ENERGY RECOVERY UNIT SCHEDULE

TAG	LOCATION	OA (CFM)	SA (CFM)	EA (CFM)	RA (CFM)	SUPPLY FAN							EXHAUST FAN							DIRECT EXPANSION COOLING						HOT GAS REHEAT COIL				ENERGY RECOVERY WHEEL	OPERATING WEIGHT (LBS)	SUPPLY FILTERS	RETURN FILTER	ELECTRICAL REQUIREMENTS				MAKE / MODEL NO.	NOTES:
						FAN TYPE	T.S.P. (IN. WC)	E.S.P. (IN. WC)	FAN DIA (INCHES)	RPM	HP	BHP	FAN TYPE	T.S.P. (IN. WC)	E.S.P. (IN. WC)	FAN DIA (INCHES)	RPM	HP	BHP	TOTAL MBH	SENS MBH	FACE AREA SQ FT.	ROWS	EAT °F DB/WB	LAT °F DB/WB	APD IN-W.C.	CFM	EAT °F	LAT °F	MBH					V/PH	MCA	MAX FUSE	VFD(S)		
ERU-1	OUTDOOR	1890	1800	1890	1800	PLENUM	2.77	1.25	-	2320	2.5	1.8	PLENUM	2.1	1	-	2156	2.5	1.5	68	52	6.6	4	76.3/63	50.3/49.6	0.13	1800	45.4	86.6	100	ERW-1	2025	MERV 8	MERV 8	460/3	22	30	N	TRANE HORIZON OADD096D3	-

NOTES:
1. PROVIDE ERU WITH 2" INSULATED DOUBLE WALLED CONSTRUCTION, SOUND ATTENUATION PACKAGE, HINGED ACCESS DOORS, OUTDOOR AIR AND RETURN AIR FILTER SECTIONS, AND SERVICE LIGHTS.
2. PROVIDE WITH 36" HEIGHT ROOF CURB.
3. PROVIDE WITH OUTSIDE AIR HOOD SIZED AT AN INTAKE OF 200 FPM OR LESS.

ENERGY RECOVERY WHEEL PERFORMANCE SCHEDULE

TAG	WINTER CONDITIONS												SUMMER CONDITIONS												NOTES:
	WHEEL ENTERING CONDITIONS				WHEEL LEAVING CONDITIONS				ENERGY RECOVERY @ WINTER DESIGN		EFFECTIVENESS @ WINTER DESIGN		WHEEL ENTERING CONDITIONS				WHEEL LEAVING CONDITIONS				ENERGY RECOVERY @ SUMMER DESIGN		EFFECTIVENESS @ SUMMER DESIGN		
	OUTSIDE AIR		RETURN AIR		SUPPLY AIR		EXHAUST AIR						OUTSIDE AIR		RETURN AIR		SUPPLY AIR		EXHAUST AIR						
	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	SENSIBLE MBH	LATENT MBH	SENSIBLE %	LATENT %	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	DB °F	WB °F	SENSIBLE MBH	LATENT MBH	SENSIBLE %	LATENT %	
ERW-1	-10	-11	70	53	46	38	15	15	113	18.4	69%	62%	87	71	72	58	77	63	82	67	21.2	28.7	69%	62%	*

NOTES:

HEAT PUMP SCHEDULE - WATER SOURCE

TAG	SERVES	CFM	MIN OA	ESP IN WC	COOLING CAPACITY						HEATING CAPACITY			ELECTRICAL DATA		TYPICAL UNIT MFG & MODEL NO.	NOTES:
					EDB °F	EWB °F	TOTAL MBH	EWT °F	GPM	WPD	EAT	EWT	TOTAL MBH	MCA	VOLTS/Ø		
HP-1109	TRAINING 1109	350	280	0.3	80	67	14	90	2.2	2.3	70	70	18.2	8.2	265/1	TRANE GEH	1,2
HP-2203	OFFICE 2203	250	50	0.3	80	67	8.6	90	1.4	1.8	70	70	18.2	4	265/1	TRANE GEH	1,2

NOTES:
1. PROVIDE WITH DELUXE SOUND ATTENUATION PACKAGE. PROVIDE FLEXIBLE ELASTOMER DUCT LINER IN FIRST 10 FEET OF SUPPLY AND RETURN DUCTWORK,
2. PROVIDE WITH HOSE KITS AND LIBERTY PUMP LCU-20S (OR APPROVED EQUAL) CONDENSATE REMOVAL PUMP WITH CHECK VALVE AND SAFETY SWITCH.
3.

SPLIT SYSTEM AIR CONDITIONER SCHEDULE

INDOOR SECTION TAG	OUTDOOR SECTION TAG	TYPE	SERVES	TOTAL CAPACITY BTUH	SEER	INDOOR SECTION			OUTDOOR SECTION			INDOOR SECTION MODEL NO.	OUTDOOR SECTION MODEL NO.	NOTES:
						CFM (DRY) HI-SPEED	FAN FLA	V/PH/HZ	FAN FLA	MCA	V/PH/HZ			
AC-1303	CU-1303	R-410A	IT 1303	12000	15.2	425	0.33	208/1/60	0.35	13	208/1/60	MITSUBISHI PKA-A12NHA6	MITSUBISHI PUY-A12NHA6	1,2
AC-1022	CU-1022	R-410A	IT 1022	24000	17	635	0.36	208/1/60	0.75	30	208/1/60	MITSUBISHI PKA-A24NHA6	MITSUBISHI PUY-A24NHA6	1,2
AC-2009	CU-2009	R-410A	IT 2009	12000	15.2	425	0.33	208/1/60	0.35	13	208/1/60	MITSUBISHI PKA-A12NHA6	MITSUBISHI PUY-A12NHA6	1,2
AC-2022	CU-2022	R-410A	IT 2022	12000	15.2	425	0.33	208/1/60	0.35	13	208/1/60	MITSUBISHI PKA-A12NHA6	MITSUBISHI PUY-A12NHA6	1,2

NOTES:
1. PROVIDE UNIT WITH SNOW STAND, MINI CONDENSATE PUMP (SAUERMANN SI-30 OR APPROVED EQUAL), MHK THERMOSTAT AND THREE POLE DISCONNECT.
2. PROVIDE OUTDOOR UNIT WITH ADVANCED WIND BAFFLE KIT FOR LOW AMBIENT APPLICATION.

FAN SCHEDULE

TAG	LOCATION	SERVICE	TYPE	ROOF OPENING	CFM	SP IN W.G.	DIAMETER IN.	RPM	ELECTRICAL DATA				TYPICAL UNIT MFG & MODEL NO.	NOTES:
									BHP / HP	VOLTS	PH	VFD (DIV, 26)		
EF-A	ROOF	GENERAL	CENTRIFUGAL	14.5x14.5	1000	1	25	1725	0.3 / .05	115	1	N	GREENHECK CUE-101-A	1

NOTES:
1. PROVIDE WITH AN ECM MOTOR WITH SPEED CONTROL, UNIT MOUNTED DISCONNECT SWITCH AND ROOF CURB.

REHEAT COIL SCHEDULE

TAG	LOCATION	AIR DATA				ELECTRICAL DATA			MFG SIZE HxL (IN.)	TYPICAL UNIT MFG & MODEL NO.	NOTES:
		CFM	TEMP °F		MAX APD (IN WC)	kW	VOLTS	PHASE			
			ENT	LVG							
RHC-1504	OFFICE 1504	140	55	90	0.5	1.5	208	1	6"x10"	INDEECO QUZ	1
RHC-1505	MANAGER 1505	165	55	90	0.5	1.8	208	1	6"x10"	INDEECO QUZ	1

NOTES:
1. PROVIDE WITH SCR CONTROLS

FILTER SECTION SCHEDULE

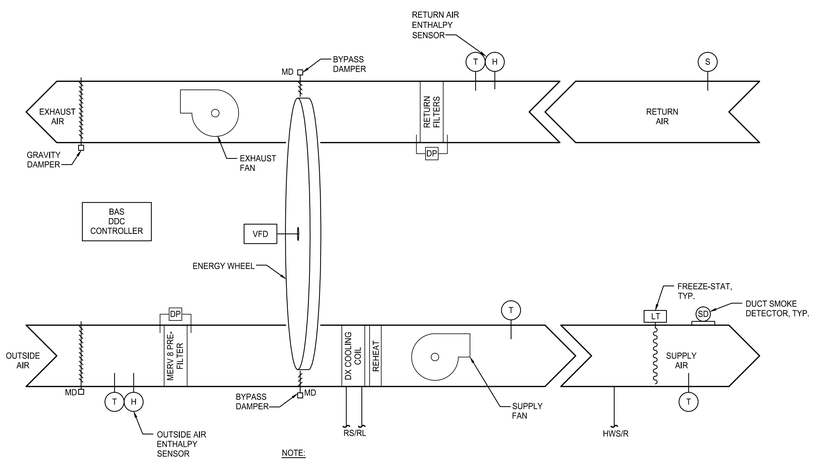
TAG	SERVICE	FACE VEL (FPM)	SIZE (IN)			NO. FILTERS		ADP IN WC		EFFICIENCY PERCENTAGE	TYPICAL UNIT MFG & MODEL NO.	NOTES:
			H	L	D	H	L	INITIAL	FINAL			
HF-1	LUOM	450	27.3	23.4	25	1	1	0.26"	0.75"	99.97%	CAMFIL FARR GLIDEPACK UNITRACK	1

NOTES:
1. PROVIDE CAMFIL FARR GASKETED DURAFIL ES FILTERS THAT ARE 24"X24"X11.6"

REGISTER, DIFFUSER & GRILL SCHEDULE

TAG	MAX CFM	NECK SIZE	TYPE	DP	MAX NC	TYPICAL UNIT MFG & MODEL NO.	NOTES
S-1	90	4"ø	LAY-IN	0.08	<20	PRICE SCD	1,2
S-2	160	6"ø	LAY-IN	0.09	<20	PRICE SCD	1,2
S-3	280	8"ø	LAY-IN	0.09	23	PRICE SCD	1,2
S-4	440	10"ø	LAY-IN	0.12	23	PRICE SCD	1,2
S-5	1000	20"x14"	DUCT MOUNTED	0.02	21	PRICE 620	3,4
E/R-1	125	8"X8"	LAY-IN	0.06	<20	PRICE 630	1,2
E/R-2	210	10"X10"	LAY-IN	0.09	<20	PRICE 630	1,2
E/R-3	325	12"X12"	LAY-IN	0.08	<20	PRICE 630	1,2
E/R-4	480	16"X16"	LAY-IN	0.06	<20	PRICE 630	1,2
E/R-5	625	18"X16"	LAY-IN	0.06	<20	PRICE 630	1,2
E/R-6	1000	20"X18"	LAY-IN	0.10	<20	PRICE 630	1,2
T-1	290	8"ø	LAY-IN	0.09	23	PRICE 630	1,2
T-2	580	18"X16"	WALL MOUNT	0.09	<20	PRICE 630	2,3

NOTES:
1. PROVIDE BORDER FOR LAY-IN CEILING INSTALLATION, 24x24 CEILING GRID,
2. PROVIDE BORDER FOR GYP. CONTRUCTION,
3. PROVIDE INTEGRAL OPPOSED BLADE DAMPER FOR BALANCING.



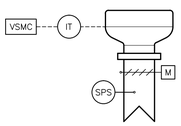
NOTE:

DETAILED SCHEMATIC & SEQUENCE OF OPERATION TO BE INCLUDED IN ADDENDUM 1

SEQUENCE OF OPERATION - ENERGY RECOVERY UNIT (F10)

NOT TO SCALE

1. EXHAUST FAN SHALL BE CONTROLLED VIA DDC CONTROLLER (PROVIDED BY THE ATC CONTRACTOR). ALL SETPOINTS SHALL BE ADJUSTABLE. ALL ACTUATORS SHALL BE ELECTRONIC. FAN SHALL OPERATE AT CONSTANT SPEED.
2. MOTORIZED DAMPERS SHALL HAVE END SWITCHES TO PROVE DAMPER OPEN PRIOR TO THE FAN STARTING.
3. FANS SHALL BE STARTED AND STOPPED VIA THE SAME OCCUPANCY SCHEDULE AS THE ASSOCIATED AIR HANDLING SYSTEM.
4. COORDINATE OCCUPIED/UNOCCUPIED WITH OWNER.

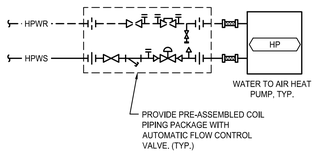


FAN CONTROL
1. WHILE IN UNOCCUPIED MODE, THE EXHAUST FAN SHALL BE OFF WITH THE ASSOCIATED EXHAUST AIR DAMPER (EAD) CLOSED.
2. WHEN STARTED IN OCCUPIED MODE, THE EAD SHALL BE OPEN AND THE EXHAUST FAN SHALL START.

ALARMS
1. IF THE EXHAUST FAN FAILS, THE DDC CONTROLLER SHALL GIVE A DETAILED ALARM SIGNAL TO THE BAS.
2. FAN STATUS: CURRENT TRANSMITTER SHALL ALARM UPON FAN FAILURE.

SEQUENCE OF OPERATION - EXHAUST FANS (C14)

NOT TO SCALE



A. WATER TO AIR HEAT PUMPS:
1. THE FACTORY MOUNTED HEAT PUMP CONTROLS SHALL PROVIDE ALL CONTROLS.
2. UNITS FANS OPERATE CONTINUOUSLY WHILE THE BUILDING IS IN OCCUPIED MODE. EXISTING UNIT CONTROLS TO BE MODIFIED ACCORDINGLY.
3. UPON A CALL FOR COOLING, THE REVERSING VALVE AND THE COMPRESSOR SHALL BE ENABLED TO MAINTAIN SPACE TEMPERATURE.
4. UPON A CALL FOR HEATING, THE REVERSING VALVE SHALL DISABLE AND THE COMPRESSOR SHALL BE ENABLED TO MAINTAIN SPACE TEMPERATURE.
5. DETECTION OF WATER BY THE OVERFLOW LEAK SENSOR SHALL DISABLE THE ASSOCIATED UNIT AND SEND AN ALARM TO THE BMS.

B. MONITORING POINT:
1. HEAT PUMP FAILURE ALARM
2. SPACE TEMPERATURE

HEAT PUMP PIPING SCHEMATIC AND SEQUENCE OF OPERATION (A10)

NOT TO SCALE

A. ELECTRIC REHEAT COILS

1. UPON A DROP IN SPACE TEMPERATURE BELOW THE SETPOINT, THE ZONE CONTROLLER SHALL ENABLE THE ASSOCIATED ELECTRIC REHEAT COIL. THE REHEAT COIL SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE.

SEQUENCE OF OPERATION - ELECTRIC REHEAT COIL (A14)

NOT TO SCALE

NOTE:

1. SEE SHEET M-001 FOR LEGEND AND ABBREVIATIONS.

REV	DESCRIPTION	DATE
0	ISSUED FOR CONSTRUCTION	12-21-17

ISSUED FOR CONSTRUCTION
12-21-17
CURRENT ISSUE STATUS:

STATE OF MAINE
KERRY D. DINEEN
13301
LICENSED
PROFESSIONAL ENGINEER
12-21-17

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MECHANICAL SCHEDULES AND SEQUENCE OF OPERATION

SHEET TITLE:

0 1/4" 1/2" 1" 2" 3"

SCALE: AS NOTED

PROJECT MANAGER:	RSC	PROJECT NO:	17123
A/E OF RECORD:	KDD		
JOB CAPTAIN:	SDL		
DRAWN BY:	CWF		
SMRT FILE:	M-601-17123	SHEET No.	M-601

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