANUFACTURERS	MODEL	TYPE			TU	JBE SIDE							SHELL SIDE			DIMEN	ISIONS	NOTES
						FLUID	DESIGN	CAP.	EWT	LWT	MAX. WPD	MAX. NO.	FLUID	FLOW	CAP.	INLET PRESSURE	MAX. CONTROL	MIN. HEATING	DIA	L	
						TYPE	GPM	MBH	°F	°F	FT	PASSES	TYPE	LB/HR	MBH	PSI	VALVE P.D. (PSI)	SURFACE (SF)	IN	IN	
HX-1	BASEMENT MECH RM	WING A/B HEATING HW	CEMLINE	V8SEH830	V60CWB-2N	WATER	140.0	915.0	160.0	180.0	-	-	STEAM	915.00	915.00	10.0	5.00	Ī	-	-	1-3
HX-2	BASEMENT MECH RM	WING A/B HEATING HW	CEMLINE	V8SEH830	V60CWB-2N	WATER	140.0	915.0	160.0	180.0	-	-	STEAM	915.00	915.00	10.0	5.00	I	-	-	1-3

1 ELEVATION: 948 FEET ABOVE SEA LEVEL.

2 INLET PRESSURE AT THE CONTROL VALVE IS 15 PSIG 4 SUPPORT FROM THE FLOOR WITH ANGLE IRON FRAME. 5 CAPACITIES SHOWN REFLECT DESIGN FLOW RATE.

	CONSULTANT INFORMATION	ARCHITECT	Office of	MECHANICAL SCHEDULES II	PROJECT PHASE BID DOCUMENTS	PROJECT TITLE RENOVATE	A & B WING BUI	LDING 6	VA PROJECT NUMBER 589A5-19-116
	STRUCTURAL / MECHANICAL / ELECTRICAL / FIRE PROTECTION CIVIL ENGINEER PLUMBING / TECHNICAL ENGINEER ENGINEER	SIDUL STUDING EN SEGULATION OF THE SOME	Construction and Facilities			PROJECT LOCATION 2200 SW GA	GE BLVD		BUILDING NUMBER 6
	STAND STRUCTURAL ENGINEERING SPUR DESIGN POOLE FIRE PROTECTION, INC. 11827 W. 112TH STREET, SUITE 200 11020 KING STREET, SUITE 350 19910 W. 161ST STREET OVERLAND PARK, KS 66210 OVERLAND PARK, KS 66210 OLATH, KS 66062	DESIGN 22162	wanagement	APPROVED: PROJECT DIRECTOR	FULLY SPRINKLERED	TOPEKA, KS	66622		DRAWING NUMBER 6-M-602
Revision # Date	(913) 214-2169 (405) 842-6100 (913) 829-8650	T/10/201 312 SW 25th Street Oklahoma City, OK 73109 Spur-design.com KS ARCH REG. NO. A-1139, EXP. 12/31/2019 KS ENGR REG. NO. E-2586, EXP. 12/31/2019	U.S. Department of Veteran Affair	t es		07/10/19	JES	JAD	Dwg. 115 OF 160



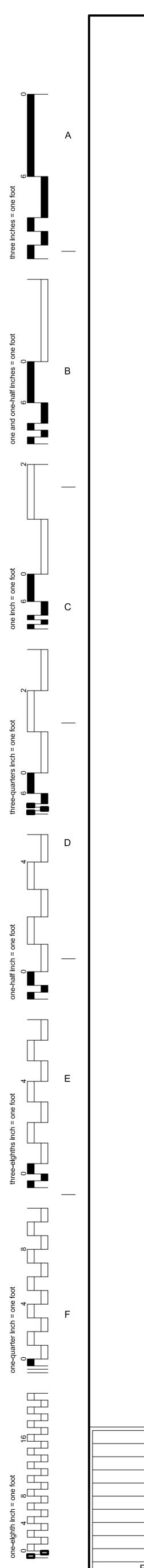


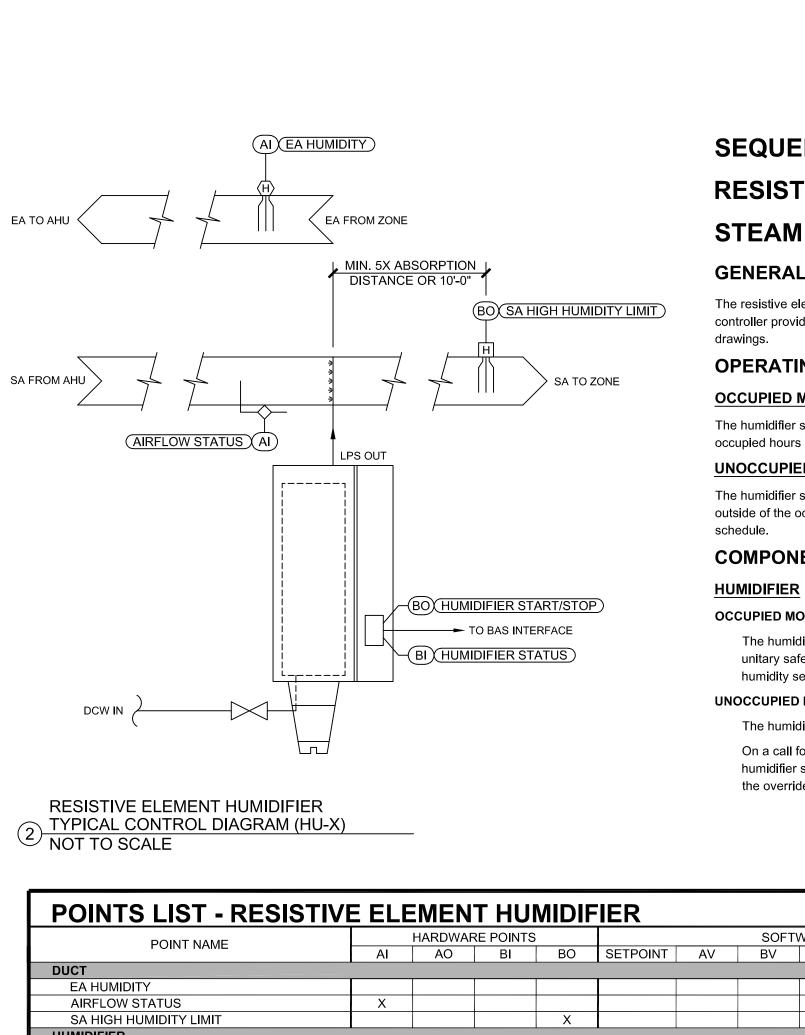
POINT IE	POINT DESCRIPTION	HAF	RDWA	RE PO	ТИІС			SOFTW	ARE PO	INTS		DISPLAY	DEFAULT	TRENDING	TRENDING	ALARM	NOTES
		AI	AO	ВІ	во	AV	BV	LOOP S	CHED.	TREND	ALARM	GRAPHIC	SETPOINT	INTERVAL	STORAGE	STATUS	
DVANCE	UTILITY METERING								,								
	ELECTRICITY	X										Х			Х		A,B
	STEAM	Х										Х			Х		A,B
	CONDENSATE	X										Х			Х		A,B
	DOMESTIC WATER FLOW	X										Х			Х		A,B
	HEATING WATER																A,B
	CHILLED WATER	X										Х			Х		A,B
	OUTSIDE AIR TEMPERATURE					Х						Х			Х		A,B
	OUTSIDE AIR RELATIVE HUMIDITY					Χ						Χ			Х		A,B
/EATHER	STATION																
BDP	BUILDING DIFFERENTIAL PRESSURE	Х										Χ	0.03 INWG	15 MIN.	Х	Х	
OAT	OUTSIDE AIR TEMPERATURE	X										Χ	-	15 MIN.	X		A,B
OAH	OUTSIDE AIR HUMIDITY	X										Χ	-	15 MIN.	X		A,B
OADP	OUTSIDE AIR DEWPOINT					Χ						Χ	-	15 MIN.	Х		A,B
LARM MC	NITORING																
	STEAM CONDENSATE PUMP - COMMON ALARM			Χ								Χ				Х	
OTES:																	
SEE SPE	ECIFICATION SECTION 251010 - ADVANCED UTILITY	METI	ERING	SYS	TEM												

		CONSULTAN	NT INFORMA	TION	ARCHITECT			MECHANICAL CONTROLS I	BID DOCUMENTS	PROJECT TITLE RENOVATE A	& B WING BU	JILDING 6	VA PROJECT NUMBER 589A5-19-116
			MECHANICAL / ELECTRICAL /	FIRE PROTECTION	SIJULI	STOPHICENSEO DE	Construction and Facilities			PROJECT LOCATION 2200 SW GAG	GE BLVD		BUILDING NUMBER 6
		STAND STRUCTURAL ENGINEERING 11827 W. 112TH STREET, SUITE 200		POOLE FIRE PROTECTION, INC. 19910 W. 161ST STREET	# DESIGN	Jalux Source		APPROVED: PROJECT DIRECTOR		TOPEKA, KS			DRAWING NUMBER 6-M-701
Revision #	Date	OVERLAND PARK, KS 66210 (913) 214-2169	(405) 842-6100	OLATH, KS 66062 (913) 829-8650	312 SW 25th Street 11020 King Street, Suite 350 Overland Park KS 66210 Spur-design.com KS ARCH REG. NO. A-1139, EXP. 12/31/2019 KS ENGR REG. NO. E-2586, EXP. 12/31/2019	7/10/2019	U.S. Department of Veteran Affairs		FULLY SPRINKLERED	DATE 07/10/19	CHECKED BY JES	DRAWN BY JAD	Dwg. 116 OF 160

____ one-dua one-eighth inch = one foot $\begin{pmatrix} 0 & 4 & 8 \\ 0 & 4 & 4 \\$

VA FORM 08-6231





SEQUENCE OF OPERATIONS RESISTIVE ELEMENT STEAM HUMIDIFIER (HU-X) **GENERAL DESCRIPTION**

The resistive element humidifier with scale collector tank and touch screen controller provide precise humidification control to the zones as shown on the

OPERATING MODES OCCUPIED MODE

The humidifier shall be in occupied mode when the associated space is within occupied hours as defined by the project design conditions schedule. **UNOCCUPIED MODE**

The humidifier shall be in unoccupied mode when the associated space is outside of the occupied hours as defined by the project design conditions

COMPONENT CONTROLS

OCCUPIED MODE:

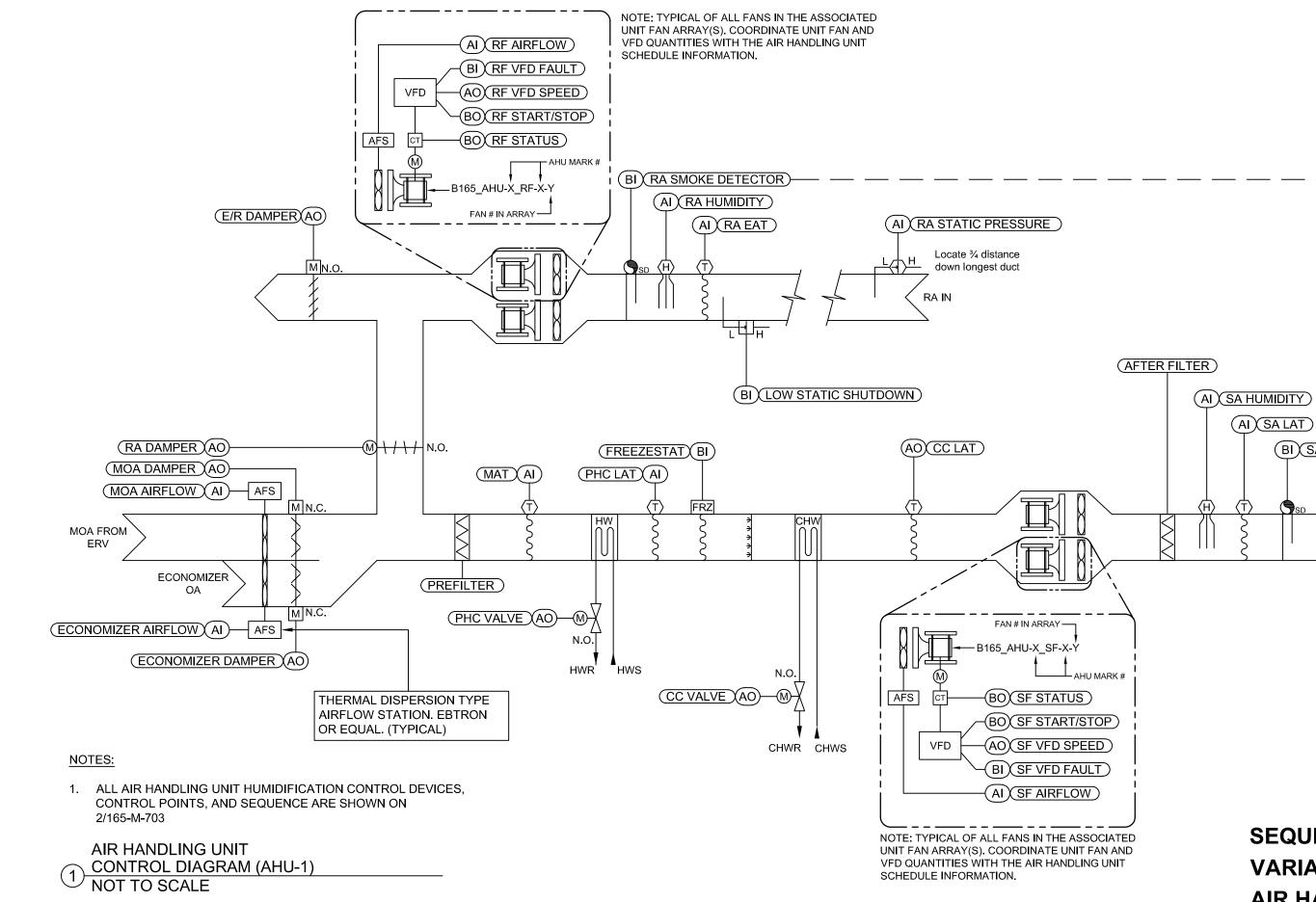
The humidifier shall modulate (subject to the unit manufacturer's standard unitary safeties and controls) to maintain the RA humidity setpoint or zone humidity setpoint (where applicable).

UNOCCUPIED MODE:

The humidifier shall be off. On a call for cooling/heating or override signal from the zone level, the

humidifier shall operate as if in occupied mode until the call is cleared or the override is removed.

POINT NAME		HARDWAF	RE POINTS	3			SOFT	WARE POI	NTS			SHOWN ON
POINT NAME	Al	AO	BI	ВО	SETPOINT	AV	BV	LOOP	SCHED	TREND	ALARM	GRAPHIC
DUCT												
EA HUMIDITY												Х
AIRFLOW STATUS	X											X
SA HIGH HUMIDITY LIMIT				Х								Х
HUMIDIFIER												
HUMIDIFIER STATUS			X							Х		Х
HUMIDIFIER START/STOP				X						Х		X
SETPOINTS	_											
ZONE HUMIDITY SETPOINT					NOTE 1	Χ						Χ
RA HUMIDITY SETPOINT					35%	Χ						Χ
SA HIGH HUMIDITY LIMIT SETPOINT					85%	Χ						Χ
ALARMS	DESCR	PTION									ALARM	
COMMON ALARMS	ALL API	PLICABLE	UNITARY A	ALARMS							Х	
HIGH ZONE HUMIDITY	IF THE 2	ZONE REL	ATIVE HUN	/IDITY IS	ABOVE 65% RH	1					Х	
LOW ZONE HUMIDITY	IF THE 2	ZONE REL	ATIVE HUN	/IIDITY IS	BELOW 25% RH	+					Х	



POINT NAME		HARDWAI	RE POINTS	5			SOFT	VARE POI	NTS			SHOWN ON
	Al	AO	BI	ВО	SETPOINT	AV	BV	LOOP	SCHED	TREND	ALARM	GRAPHIC
SUPPLY AIR		I	T		1							
BUILDING STATIC PRESSURE MAT	X									X		X X
PHC VALVE	^	X								X		X
PHC LAT	X									X		X
FREEZESTAT			X							X	Х	X
HUMIDIFIER		X								X		X
HUMIDIFIER ENABLE		_ ^		X						^		X
CC VALVE		X								X		X
CC VALVE CC LAT	Х									X		X
	X									X		X
SF AIRFLOW (TYP. 4)			X							X		X
SF STATUS (TYP. 4) SF START/STOP (TYP. 4)				X						X		X
			X								Х	X
SF VFD FAULT (TYP. 4) SF VFD SPEED (TYP. 4)		X								X	├ ^ ├	X
SF VFD SPEED (TYP. 4) SA LAT	Х									X		X
SA HUMIDITY	X									X		X
SA STATIC PRESSURE	X									X		X
HIGH STATIC PRESSURE	^		X							X	Х	X
SA SMOKE DETECTOR			X							X	X	X
RETURN AIR												
RA EAT										V		
RA HUMIDITY	X				1					X		X
RA AIRFLOW	X				+					X		X
RA STATIC PRESSURE	X				1					X		X
LOW STATIC PRESSURE	^		X		1					X	X	X
RA SMOKE DETECTOR			X		1					X	X	X
RA DAMPER		X			+					X	 ^ 	X
OUTSIDE AIR												^
MOA DAMPER		X			1					X		X
MOA AIRFLOW	X				1					X		X
ECONOMIZER DAMPER	^	X			1					X		X
ECONOMIZER DAMPER ECONOMIZER AIRFLOW	X				1					X		X
RETURN/RELIEF					1					^		^
RETURN/RELIEF RF STATUS			X		T T					X		X
RF VFD FAULT			X		1						Х	X
RF VFD SPEED		X			1					X	^	X
RF START/STOP				X						X		X
RF DAMPER				X	-					X		X
E/R DAMPER		X			1					X		X
SETPOINTS										^		^
EMERGENCY SHUTDOWN					N/A		Х			X	Х	
BUILDING DIFFERENTIAL PRESSURE SETPOINT					0.03 in w.g.	X				X	_ ^	X
ECONOMIZER MAT SETPOINT					60°F	X				X		
PHC LAT SETPOINT					NOTE 1	X				X		
					NOTE 1	X				X		
			1		NOTE 1	X				X		
CC LAT SETPOINT										X	 	
CC LAT SETPOINT RA STATIC PRESSURE SETPOINT						Y		1	1			
CC LAT SETPOINT RA STATIC PRESSURE SETPOINT RA HUMIDITY SETPOINT					NOTE 1	X						
CC LAT SETPOINT RA STATIC PRESSURE SETPOINT RA HUMIDITY SETPOINT SA LAT SETPOINT					NOTE 1 55°F	Х				Х		
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CC LAT SETPOINT RA STATIC PRESSURE SETPOINT RA HUMIDITY SETPOINT SA LAT SETPOINT SA STATIC PRESSURE SETPOINT SA HUMIDITY SETPOINT	DESCEI	PTION			NOTE 1 55°F	Х				Х	ΔΙΔΡΜ	
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CC LAT SETPOINT RA STATIC PRESSURE SETPOINT RA HUMIDITY SETPOINT SA LAT SETPOINT SA STATIC PRESSURE SETPOINT SA HUMIDITY SETPOINT ALARMS HIGH MIXED AIR TEMPERATURE LOW MIXED AIR TEMPERATURE HIGH RETURN AIR TEMPERATURE	IF THE N	MIXED AIR MIXED AIR RETURN A	TEMPERA	TURE IS L	NOTE 1 55°F NOTE 1 NOTE 1 SREATER THA ESS THAN 45°	X X X N 90°F (AD F (ADJ.)	,			X	X X X	
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SEQUENCE OF OPERATIONS VARIABLE AIR VOLUME

(BI) (HIGH STATIC SHUTDOWN)

FIRE ALARM PANEL

BY DIV. 28 CONTRACTOR

AIR HANDLING UNIT (AHU-X)

GENERAL DESCRIPTION

(BI) SA SMOKE DETECTOR -

The variable air volume (VAV) air handling unit, AHU-1, described by this sequence of operations consist(s) of a variable speed supply fan array, variable speed Return/Relief fan, hot water IFB preheating coil, and chilled water cooling coil, which provides ventilation and air-conditioning, for the conditioned space as shown on the drawings.

Locate ¾ distance

(AI) SA STATIC PRESSURE

OPERATING MODES The following operating modes describe the criteria for component control for the various modes of operation. If a mode of operation is not described in a component's control sequence, then the applicable mode of operation has no direct influence on the operation of that component and that

OCCUPIED MODE The AHU shall be in occupied mode per the project design conditions schedule shown on

UNOCCUPIED MODE

The AHU shall be in unoccupied mode for all periods not included in the occupied hours of operation. Overrides of the unoccupied schedule are defined at the zone level control. **ECONOMIZER MODE - OUTSIDE AIR TEMPERATURE ENABLED**

The unit shall be in economizer mode when:

The supply fan status is on; AND the AHU is not in freeze protection mode;

component shall revert to the last known mode of operation.

AND the outside air temperature is less than 65°F (adj.) AND the outside air temperature is less than the return air temperature.

FREEZE PROTECTION MODE

The unit shall be in freeze protection mode when the mixed air temperature sensor senses a mixed air temperature of 40 °F (adj.) or less. The unit and associated components shall be disabled if the mixed air temperature continues to fall below 36°F

The unit shall automatically reset when the mixed air temperature is above 43°F CONTROL SETPOINT RESETS

SUPPLY AIR TEMPERATURE RESET - TRIM AND RESPOND - COOLING

Supply Air Temperature Reset: When the zone temperature is within its setpoints, the supply air

temperature setpoint shall reset to 60°F.

SAFETIES, OVERRIDES AND INTERLOCKS SMOKE DETECTOR INTERLOCK

The unit shall be disabled via hard wired interlock at the fan start circuit on activation of a system

smoke detector. FIRE ALARM CONTROL PANEL INTERLOCK

The unit shall be disabled via hard wired interlock at the fan start circuit upon receipt of signal from the fire alarm control panel.

HIGH SUPPLY AIR STATIC PRESSURE INTERLOCK

The unit shall be disabled via hard wired interlock at the fan start circuit upon activation of duct high static pressure controller.

LOW RETURN AIR STATIC PRESSURE INTERLOCK

The unit shall be disabled via hard wired interlock at the fan start circuit upon activation of duct low static pressure controller.

SUPPLY FAN INTERLOCK

The Return/Relief Fan shall be interlocked to be OFF with the associated unit supply fan. SMOKE DAMPER INTERLOCK

Associated system smoke dampers shall be closed whenever the supply fan is OFF.

COMPONENT CONTROL LOOPS

SUPPLY FAN CONTROL- VFD

When the HOA switch is in hand position, the variable speed supply fan shall operate at a speed set manually by the operator at the user interface of the drive. When the HOA switch is in off position, the fan shall be off.

When the HOA switch is in auto position, the variable speed supply fan shall operate subject to the unit enable signal, and unit operating modes. OCCUPIED MODE:

At fan startup, the fan shall energize and slowly ramp to the initial minimum fan speed determined during system startup.

The controller shall measure the zone temperature and modulate the supply fan VFD speed to maintain the zone temperature setpoint. The minimum fan speed setting shall be coordinated with the minimum turndown of the unit's associated backup dx condensing units

The fan shall be OFF.

On a call for cooling/heating or override signal from the zone level, the fan shall operate as if in occupied mode until the call is cleared or the override is removed. FREEZE PROTECTION MODE:

The supply fan shall be OFF.

RETURN/RELIEF FAN - BLDG PRESSURE CONTROL

INSIDENOUTSIDE

BUILDING STATIC PRESSURE (AI

The Return/Relief Fan operates with a VFD subject to the building static pressure. NORMAL OPERATION MODE:

The return/relief fan VFD shall modulate to maintain the building static pressure setpoint. **ECONOMIZER MODE:**

The return/relief fan VFD shall modulate to maintain the building static pressure setpoint FREEZE PROTECTION MODE:

The return/relief fan shall be OFF. MIXED AIR DAMPERS WITH ECONOMIZER

The mixed air damper assembly consists of a minimum outside air (MOA) damper, a return air (RA) damper, and an economizer damper. OCCUPIED MODE:

The MOA Damper shall be open, the RA damper is open, and the Economizer damper is

MOA Active Control - The MOA damper shall modulate with the RA damper to satisfy the minimum outside airflow setpoint as indicated by the minimum OA airflow measuring station.

UNOCCUPIED MODE: The MOA damper and Economizer damper shall be fully closed and the RA damper shall be

On a call for cooling/heating or override signal, the dampers shall operate as if in occupied mode, except that the minimum outside air setpoint shall be 0 CFM. **ECONOMIZER MODE:**

The MOA damper, RA damper, and economizer damper shall modulate in opposing directions to maintain the mixed air temperature setpoint. FREEZE PROTECTION MODE:

The outside air dampers shall remain fully closed and the return air damper shall remain fully

RELIEF/EXHAUST AIR DAMPERS

The relief/exhaust air dampers shall operate with the unit relief/exhaust fan, subject to the the Outside Air Economizer airflow. OCCUPIED MODE:

The relief/exhaust air damper is enabled and operates subject to the building pressure controller to maintain the building differential pressure setpoint. When the return fan array is ON the relief/exhaust damper shall be open

When the return fan array is OFF the damper shall modulate as required to maintain the

building differential pressure setpoint. **UNOCCUPIED MODE:**

The relief/exhaust damper shall be enabled.

On a call for building relief/exhaust, the damper shall modulate per the occupied sequence.

ECONOMIZER MODE: The relief/exhaust air damper shall modulate subject to the building differential pressure

FREEZE PROTECTION MODE:

The relief/exhaust air damper shall be closed. FILTER MONITORING - HOURS

The unit filters shall be monitored for preventative maintenance and diagnostic purposes.

ALL MODES:

The controller shall monitor the fan runtime to provide maintenance reminder at 50% of filter elapsed time (1100 hours) and an alarm at 100% elapsed time (2200 hours).

PREHEAT COIL - HOT WATER VALVE - MODULATING OCCUPIED MODE:

The controller shall modulate the PHC valve to maintain the preheat coil leaving air temperature (PHC LAT) setpoint. **UNOCCUPIED MODE:**

The heating valve shall close.

On a call for cooling/heating or override signal from the zone level, the coil shall operate as if in occupied mode until the call is cleared or the override is removed. FREEZE PROTECTION MODE: The PHC valve shall be fully open.

COOLING COIL CHILLED WATER VALVE - MODULATING OCCUPIED MODE:

The cooling coil valve shall modulate to maintain the cooling coil leaving air temperature (CC LAT) setpoint.

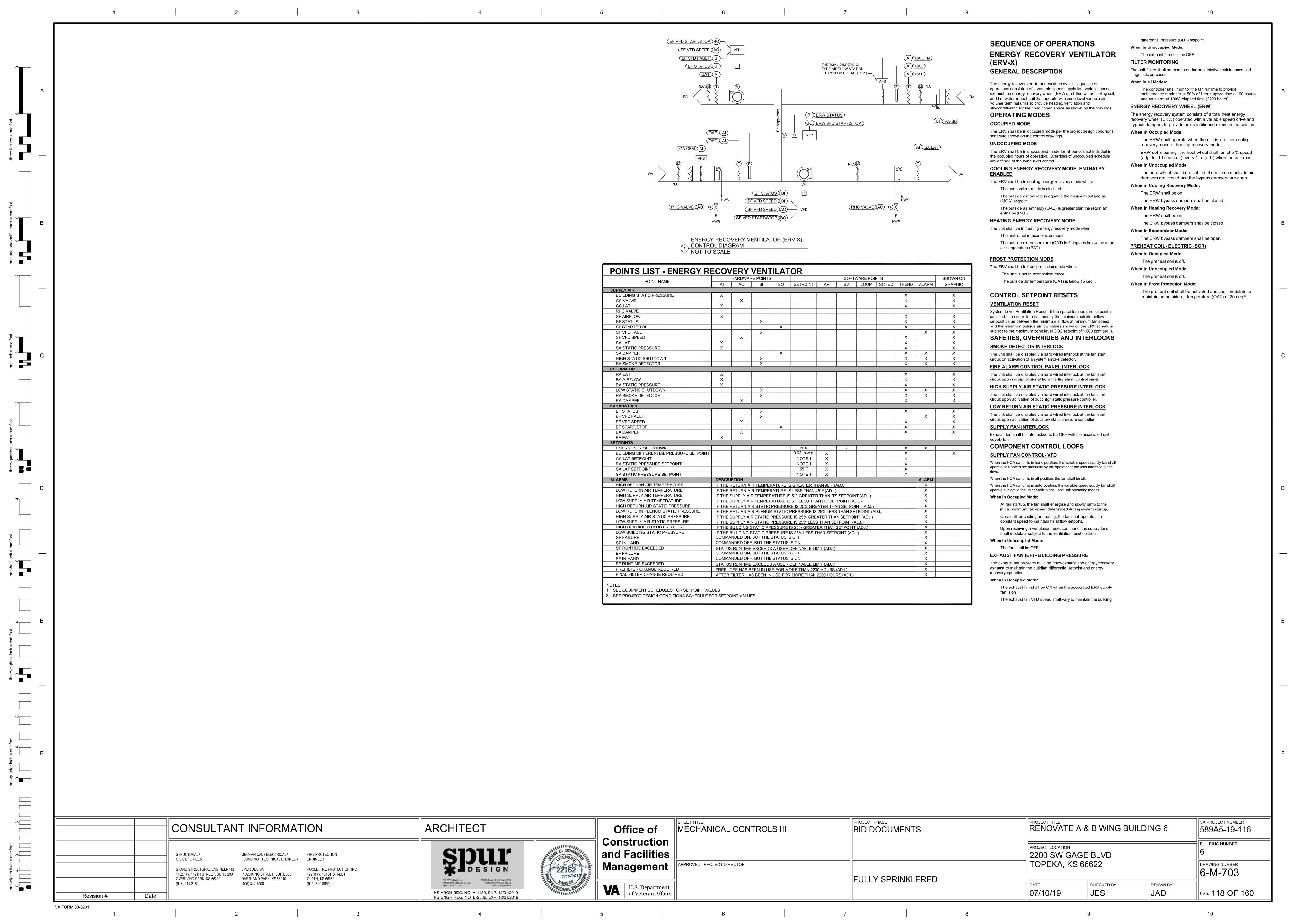
UNOCCUPIED MODE:

On a call for cooling/heating or override signal from the zone level, the coil shall operate as if in occupied mode until the call is cleared or the override is removed.

FREEZE PROTECTION MODE: The CC valve shall open fully.

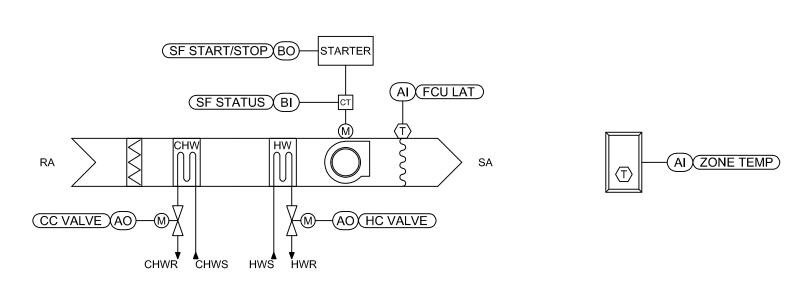
The chilled water plant freeze protection mode shall be enabled and the chilled water supply pumps shall be on.

	CONSULTANT INFORMATION	ARCHITECT	Office of MECHANICAL CON	TROLS II PROJECT PHASE BID DOCUMENTS	RENOVATE A & B WING BUILDING 6	589A5-19-116
	STRUCTURAL / MECHANICAL / ELECTRICAL / FIRE PROTECTION	STOTIT STORM E. SOM	Construction and Facilities		PROJECT LOCATION 2200 SW GAGE BLVD	BUILDING NUMBER 6
	CIVIL ENGINEER PLUMBING / TECHNICAL ENGINEER ENGINEER STAND STRUCTURAL ENGINEERING SPUR DESIGN POOLE FIRE PROTI 11827 W. 112TH STREET, SUITE 200 11020 KING STREET, SUITE 350 19910 W. 161ST STI OVERLAND PARK, KS 66210 OVERLAND PARK, KS 66210 OLATH, KS 66062	ECTION, INC. DESIGN 2216	Management APPROVED: PROJECT DIRECTOR	FULLY SPRINKLERED	TOPEKA, KS 66622	DRAWING NUMBER 6-M-702
Revision # Date	(913) 214-2169 (405) 842-6100 (913) 829-8650	### REET 312 SW 25th Street	VA U.S. Department of Veteran Affairs	FULLY SPRINKLERED	DATE CHECKED BY JAD	Dwg. 117 OF 160
VA FORM 08-6231						



VAV AIR TERMINAL UNIT (VAV-X) TYPICAL CONTROL DIAGRAM NOT TO SCALE

		HARDWA	RE POINTS	3			SOFTWAR	RE POINTS			SHOWN ON	
POINT NAME	Al	AO	BI	ВО	AV	BV	LOOP	SCHED	TREND	ALARM	GRAPHIC	NOTES
VAV ATU (VAV-X)												
ZONE DAMPER		X							Х		X	1
REHEAT COIL												•
RHC VALVE		Х							Х		Х	1
MISCELLANEOUS		, ,				_						
ZONE TEMP	Х								Х		Х	1
ZONE SETPOINT ADJUST	Х								Х		X	1
ZONE HUMIDITY	Х											1
VAV LAT	Х								Х		Х	1
AIRFLOW	Х								Х		Х	1
SETPOINTS	VALUES											
ZONE COOLING SETPOINT	SEE VAV	/ ATU SCH	EDULE		Х				Χ			1
ZONE HEATING SETPOINT	SEE VAV	/ ATU SCH	EDULE		Х				Χ			1
VAV LAT SETPOINT		/ ATU SCH			Х							1
PRIMARY AIRFLOW SETPOINT	SEE VAV	/ ATU SCH	EDULE		Х							1
MINIMUM AIRFLOW SETPOINT	SEE VAV	/ ATU SCH	EDULE		Х							1
ALARMS	DESCRI									ALARM		
HIGH LEAVING AIR TEMP				110 DEGRE						X		1
LOW LEAVING AIR TEMP				EGREES (A						X		1
HIGH ZONE TEMP				EATER TH						X		1
LOW ZONE TEMP				SS THAN IT			T BY 5 DEG	REES (ADJ	.)	X		1
HIGH ZONE HUMIDITY				R THAN ITS		Γ				X		1
LOW ZONE HUMIDITY	ZONE H	UMIDITY IS	LESS TH	AN ITS SET	POINT					X		1
Notes:												



KS ARCH REG. NO. A-1139, EXP. 12/31/2019

KS ENGR REG. NO. E-2586, EXP. 12/31/2019

FAN COIL UNIT (4) CONTROL DIAGRAM NOT TO SCALE

POINT NAME	H	HARDWAF	RE POIN	TS			SOFT	WARE PC	INTS			SHOWN ON		
1 OINT NAME	Al	AO	BI	ВО	SETPOINT	ΑV	BV	LOOP	SCHED	TREND	ALARM	GRAPHIC		NOTES
CU														
FAN LOW SPEED				X						Х		X	1	
FAN MEDIUM SPEED				X						Х		X	1	
FAN HIGH SPEED				X						Х		X	1	
FAN STATUS			X							X		X	1	
DISCHARGE AIR TEMPERATURE	Х									Х		X	1	
CC VALVE		X								Х		X	1	
HC VALVE		X								Х		X	1	
ZONE TEMPERATURE	X									Х		Χ	1	
SETPOINTS	-													
EMERGENCY SHUTDOWN					NA		X			X	X	X	1	
ZONE COOLING SETPOINT					NOTE 2	Χ				Х		Χ	1	
ZONE HEATING SETPOINT					NOTE 2	Χ				X		Χ	1	
ALARMS		RIPTION									ALARM			
FAN FAILURE	1				TATUS IS OFF						Х		1	
FAN IN HAND	COM	1MANDED	OFF, B	UT THE S	STATUS IS ON						Х		1	
FAN RUNTIME EXCEEDED	FAN	RUNTIMI	E HAS E	XCEEDEI	D A USER DEF	NABLE	LIMIT.				Х		1	
HIGH DISCHARGE AIR TEMPERATURE	IF TH	HE DISCH	IARGE A	IR TEMP	ERATURE IS G	REATE	R THAN 1	15°F (ADJ.)		X		1	
LOW DISCHARGE AIR TEMPERATURE	IF Th	TE DISCH	IARGE A	IR TEMP	ERATURE IS L	ESS TH	N 45°F (ADJ.)			Х		1	
HIGH ZONE TEMPERATURE	IF Th	IE ZONE	TEMPE	RATURE	IS GREATER T	HAN TH	E COOLI	NG SETPO	INT BY 5°F	(ADJ.)	Х		1	
LOW ZONE TEMPERATURE	IF Th	IE ZONE	TEMPE	RATURE	IS LESS THAN	THE HE	ATING SI	ETPOINT E	BY 5°F (AD	J.)	Х		1	

one-eighth inch = one foot

(913) 214-2169

Date

Revision #

VA FORM 08-6231

(405) 842-6100

VAV AIR TERMINAL UNITS

SEQUENCE OF OPERATIONS

GENERAL DESCRIPTION

The single duct variable air volume terminal unit with hot water reheat coil provides heating, cooling, and ventilation for the conditioned space as shown on the drawings. The unit shall operate subject to a digital display space temperature sensor, and a VAV box controller.

OPERATING MODES

OCCUPIED MODE

The variable air volume terminal unit and reheat coil shall be in occupied mode when the associated space is within occupied hours as defined by the project design conditions schedule.

UNOCCUPIED MODE

The variable air volume terminal unit and reheat coil shall be in unoccupied mode when the associated space is outside of occupied hours as defined by the project design conditions schedule.

COMPONENT CONTROLS

The VAV ATU zone damper and reheat coil shall operate to maintain the zone temperature setpoint. The occupant shall have the ability to adjust the zone temperature 3 degrees up and 2 degrees down from the setpoint defined by the project design conditions schedule.

ZONE DAMPER OCCUPIED MODE:

COOLING: The zone damper shall modulate between its scheduled minimum and primary airflow values to maintain the zone temperature setpoint as defined by the project design conditions schedule.

HEATING: zone damper shall modulate down to its scheduled minimum airflow. If more heat is required, the zone damper shall modulate to a user definable minimum heating airflow

UNOCCUPIED MODE:

The zone damper shall modulate down to its scheduled minimum airflow.

REHEAT COIL

OCCUPIED MODE:

temperature is within its setpoints.

HEATING: the reheat coil valve shall modulate to maintain the scheduled VAV ATU leaving air temperature until the zone

UNOCCUPIED MODE:

The reheat coil and reheat coil valve shall operate as if in occupied mode to maintain the unoccupied zone temperature heating setpoint.

and, on rising temperature, limit the heating as follows: As the discharge air temperature rises from 90°F to 120°F (adj.).

The controller shall limit the heating output from 100% to 0% (adj.)

The controller shall monitor the fan status.

Conditions shall be monitored as follows:

The unit shall shut down and generate an alarm upon receiving an emergency shutdown signal.

The occupant shall be able to adjust the zone temperature

setpoint adjustment to 3-degrees down and 3-degrees up.

heating and cooling setpoints at the zone sensor. Limit

SEQUENCE OF OPERATIONS

The fan coil unit with 3-speed fan motor and hot water heating coil provides heating and cooling for the conditioned

to a space temperature sensor with digital display.

space shown on the drawings. The unit shall operate subject

FAN COIL UNITS (FCU-X)

GENERAL DESCRIPTION

Run Conditions

Continuous operation

Zone Setpoint Adjust

Emergency Shutdown

The unit shall run continuously.

Smoke Detection

The unit shall shut down and generate an alarm upon receiving a smoke detector status.

The fan shall run anytime the unit is commanded to run, unless shutdown on safeties. The fan speeds shall automatically be indexed as follows:

Low speed shall run anytime the zone temperature is within setpoints Medium speed shall run anytime the zone temperature

is outside of setpoints High speed shall run anytime the zone temperature is outside of setpoints by a definable amount.

Heating Coil Valve

U.S. Department of Veteran Affairs

The controller shall measure the zone temperature and modulate the heating coil valve to maintain its heating

Heating - High Discharge Air Temperature Limit

The controller shall measure the discharge air temperature

Discharge Air Temperature

The controller shall monitor the discharge air temperature.

<u>Monitoring</u>

Fan Status

Discharge Air Temperature

Zone Temperature

Alarms shall be provided as follows:

amount (adj.)

 High Zone Temp: If the zone temperature is greater than the cooling setpoint by a user definable

amount (adj.).

 Low Zone Temp: If the zone temperature is less than the heating setpoint by a user definable

 High Discharge Air Temp: If the discharge air temperature is greater than 120°F (adj.).

Low Discharge Air Temp: If the discharge air

temperature is less than 40°F (adj.). Fan Failure: Commanded on, but the status is off.

• Fan in Hand: Commanded off, but the status is on. • Fan Runtime Exceeded: Fan status runtime

exceeds a user definable limit (adj.).

(BI) EA DAMPER STATUS BO EA DAMPER (EA DAMPER STATUS (BI)— (EF START/STOP)(BO)—

GENERAL EXHAUST FAN TYPICAL CONTROL DIAGRAM $\stackrel{f \cup}{}$ NOT TO SCALE

(BI) EA DAMPER STATUS

BO EA DAMPER

EA DAMPER STATUS (BI) CT

(EF VFD SPEED (AO) VFD

KITCHEN EXHAUST FAN

(2) TYPICAL CONTROL DIAGRAM

CHECKED BY

JES

07/10/19

DRAWN BY

Dwg. 119 OF 160

10

(EF START/STOP)(BO)—

(EF VFD FAULT (BI)—

 ${}^{\smile}$ NOT TO SCALE

(EF VFD SPEED (AO)-

(EF VFD FAULT (BI)-

POINTS LIST SCHEDULE - GENERAL EXHAUST FAN HARDWARE POINTS POINT NAME AI AO BI BO AV BV LOOP SCHED TREND ALARM EXHAUST FAN EF VFD SPEED EF STATUS EF START/STOP EF VFD FAULT **EXHAUST AIR DAMPER STATUS** EXHAUST AIR DAMPER EF VFD FAULT COMMANDED OPEN, BUT THE STATUS IS CLOSED EXHAUST AIR DAMPER FAILURE EXHAUST AIR DAMPER IN HAND COMMANDED CLOSED, BUT THE STATUS IS OPEN COMMANDED ON, BUT THE STATUS IS OFF EF FAILURE COMMANDED OFF, BUT THE STATUS IS ON EF IN HAND FAN RUNTIME EXCEEDS A USER DEFINABLE LIIMIT EF RUNTIME EXCEEDED

SEQUENCE OF OPERATIONS GENERAL EXHAUST FAN (EF

GENERAL DESCRIPTION

The exhaust fan is a direct drive upblast with an external VFD used to serve as general exhaust throughout the conditioned space as shown on the

drawings. **Run Conditions** Continuous Operation

The unit shall run continuously.

Control The exhaust fan will run integral with an external VFD. The VFD will be programmed to run the exhaust fan at a user defined constant speed in order to maintain

a balanced system.

Exhaust Air Damper: The exhaust air damper shall open anytime the unit runs and shall close anytime the unit stops. The exhaust air damper shall close 30 sec (adj.) after the

fan stops.

Damper Status: The fan shall be enabled after the damper status has proven operable.

The controller shall monitor the fan status.

Alarms shall be provided as follows:

Exhaust fan VFD Fault.

Damper Failure: Commanded open, but the status is closed.

 Damper in Hand: Commanded closed, but the status is open.

• Fan Failure: Commanded on, but the status is off. • Fan in Hand: Commanded off, but the status is

exceeds a user definable limit (adj.)

• Fan Runtime Exceeded: Fan status runtime

SEQUENCE OF OPERATIONS KITCHEN EXHAUST FAN (EF 2-1)

GENERAL DESCRIPTION

The exhaust fan is a direct drive upblast with an external VFD used to serve as kitchen exhaust as shown on the drawings.

Run Conditions The unit shall run continuously when called by the

kitchen exhaust hood.

The exhaust fan will run integral with an external VFD. The VFD will be programmed to run the exhaust fan

when it is called to run by the kitchen exhaust fan.

fan stops.

Exhaust Air Damper: The exhaust air damper shall open anytime the unit runs and shall close anytime the unit stops. The exhaust air damper shall close 30 sec (adj.) after the

Damper Status: The fan shall be enabled after the damper status has proven operable.

<u>Fan Status</u>

The controller shall monitor the fan status.

Alarms shall be provided as follows:

Exhaust fan VFD Fault.

Damper Failure: Commanded open, but the status is closed.

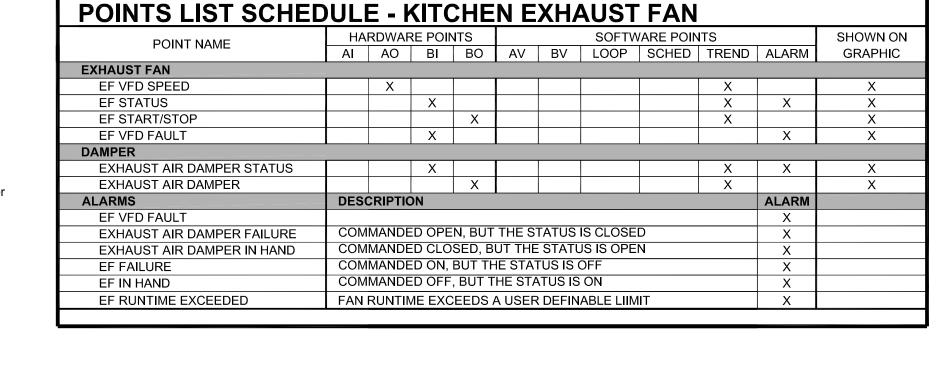
Damper in Hand: Commanded closed, but the

status is open • Fan Failure: Commanded on, but the status is off.

Fan in Hand: Commanded off, but the status is

 Fan Runtime Exceeded: Fan status runtime exceeds a user definable limit (adj.)

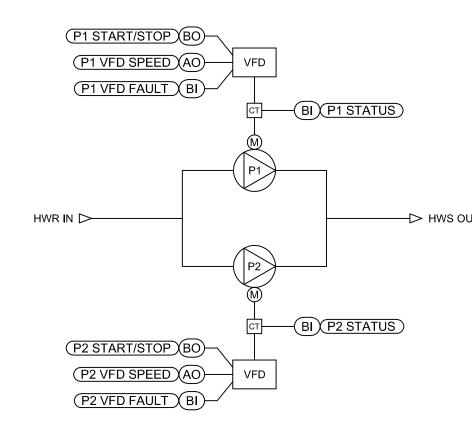
SITZONE TEMPERATORE IN THE ZONE TEMPERATORE IS GREATER THAN THE COOLING SETFORM BY ST (ADS.)	setpoint.
W ZONE TEMPERATURE IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY 5°F (ADJ.) X 1	
COIL UNIT FURNISHED WITH FACTORY INSTALLED CONTROLS. COORDINATE CONTROLLER WITH FCU MAKE WITH FCU MANUFACTURER. PROJECT DESIGN CONDITIONS SCHEDULE	Heating shall be enabled whenever the zone temperature is below its heating set point, AND the fan is on. The heating coil valve shall open whenever the freezestat (if present) is on.



PROJECT PHASE VA PROJECT NUMBER ARCHITECT CONSULTANT INFORMATION RENOVATE A & B WING BUILDING 6 MECHANICAL CONTROLS IV Office of BID DOCUMENTS 589A5-19-116 Construction **BUILDING NUMBER** PROJECT LOCATION SIDULT and Facilities 2200 SW GAGE BLVD STRUCTURAL / MECHANICAL / ELECTRICAL / FIRE PROTECTION CIVIL ENGINEER PLUMBING / TECHNICAL ENGINEER ENGINEER TOPEKA, KS 66622 APPROVED: PROJECT DIRECTOR Management DRAWING NUMBER STAND STRUCTURAL ENGINEERING SPUR DESIGN POOLE FIRE PROTECTION, INC. 6-M-704 11827 W. 112TH STREET, SUITE 200 11020 KING STREET, SUITE 350 19910 W. 161ST STREET FULLY SPRINKLERED OVERLAND PARK, KS 66210 OLATH, KS 66062 OVERLAND PARK, KS 66210 11020 King Street, Suite 350 Overland Park, KS 66210 spur-design.com (913) 829-8650

HEATING HOT WATER HEAT EXCHANGER TYPICAL CONTROL DIAGRAM NOT TO SCALE

POINT NAME		HARDWAI	RE POINTS	3		•	SOFT	WARE POI	NTS			SHOWN O
POINT NAME	Al	AO	BI	ВО	SETPOINT	AV	BV	LOOP	SCHED	TREND	ALARM	GRAPHIC
STEAM SIDE												
STEAM VALVE 1/3		X										Х
STEAM VALVE 2/3		X										Х
WATER SIDE												
HWS TEMPERATURE	Х									Х	Х	Х
HWR TEMPERATURE	Х									Х		X
SETPOINTS												
OUTSIDE AIR TEMPERATURE					SEE SEQ.	Х						Х
HWS TEMPERATURE SETPOINT					180°F	Χ						Х
HWR TEMPERATURE SETPOINT					160°F	Χ						Х
ALARMS	DESCR	IPTION									ALARM	
HIGH HWS TEMPERATURE	IF THE HWS TEMPERATURE IS GREATER THAN 200 °F (ADJ.)											
LOW HWS TEMPERATURE	IF THE	HWS TEME	PERATURE	IS LESS T	HAN 160 °F (A	.DJ.)					Х	



RECIRCULATING PUMP (HHP-X) TYPICAL CONTROL DIAGRAM NOT TO SCALE

Point Name		Hardwa	re Points					Software	Points		
	Al	AO	BI	во	AV	BV	Loop	Sched	Trend	Alarm	Show On Graphic
PRIMARY LOOP											
LOOP DIFFERENTIAL PRESSURE	Х								Х		
LEAD PUMP VFD SPEED		Х							Χ		X
LEAD PUMP STATUS			Х								X
LEAD PUMP VFD FAULT			Х							Х	X
LEAD PUMP VFD START/STOP				Х							X
STANDBY PUMP VFD SPEED		Х							Х		X
STANDBY PUMP STATUS			Х								X
STANDBY PUMP VFD FAULT			Х							Х	X
STANDBY PUMP VFD START/STOP				Х							X
SETPOINTS											
LOOP DIFFERENTIAL PRESSURE					Х						
ALARMS											
LEAD PUMP											
FAILURE										Х	
RUNNING IN HAND										Х	
RUNTIME EXCEEDED										Х	
STANDBY PUMP											
FAILURE										Х	
RUNNING IN HAND										Х	
RUNTIME EXCEEDED										Х	
HIGH LOOP DIFFERENTIAL PRESSURE										Х	
LOW LOOP DIFFERENTIAL PRESSURE										Х	

SEQUENCE OF OPERATIONS STEAM TO HOT WATER HEAT **EXCHANGER (HX-X)**

GENERAL DESCRIPTION

The steam to hot water shell and tube heat exchanger is used to heat water for the heating hot water system and its components as shown

Run Conditions

on the drawings.

The heat exchanger system shall be enabled to run whenever a definable number of hot water coils need heating and outside air temperature is less than 65°F (adj.). To prevent short cycling, the heat exchanger shall run for and be off for minimum adjustable times (both user definable). The heat exchanger system shall also run for freeze protection whenever outside air temperature is less than 38°F (adj.) Hot Water Supply Temperature Setpoint

The hot water supply temperature setpoint shall be a fixed setpoint of

<u>Heat Exchanger 1/3 - 2/3 Steam Valves - Hot Water Control</u>

modulate the two steam valves in sequence to maintain its setpoint. The steam valves shall be enabled whenever the heat exchanger is called to run AND hot water supply temperature is below its setpoint. The steam valves shall open to 100% (adj.) whenever the heat exchanger is in freeze protection due to low outside air temperature. The steam valves shall close whenever the hot water supply temperature rises from 180°F to 200°F.

The controller shall measure the hot water supply temperature and

Alarms shall be provided as follows:

- High HWS Temperature: If the HWS temperature is greater than
- High HWS Temperature: If the HWS temperature is less than

SEQUENCE OF OPERATIONS HEATING HOT WATER PUMPS

General Description

The inline pumps will operate as lead/standby to provide heating hot water to the AHU preheat coils and VAV reheat coils as shown on the drawings. 1 primary pump(s) will operate as lead, while the remaining pump will operate as standby and is to be activated upon shutdown or failure of the primary pump.

MODES OF OPERATION

NORMAL OPERATING MODE:

The pumps shall be in normal operating mode at all times unless overridden by the other modes outlined in this sequence. STANDBY MODE:

Backup mode shall be activated upon failure of the lead pump. Backup mode shall be disabled by manual reset and the system will reset to normal operation. **COMPONENT CONTROLS**

LEAD PUMP

NORMAL OPERATING MODE: The controller shall modulate the pump to maintain the differential pressure setpoint as determined by final test and balance. The VFDs minimum speed shall not drop below

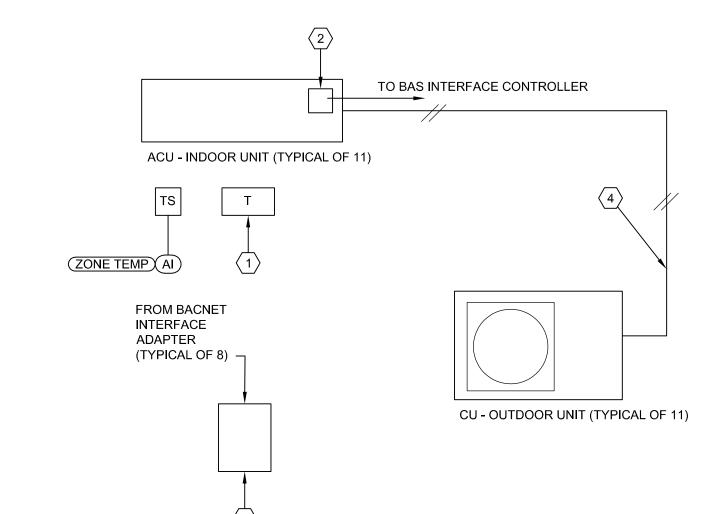
20%. STANDBY MODE:

The pump shall be off. STANDBY PUMP

NORMAL OPERATING MODE:

The pump shall be off. STANDBY MODE:

The controller shall modulate the pump to maintain the differential pressure setpoint as determined by final test and balance. The VFDs minimum speed shall not drop below



A NOTES:

- 1. WALL MOUNTED WIRELESS THERMOSTAT PROVIDED WITH UNIT.
- 2. BACNET INTERFACE ADAPTER PROVIDE WITH FAN COIL UNIT.
- 3. BAS CONTROLLER INTERFACE TO OPERATOR'S WORK STATION PROVIDED BY TEMP. CONTROL CONTRACTOR (TCC)
- 4. VRF FAN COIL CONTROL WIRING (PROVIDED WITH UNIT INSTALL BY MECHANICAL CONTRACTOR (MC)

VRF SPLIT SYSTEM HEAT PUMP 1 TYPICAL CONTROL DIAGRAM NOT TO SCALE

POINT NAME	Н	ARDWA	RE POIN	TS			SOFT	WARE PO	INTS			SHOWN ON	
FOINT NAME	Al	AO	BI	ВО	SETPOINT	AV	BV	LOOP	SCHED	TREND	ALARM	GRAPHIC	NOTES
ACU	_												
FAN SLOW SPEED				X						Χ		Χ	1,5
FAN LOW SPEED				X						Χ		Χ	1,5
FAN MEDIUM SPEED				X						Х		X	1,5
FAN HIGH SPEED				X						Х		Χ	1,5
FAN STATUS			Х							Х		X	1,5
DISCHARGE AIR TEMPERATURE	Х									Х		X	1
ZONE TEMPERATURE	Х									Х		X	1,3
SMOKE DETECTOR			Х							Х	Х	X	1,5
COMPRESSOR													
COMPRESSOR STAGE 1				X						Х		X	1,5
REVERSING VALVE				Х						Х		Х	1,5
REMOTE START/STOP				X						Х		X	1,3
BAS INTERFACE COMM LINK													4
SETPOINTS													
EMERGENCY SHUTDOWN					NA		Х			Х	Х		1
ZONE COOLING SETPOINT					NOTE 2	Х				Х		X	1,5
ZONE HEATING SETPOINT					NOTE 2	Х				Х		X	1,5
ALARMS	DESCRI	PTION									ALARM		
FAN FAILURE	COM	MANDE	ON, BU	T THE S	TATUS IS OFF.						Х		1,5
FAN IN HAND	COM	MANDED	OFF, B	UT THE S	STATUS IS ON.						Х		1
FAN RUNTIME EXCEEDED	FAN	RUNTIM	HAS EX	KCEEDE	D A USER DEF	INABLE L	IMIT.				Х		1,5
COMPRESSOR RUNTIME EXCEEDED	COM	PRESSC	R RUNT	IME HAS	EXCEEDED A	USER DI	EFINABL	E LIMIT.			Х		1,5
HIGH DISCHARGE AIR TEMPERATURE	IF TH	IE DISCH	ARGE A	IR TEMP	ERATURE IS G	REATER	THAN 1	15°F (ADJ.).		Х		1
LOW DISCHARGE AIR TEMPERATURE	IF TH	IE DISCH	ARGE A	IR TEMP	ERATURE IS L	ESS THA	N 45°F (<i>A</i>	NDJ.).			Х		1
HIGH ZONE TEMPERATURE	IF TH	IE ZONE	TEMPER	RATURE	IS GREATER T	HAN THE	E COOLIN	IG SETPO	INT BY 5°F	(ADJ.).	Х		1,5
LOW ZONE TEMPERATURE	IF TH	IE ZONE	TEMPER	RATURE	IS LESS THAN	THE HEA	ATING SE	TPOINT B	Y 5°F (AD.	l.).	Х		1,5
FILTER CHANGE REQUIRED	FILT	ER USE H	AS EXC	EEDED	A USER DEFINA	ABLE LIM	1IT.		,	•	Х		1,5

- 1 ACU AND CONDENSING UNIT FURNISHED WITH FACTORY INSTALLED CONTROLS. COORDINATE CONTROLLER WITH ACU AND CONDENSING UNIT MANUFACTURER.
- 2 SEE PROJECT DESIGN CONDITIONS SCHEDULE.
- 3 TCC FIELD INSTALLED DEVICE. SEE PLANS FOR LOCATION. 4 BACNET BTL INTERFACE COMMUNICATION LINK PROVIDED WITH EQUIPMENT. COORDINATE REQUIREMENTS WITH SECTION 230923 AND TEMPERATURE CONTROL CONTRACTOR. 5 MAPPED CONTROL AND MONITORING THROUGH BACNET COMMUNICATION LINK TO BUILDING MANAGEMENT SYSTEM.

SEQUENCE OF OPERATIONS

VRF SPLIT SYSTEM FAN COIL UNITS

GENERAL DESCRIPTION

The variable refrigerant flow (VRF) split system heat pump consists of an indoor fan coil unit (ACU) and outdoor condensing unit (CU) that provides heating, cooling and ventilation for the conditioned space as shown on the drawings. The outdoor unit is dedicated to an indoor fan coil unit providing independent temperature control for the space served.

RUN CONDITIONS

Continuous operation.

HEATING MODE

The unit shall be in occupied mode per the project design conditions schedule.

Remote Shutdown: The unit shall shut down and

generate an alarm upon receiving a remote shutdown signal indicating the unit has been taken offline.

A call for heat from the zone level establishes a call for heat. Initial setpoints are as scheduled in the points list unless otherwise shown on the Project Design Conditions Schedule on the

drawings. **COOLING MODE** A call for cooling from the zone level establishes a call for cooling. Initial setpoints are as scheduled

ZONE LEVEL OCCUPANCY OVERRIDE

in the points list unless otherwise shown on the

ZONE LEVEL SETPOINT OVERRIDE

project design conditions schedule.

MONITORING, MANAGEMENT and ALARMS

The VRF outdoor units (CU), indoor units (CU) are furnished with integrated factory digital controls (DDC) system with an internet based monitoring and management software and building automation system (BAS) interface protocol device based on BACnet ETL providing remote monitoring from a third-party BAS control system. The VRF system shall be controlled, scheduled and monitored through the factory integrated DDC system. Equipment and control devices not furnished with the VRF system shall be controlled, scheduled and monitored through the third-party BAS system in compliance with the specifications and shown on in the drawings.

A common alarm will be graphically displayed at the BAS system work station. **OUTDOOR CONDENSING UNIT (CU-X)**

The condensing unit shall operate subject to the integrated factory digital controls (DDC) system.

BAS INTERFACE MONITORING

INDOOR UNIT (ACU-X) FAN - The fan switch shall be set to auto with the fan speed shall be auto or as note in the equipment schedule.

FILTER MONITORING - The controller shall monitor the fan runtime to provide maintenance reminder at 50% of filter elapsed time (1100 hours) and an alarm at 100% elapsed time (2200

SPACE TEMPERATURE MONITORING

GENERAL DESCRIPTION

The building automation system shall monitor the following spaces with a space temperature sensor with adjustable alarm settings for high limit and low limit temperature settings. The alarm shall be annunciated at the operator's work station with graphical interface.

PROJECT PHASE ARCHITECT CONSULTANT INFORMATION RENOVATE A & B WING BUILDING 6 MECHANICAL CONTROLS V Office of BID DOCUMENTS Construction PROJECT LOCATION SIDULT and Facilities 2200 SW GAGE BLVD STRUCTURAL / MECHANICAL / ELECTRICAL / FIRE PROTECTION CIVIL ENGINEER PLUMBING / TECHNICAL ENGINEER ENGINEER TOPEKA, KS 66622 APPROVED: PROJECT DIRECTOR Management STAND STRUCTURAL ENGINEERING SPUR DESIGN POOLE FIRE PROTECTION, INC. 11827 W. 112TH STREET, SUITE 200 11020 KING STREET, SUITE 350 19910 W. 161ST STREET FULLY SPRINKLERED OVERLAND PARK, KS 66210 OLATH, KS 66062 OVERLAND PARK, KS 66210 11020 King Street, Suite 350 Overland Park, KS 66210 spur-design.com (913) 829-8650 (405) 842-6100 CHECKED BY U.S. Department of Veteran Affairs DRAWN BY JES 07/10/19 KS ARCH REG. NO. A-1139, EXP. 12/31/2019 Date Revision # KS ENGR REG. NO. E-2586, EXP. 12/31/2019

VA PROJECT NUMBER

BUILDING NUMBER

DRAWING NUMBER

6-M-705

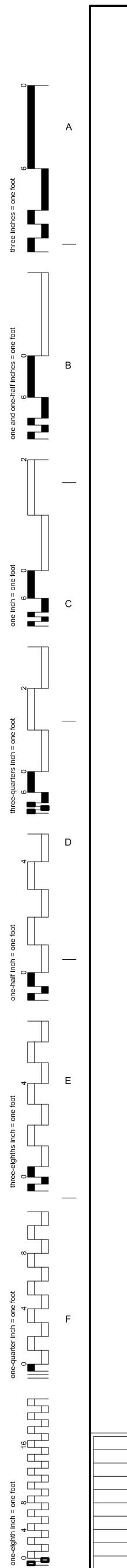
10

Dwg. 120 OF 160

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one-eighth inch = one foot $\begin{array}{c|c}
0 & 4 & 8 \\
\hline
\end{array}$

VA FORM 08-6231



SEQUENCE OF OPERATIONS HOT/COLD WATER RECIRCULATION PUMPS (RP-X)

General Description

The inline duplex recirculating pumps are used to recirculate the associated hot or cold water back to the domestic steam-water heater and the service entrance as shown on the drawings.

the standby pump shall run.

Run Conditions The hot/cold water recirculation pumps shall operate in a lead/standby manner, in which the lead pump shall run first. Upon failure of the lead pump,

Pumps shall alternate lead/standby designation automatically through a software switch if the user adjustable pump runtime is exceeded.

Alarms shall be provided as follows:

- Hot Water Recirculation Pump 1:
- Failure: Commanded on, but the status is off.
- O Running in Hand: Commanded off, but the status is on. O Runtime Exceeded: Status runtime exceeds a user definable limit. O High/Low Flow Rate: If the flow rate exceeds a user definable limit.

Hot Water Recirculation Pump 2:

- Failure: Commanded on, but the status is off.
- O Running in Hand: Commanded off, but the status is on. O Runtime Exceeded: Status runtime exceeds a user definable limit. High/Low Flow Rate: If the flow rate exceeds a user definable limit.
- Hot Water Recirculation Pumps: ○ Low HWR Temperature: If the HWR temperature is less than 124°F.
- Cold Water Recirculation Pump 1:
- Failure: Commanded on, but the status is off. O Running in Hand: Commanded off, but the status is on.
- O Runtime Exceeded: Status runtime exceeds a user definable limit.
- O High/Low Flow Rate: If the flow rate exceeds a user definable limit. Cold Water Pump Recirculation 2:
- Failure: Commanded on, but the status is off. O Running in Hand: Commanded off, but the status is on.
- O Runtime Exceeded: Status runtime exceeds a user definable limit. O High/Low Flow Rate: If the flow rate exceeds a user definable limit.
- Cold Water Recirculation Pumps: O High CWR Temperature: If the CWR temperature is greater than

POINTS LIST SCHE			RE POINTS				SOFTWAI	RE POINTS			SHOWN ON
POINT NAME	Al	AO	BI	ВО	AV	BV	LOOP	SCHED	TREND	ALARM	GRAPHIC
PUMPS		-	-			_					
PUMP 1 STATUS			X						Χ	Х	Х
PUMP 2 STATUS			Х						Χ	Х	Х
PUMP 1 START/STOP				Х					Χ		X
PUMP 2 START/STOP				Х					Χ		Χ
PUMP 1 FLOW RATE			Х						Χ	X	
PUMP 2 FLOW RATE			X						Χ	X	
PUMP 1 FLOW RATE	Х								Χ	X	Χ
PUMP 2 FLOW RATE	Х								Χ	X	Χ
HWR/CWR TEMPERATURE	Х								Χ	X	Χ
ALARMS	DESCRI									ALARM	
PUMP 1 FAILURE				STATUS IS						Х	
PUMP 1 IN HAND	СОММА	NDED OFF	F, BUT THE	STATUS IS	S ON					X	
PUMP 1 RUNTIME EXCEEDED	STATUS	RUNTIME	EXCEEDS	A USER D	EFINABLE	LIMIT				X	
PUMP 1 HIGH/LOW FLOW RATE				S A USER I		LIMT				X	
PUMP 2 FAILURE	COMMANDED ON, BUT THE STATUS IS OFF X								X		
PUMP 2 IN HAND	СОММА	NDED OF	F, BUT THE	STATUS IS	SON					Х	
PUMP 2 RUNTIME EXCEEDED	STATUS	RUNTIME	EXCEEDS	A USER D	EFINABLE	LIMIT				Х	
PUMP 2 HIGH/LOW FLOW RATE	IF THE F	LOW RAT	E EXCEED	S A USER I	DEFINABLE	LIMT				Х	
LOW HWR / CWR TEMPERATURE	IF THE H	HWR / CWF	R TEMPER	ATURE IS L	ESS / GRE	ATER THA	N 124°F / 67	7°F		Х	

Starter BO PUMP 1 START/STOP

BI PUMP 1 STATUS

(HWR/CWR TEMP)(AI)

HWR IN ▷───

RECIRCULATION PUMP (RP-X)

2 TYPICAL CONTROL DIAGRAM NOT TO SCALE

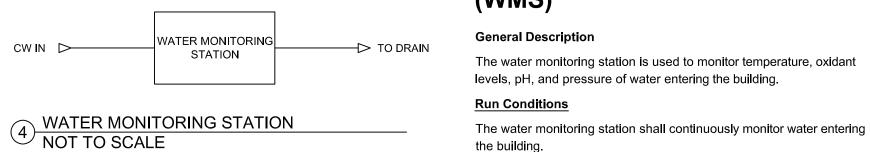
AI PUMP 1 FLOW RATE

(AI) PUMP 1 FLOW RATE)

BI PUMP 2 STATUS

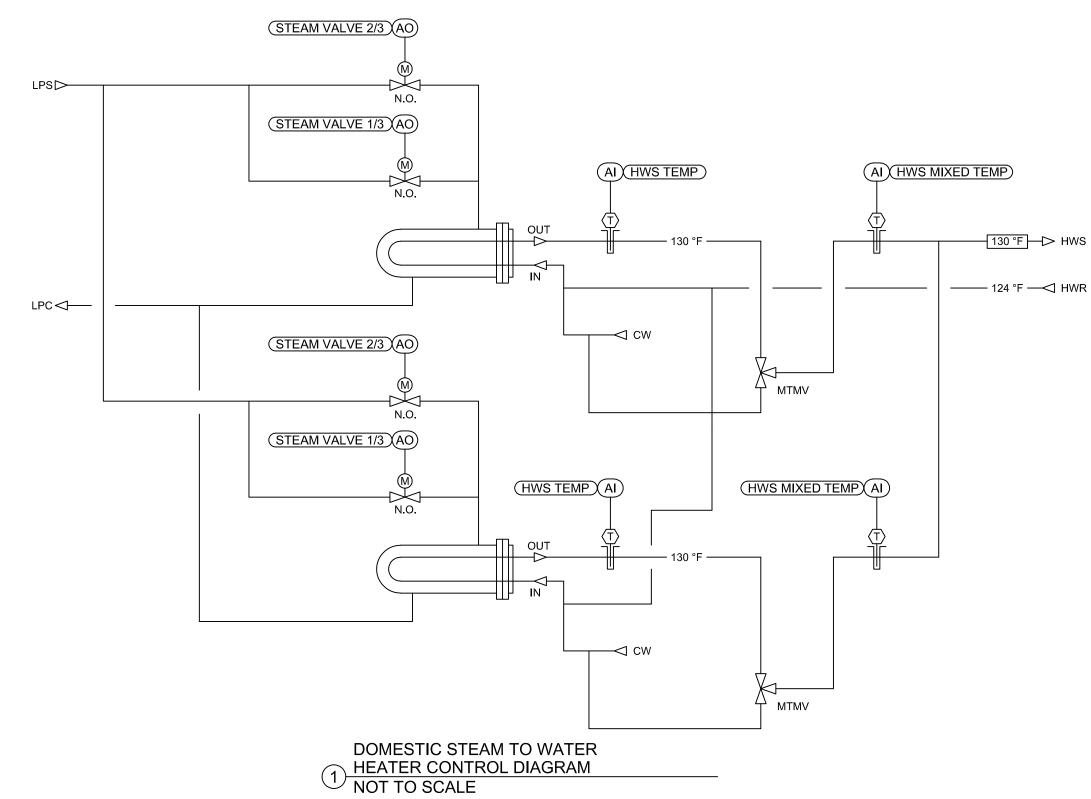
Starter BO PUMP 2 START/STOP

SEQUENCE OF OPERATIONS WATER MONITORING STATION (WMS)



the building.

POINTS LIST SCHEDULE - WATER MONITORING STATION (WMS)													
		HARDWAF	RE POINTS				SHOWN ON						
POINT NAME	AI AO BI BO				AV	BV	LOOP	SCHED	TREND	ALARM	GRAPHIC		
WATER MONITORING STATION													
WATER TEMPERATURE		X											
WATER OXIDANT LEVEL			Х						Х				
WATER PH LEVEL			X						X				
WATER PRESSURE			Х						X				
ALARMS	DESCRI	DESCRIPTION ALARM											
WATER TEMPERATURE		NATER TE								X			
WATER OXIDANT LEVEL - FREE CHLORINE		IF THE FREE CHLORINE LEVEL IS LESS THAN 0.5 mg/L. χ											
WATER OXIDANT LEVEL - MONOCHLORAMINE	IF THE MONOCHLORAMINE LEVEL IS LESS THAN 0.5 mg/L. χ												
WATER OXIDANT LEVEL - CHLORINE DIOXIDE	IF THE F	REE CHLC	RINE DIO	XIDE LEVE	_ IS LESS T	ΓHAN 0.3 m	ıg/L.			X			
WATER PH LEVEL	IF THE V	VATER PH	LEVEL EX	CEEDS A U	SER DEFI	NABLE LIM	IT.			X	_		
WATER PRESSURE	IF THE V	VATER PRE	ESSURE E	XCEEDS A	USER DEF	INABLE LII	MIT.			X			



DOINT NAME	HARDWARE POINTS						SHOWN ON					
POINT NAME	Al	AO	BI	ВО	SETPOINT	AV	BV	LOOP	SCHED	TREND	ALARM	GRAPHIC
STEAM SIDE		<u> </u>	<u> </u>	<u>'</u>			<u> </u>					
DWH-1 STEAM VALVE 1/3		Х										Х
DWH-2 STEAM VALVE 1/3		X										Х
DWH-1 STEAM VALVE 2/3		Х										Х
DWH-2 STEAM VALVE 2/3		Х										Х
WATER SIDE												
DWH-1 HWS TEMPERATURE	Х									Х	X	Х
DWH-2 HWS TEMPERATURE	Х									Χ	X	Χ
DWH-1 HWS MIXED TEMPERATURE	Х									Χ	X	Х
DWH-2 HWS MIXED TEMPERATURE	Х									Х	X	Χ
DWH-1 TANK TEMPERATURE	Х									Χ		
DWH-2 TANK TEMPERATURE	Х									Χ		
SETPOINTS												
DWH-1 HWS TEMPERATURE SETPOINT					130°F	Χ					X	Х
DWH-2 HWS TEMPERATURE SETPOINT					130°F	Χ					X	X
DWH-1 HWS MIXED TEMPERATURE SETPOINT					130°F	Χ					X	X
DWH-2 HWS MIXED TEMPERATURE SETPOINT					130°F	Χ					X	Х
ALARMS	DESCR	PTION									ALARM	
DWH-1 HIGH HWS TEMPERATURE	IF THE I	IF THE HWS TEMPERATURE IS GREATER THAN 135 °F (ADJ.) FOR GREATER THAN 5 MINUTES								X		
DWH-1 LOW HWS TEMPERATURE	IF THE I	IF THE HWS TEMPERATURE IS LESS THAN 125 °F (ADJ.) FOR GREATER THAN 5 MINUTES								X		
DWH-1 HIGH HWS MIXED TEMPERATURE	IF THE I	HWS MIXE	D TEMPER	RATURE IS	GREATER TH	AN 135 °F	F (ADJ.) FO	R GREATE	R THAN 5 I	MINUTES	X	
DWH-1 LOW HWS MIXED TEMPERATURE	IF THE I	HWS MIXE	D TEMPEF	RATURE IS	LESS THAN 12	25 °F (AD	J.) FOR GR	EATER TH	IAN 5 MINU	TES	X	
DWH-2 HIGH HWS TEMPERATURE					TER THAN 135	. ,				:S	X	
DWH-2 LOW HWS TEMPERATURE	IF THE I	HWS TEMF	PERATURE	IS LESS	THAN 125 °F (A	DJ.) FOR	R GREATER	THAN 5 M	INUTES		X	
DWH-2 HIGH HWS MIXED TEMPERATURE	IF THE I	HWS MIXE	D TEMPER	RATURE IS	GREATER TH	AN 135 °F	F (ADJ.) FO	R GREATE	R THAN 5 I	MINUTES	Х	
DWH-2 LOW HWS MIXED TEMPERATURE	IF THE I	HWS MIXE	D TEMPER	RATURE IS	LESS THAN 12	25 °F (AD	J.) FOR GR	EATER TH	IAN 5 MINU	TES	Х	

MEDICAL OXYGEN

ZONE VALVE BOX

NOTES:

MEDICAL OXYGEN

AREA ALARM PANEL

1. FIELD VERIFY LOCATION OF EXISTING MEDICAL GAS/VACUUM MASTER ALARM PANEL.

MEDICAL OXYGEN

AREA ALARM PANE

NOT TO SCALE

SEQUENCE OF OPERATIONS **DOMESTIC STEAM TO WATER HEATER (DWH-X)**

GENERAL DESCRIPTION

The domestic hot water system consists of an existing water softener, steam to water instantaneous water heaters, master thermostatic mixing valve, and recirculating pumps. Soft water will be supplied to the water heaters. Two master thermostatic mixing valves will supply water from each water heater. Point-of-use mixing valves will provide anti-scald protection at their respective fixtures. Two (2) hot water recirculation pumps will serve the two (2) hot water heaters. The water heaters are used to heat water for Building 6 Wings A, B, and C

Run Conditions

The domestic steam to water heaters shall operate in a lead/standby manner, in which the lead water heater shall run first. Upon failure of the lead water heater, the standby water heater shall run. Water heaters shall alternate lead/standby designation automatically

through a software switch if the user adjustable runtime is exceeded.

Hot Water Supply Temperature Setpoint

domestic hot water system as shown on the drawings.

The hot water supply temperature setpoint shall be a fixed setpoint of 130°F (adj.).

Heat Exchanger 1/3 - 2/3 Steam Valves - Hot Water Control

The controller shall measure the hot water supply temperature and modulate the two steam valves in sequence to maintain its setpoint.

Alarms shall be provided as follows:

- Domestic Steam to Water Heater 1:
- High HWS Temperature: If the HWS temperature is greater
- than 135°F for greater than 5 minutes. O Low HWS Temperature: If the HWS temperature is less than
- 125°F for greater than 5 minutes. O High HWS Mixed Temperature: If the HWS temperature is
- greater than 135°F for greater than 5 minutes.
- O Low HWS Mixed Temperature: If the HWS temperature is less than 125°F for greater than 5 minutes.

• Domestic Steam to Water Heater 2:

- O High HWS Temperature: If the HWS temperature is greater than 135°F for greater than 5 minutes.
- O Low HWS Temperature: If the HWS temperature is less than 125°F for greater than 5 minutes.
- O High HWS Mixed Temperature: If the HWS temperature is greater than 135°F for greater than 5 minutes.
- O Low HWS Mixed Temperature: If the HWS temperature is less than 125°F for greater than 5 minutes.

SEQUENCE OF OPERATIONS MEDICAL OXYGEN SYSTEM

General Description

The medical oxygen system consists of a zone valve box, area alarm panel, and an existing source of medical oxygen. The new medical oxygen system connects to the existing supply line in the mechanical room of A-Wing.

Alarms shall be provided as follows:

Area Alarm Panel: O High Medical Oxygen Pressure: If medical oxygen pressure

increases 20%.

O Low Medical Oxygen Pressure: If medical oxygen pressure decreases 20%.

POINTS LIST SCHEDULE - AREA ALARM PANEL (AAP)												
		HARDWAI	RE POINTS				SHOWN ON					
POINT NAME	Al	AO	BI	ВО	AV	BV	LOOP	SCHED	TREND	ALARM	GRAPHIC	
MEDICAL GAS												
MEDICAL OXYGEN PRESSURE	Х									Х		
ALARMS	DESCRI	DESCRIPTION ALARM										
HIGH MEDICAL OXYGEN PRESSURE	IF MEDI	F MEDICAL OXYGEN PRESSURE INCREASES 20% X										
LOW MEDICAL OXYGEN PRESSURE	IF MEDI	F MEDICAL OXYGEN PRESSURE DECREASES 20% X										

MEDICAL OXYGEN

MASTER ALARM PANEL

POINT NAME		HARDWARE POINTS				SOFWARE POINTS						
I OINT INAME		AO	BI	ВО	AV	BV	LOOP	SCHED	TREND	ALARM	GRAPHIC	
TEMPERATURE MONITORING												
HWR TEMPERATURE			Х						Х	Х		
CWR TEMPERATURE			Х						Х	Х		
ALARMS	DESCRI	DESCRIPTION ALARM										
LOW HWR TEMPERATURE	IF THE H	IF THE HWS TEMPERATURE IS LESS THAN 119 °F (ADJ.)										
HIGH CWR TEMPERATURE	IF THE H	HWS TEMP	PERATURE	IS GREAT	ER THAN	72 °F (ADJ.	.)			Х		

	CONSULTANT INFORMATION	ARCHITECT	Office of	SHEET TITLE MECHANICAL CONTROLS VI	PROJECT PHASE BID DOCUMENTS	PROJECT TITLE RENOVATE A & B WING BUILDING 6			VA PROJECT NUMBER 589A5-19-116
	STRUCTURAL / MECHANICAL / ELECTRICAL / FIRE PROTECTION CIVIL ENGINEER PLUMBING / TECHNICAL ENGINEER ENGINEER	SIDLLI DESIGN	Construction and Facilities			PROJECT LOCATION 2200 SW GAGE TOPEKA, KS 6			BUILDING NUMBER 6 DRAWING NUMBER
	STAND STRUCTURAL ENGINEERING SPUR DESIGN POOLE FIRE PROTECTION, INC. 11827 W. 112TH STREET, SUITE 200 11020 KING STREET, SUITE 350 19910 W. 161ST STREET OVERLAND PARK, KS 66210 OVERLAND PARK, KS 66210 OLATH, KS 66062 (913) 214-2169 (405) 842-6100 (913) 829-8650	Total DESIGN 312 SW 25th Street Oklahoma City, OK 73109 spur-design.com Overland Park, KS 66210 spur-design.com	Management		FULLY SPRINKLERED	DATE	CHECKED BY	DRAWN BY	6-M-706
Revision # Date		KS ARCH REG. NO. A-1139, EXP. 12/31/2019 KS ENGR REG. NO. E-2586, EXP. 12/31/2019	U.S. Department of Veteran Affairs			07/10/19	JES	JAD	Dwg. 121 OF 160