MECHANICAL

SCALE: AS NOTED

DATE: 04-29-2016

DWG.: **M-601**

SHEET: 33 OF 40

SPLIT SYSTEM HEAT PUMP FAN COIL SCHEDULE (AC UNITS) NOMINAL NOMINAL HEATING ELECTRICAL **NOMINAL** CABINET COOLING | HEATING LOAD NOTES SERVES BASIS OF DESIGN TYPE CFM VOLTS/PH MCA MBH TONS MBH 1,2,3 CEILING RECESSED 4-WAY AC-1-1 VESTIBULE 101 15.0 280-350 9.2 208/1 1.0 MITSUBISHI SLZ-KA15NA 1,2,3,4 WALL MOUNTED 1.0 1.0 AC-1-2 | ELEV MACH 102 145-406 208/1 MITSUBISHI MSZ-GE06NA AC-1-3 | ELEV FOYER 103 CEILING RECESSED 4-WAY 420-640 16.5 208/1 1.0 1,2,3 MITSUBISHI PLA-A24BA4 1,2,3 13.6 AC - 2 - 1| ELEV FOYER 201 CEILING RECESSED 4-WAY 420-640 208/1 1.0 MITSUBISHI PLA-A18BA4 1,2,3 AC-2-2 | ELEV LOBBY 202 CEILING RECESSED 4-WAY 420-640 19.3 208/1 1.0 MITSUBISHI PLA-A24BA4 AC-2-3 | STAIR S01 1,2,3,4 145-399 6.1 1.0 MITSUBISHI MSZ-GE12NA WALL MOUNTED 208/1 NOTES: 1. PROVIDE WITH MANUFACTURER'S WIRED, WALL MOUNTED CONTROLLER. 2. HEATING AND COOLING UNIT. 3. POWERED BY OUTDOOR UNIT. 4. PROVIDE CONDENSATE PUMP.

	REFRIGERANT CONDENSING UNIT SCHEDULE													
UNIT NO	SERVES	TYPE	NOMINAL COOLING TONS	NOMINAL HEATING MBH	COOLING EFFICIENCY SEER/EER	HEATING COP @ 47°F	DESIGN COOLING OUTDOOR DB (*F)	DESIGN HEATING OUTDOOR DB (*F)	REFRIG TYPE	VOLTS /PH	MCA		BASIS OF DESIGN	NOTES
CU-1	AC-1-1,2,3	VARIABLE SPEED, INVERTER DRIVE	_	54.0	18.9/12.0	3.75	92.0	-3	R-410A	208/1	42	_ [MITSUBISHI MXZ-8C48NAHZ	1,2,3,4
CU-2	AC-2-1,2,3	VARIABLE SPEED, INVERTER DRIVE	-	54.0	18.9/12.0	3.75	92.0	-3	R-410A	208/1	42	_	MITSUBISHI MXZ-8C48NAHZ	1,2,3,4

NOTES: 1. PROVIDE PRE-MANUFACTURED, GALVANIZED STEEL, MODULAR EQUIPMENT SUPPORT FRAME WITH EQUIPMENT CLAMPS FOR INSTALLATION ON ROOF AT ELEVATION REQUIRED BY VRF SYSTEM MANUFACTURER. PROVIDE SUPPORT MANUFACTURER'S RUBBER PAD FOR INSTALLATION BELOW SUPPORT FOOT FOR VIBRATION REDUCTION. EQUIPMENT SUPPORT FRAME SHALL BE SIMILAR TO BIGFOOT CO. SUPPORTS.

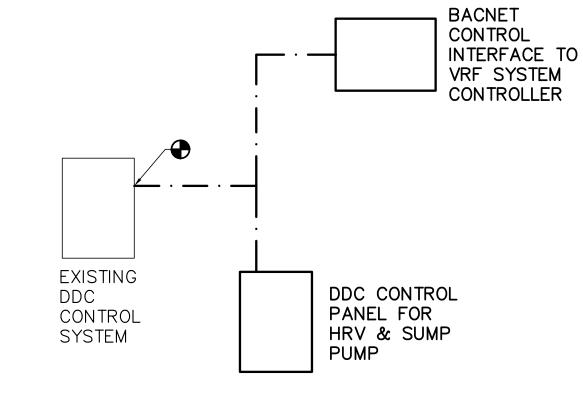
- 2. PROVIDE WITH LOW AMBIENT CONTROL. 3. PROVIDE DRAIN PAN HEATER.

4.	PROVIDE POWER TO	BRANCH		
	CONTROLLER FROM	OUTDOOR	UNIT.	

	ENERGY RECOVERY UNIT SCHEDULE														
		SUPPLY			EXHAUST				HE	ATING		ELECTRICAL			
	CEDVEC		ESP			ESP			PLY	EXHAL	JST	DATA		D.4.010, O.F. D.F.010M	NOTEC
UNIT NO	SERVES	SERVES CFM ESP IN WC FAN W	CFM	IN WC	FAN W	EAT F	LAT *F	EAT@ RH F@%	LAT *F	VOLTS/ WATTS		BASIS OF DESIGN	NOTES		
HRV-1	ELEV LOBBY	75	0.54	65	75	0.4	65	-3	38	70/35	29	120/1	170	FANTECH FIT 120H	1
NOTE: 1	OTE: 1. PROVIDE MOTORIZED DAMPERS FOR OUTSIDE AIR AND EXHAUST.														

	DIFFUSER / REGISTER SCHEDULE											
UNIT NO	FACE SIZE IN	NECK SIZE IN	MAX PRESSURE DROP IN WC	MAX NOISE CRITERIA	CFM RANGE	TYPE	BASIS OF DESIGN	NOTES				
E-1	24×24	6ø	0.1	25	0-100	PERFORATED EXHAUST GRILLE	PRICE PDDR	1,2,3				
NOTES: 1.	PROVIDE 1	TRANSITIO	N FROM DU	JCTWORK 7	TO GRILLE.	STEEL CONSTRUCTION.						

LOUVER SCHEDULE											
UNIT NO	SERVES	TYPE	CFM		IMENSION HEIGHT		MIN FREE AREA SQUARE FT	BASIS OF DESIGN	NOTES		
L-1	HRV-1 OA	FIXED	75	12"	7-3/4"	4"		RUSKIN BV100	1,2,3		
L-2	HRV-1 EA	FIXED	75	12"	7-3/4"	4"		RUSKIN BV100	1,2,3		
					·						
NOTES: 1. PROVIDE WITH BIRDSCREEN. 3. PROVIDE FINISH IN CUSTOM COLOR SELECTED BY ARCHITECT. 2. LOUVER SHALL BE DRAINABLE.											



MOTORIZED

AIR DAMPER

MOTORIZED

AIR DAMPER-

EXHAUST

OUTSIDE

HRV 1

SYSTEM

POINT

DESCRIPTION

HRV ENABLE

SUPPLY FAN STATUS EXHAUST FAN STATUS

OUTSIDE AIR DAMPER

EXHAUST AIR DAMPER

HRV SYSTEM OCCUPIED MODE:

OPERATOR THROUGH THE GUI.

OCCUPIED / UNOCCUPIED MODES:

AIR DAMPER SHALL REMAIN CLOSED.

SYSTEM

POINT

DESCRIPTION

SUMP PUMP SP-1 ALARM

ALARM CONDITION

M-601 NOT TO SCALE

M-601 NOT TO SCALE

HRV SYSTEM OCCUPANCY:

SEQUENCE OF OPERATION - HRV UNIT

HRV-1 POINTS LIST

1. GENERATE AN ALARM IF FAN FAILS TO SHOW PROOF OF OPERATION.

THE HRV UNIT SHALL RUN VIA THE HRV UNIT MANUFACTURER'S CONTROLS.

THE HRV SYSTEM OCCUPANCY MODE SHALL BE DETERMINED BY A DEDICATED,

THE SCHEDULE SHALL BE ADJUSTABLE AND ACCESSIBLE TO THE BUILDING

OUTSIDE AND EXHAUST AIR DAMPERS SHALL REMAIN OPEN. DURING THE

SP-1 CONTROLLER

SUMP PUMP POINTS LIST

1. GENERATE ALARM IF SUMP PUMP CONTROLLER INDICATES AN

4 SUMP PUMP CONTROL DIAGRAM

UNOCCUPIED MODE THE UNIT SHALL BE OFF AND THE OUTSIDE AND EXHAUST

2 HRV-1 UNIT CONTROL DIAGRAM

VARIABLE VARIABLE LOG

GENERAL NOTE

NOTE ON BASIS OF DESIGN

PRODUCTS OF OTHER MANUFACTURERS ARE

ACCEPTABLE IF THEY MEET THE OPERATIONAL

REQUIREMENTS INDICATED. ANY ADJUSTMENTS TO

DUCTING, PIPING, WIRING OR CONFIGURATION DUE

WILL BE ACCOMPLISHED BY THE CONTRACTOR AT

TO THE SELECTION OF A MANUFACTURER OTHER

THAN THAT LISTED AS THE BASIS OF DESIGN

NO ADDITIONAL EXPENSE TO THE OWNER.

NOTES

USER ADJUSTABLE 7 DAY / 24 HOUR SCHEDULE LOCATED IN THE DDC SYSTEM.

DURING THE OCCUPIED MODE THE HRV UNIT SHALL RUN CONTINUOUSLY AND THE

-EXHAUST FAN

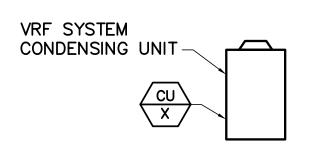
-SUPPLY FAN

CURRENT SENSOR

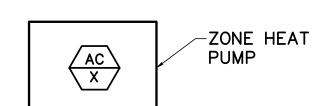
NOTES

CURRENT SENSOR

1 CONTROL RISER DIAGRAM M-601 NOT TO SCALE



2. 24x24 LAY-IN FOR T-BAR CEILING.



VRF MANUFACTURER'S TEMPERATURE

VRF SYSTEM MANUFACTURER'S CONTROLS.

TEMPERATURE CONTROLLER.

VRF SYSTEM POINTS LIST											
SYSTEM POINT DESCRIPTION	GRAPHIC	ANALOG INPUT	ALOG	BINARY INPUT	BINARY OUTPUT		ANALOG VARIABLE	<u> </u>	TREND LOG		NOTES
ZONE TEMPERATURE SETPOINT	Х		Х				Х		Х		2,4
ZONE SPACE TEMPERATURE	Х	Х				Х			Х		1,2,3
HEAT PUMP FAN SPEED	Х		X						Х		2,4
HEAT PUMP ALARM/FAULT	Х			Х		Х			Х		2,3,6
HEAT PUMP STATUS (ON/OFF)	Х			Х					Х		2,3
CU ALARM/FAULT	Х			Х		Х			Х		3,6,8
CU STATUS (ON/OFF)	Х			Х					Х		3,8
CONDENSATE PUMP HI-LEVEL ALARM	Х			X		Х			Х		5,7
VRF SYSTEM ENABLE	Х				Х				Х		
NOTEO											

- GENERATE ALARM IF SPACE TEMPERATURE IS OR LOWER THAN 3°F BELOW HEATING SETPOINT FOR MORE THAN 10 MINUTES (ADJUSTABLE).
- POINT TYPICAL FOR EACH ZONE.
 READ DATA FROM THE VRF CONTROL SYSTEM THROUGH THE BACNET GATEWAY.
 PROVIDE DATA TO THE VRF CONTROL SYSTEM THROUGH THE BACNET GATEWAY. PROVIDE FOR TWO UNITS.
- GENERATE ALARM IF VRF SYSTEM CONTROLLER INDICATES AN ALARM CONDITION. GENERATE ALARM IF CONDENSATE PUMP HI-LEVEL ALARM SWITCH IS ACTIVATED. POINT TYPICAL FOR EACH CONDENSING UNIT.

TO MEET THE HEATING REQUIREMENTS, DEPENDING UPON THE OPERATING MODE OF THE VRF SYSTEM USING THE SYSTEM MANUFACTURER'S INTERNAL CONTROLS.

ZONE UNOCCUPIED MODE: WHEN THE ZONE IS IN THE UNOCCUPIED MODE, THE SETPOINTS SHALL ADJUST, AND SYSTEM COMPONENT SHALL OPERATE AS DEFINED ABOVE. IN THE UNOCCUPIED MODE THE ZONE HEAT PUMP FAN SHALL OPERATE AS REQUIRED TO MAINTAIN SETPOINTS.

SEQUENCE OF OPERATION - VRF SYSTEM AND ZONE HEAT PUMPS

VRF SYSTEM OCCUPANCY: THE VRF SYSTEM OCCUPANCY MODE SHALL BE DETERMINED BY A DEDICATED, USER ADJUSTABLE 7 DAY / 24 HOUR SCHEDULE LOCATED IN THE DDC SYSTEM. THE SCHEDULE SHALL BE ADJUSTABLE AND ACCESSIBLE TO THE BUILDING OPERATOR THROUGH THE GUI. WHEN THE VRF SYSTEM IS IN THE OCCUPIED MODE, EACH ZONE SHALL BE IN EITHER THE OCCUPIED MODE OR THE UNOCCUPIED

MODE. WHEN THE VRF SYSTEM IS IN THE UNOCCUPIED MODE, EACH ZONE SHALL BE IN THE NIGHT SETBACK MODE. VRF SYSTEM HEATING MODE: THE VRF SYSTEM SHALL PROVIDE AUTOMATIC SIMULTANEOUS HEATING OF SEPARATE ZONES VIA THE

ZONE OCCUPIED / UNOCCUPIED MODES: THE ZONE HEAT PUMP SHALL OPERATE BY THE VRF MANUFACTURER'S CONTROLS TO MAINTAIN THE DEFAULT OCCUPIED SET POINTS (68°F HEATING; ADJUSTABLE) DEFINED BY THE DDC SYSTEM THROUGH THE GRAPHICAL USER INTERFACE AND THROUGH THE LOCAL VRF MANUFACTURER'S

DURING THE ZONE OCCUPIED MODE THE INDOOR ZONE HEAT PUMP FAN SHALL RUN CONTINUOUSLY FOR VENTILATION PURPOSES.

ZONE OCCUPIED HEATING MODE: WHEN THE ZONE IS IN THE HEATING MODE, THE VRF SYSTEM HEATING SET POINT SHALL BE 68 DEG F (ADJUSTABLE).

THE VRF SYSTEM AIR COOLED CONDENSING UNIT SHALL VARY THE SPEED OF THE COMPRESSOR(S)

VRF SYSTEM CONTROL DIAGRAM M-601 NOT TO SCALE