

DEDICATED OUTSIDE AIR SYSTEM WITH ENERGY RECOVERY SCHEDULE

DESIGNATION	DOAS-1	DOAS-2	DOAS-3	DOAS-4	DOAS-5	DOAS-6
LOCATION	ROOF	ROOF	ROOF	ROOF	ROOF	ROOF
AREA SERVED	SCIENCE CLASSROOMS	SCIENCE CLASSROOMS	OLD CLASSROOMS	OLD CLASSROOMS	OLD CLASSROOMS	CAFETERIA
MANUFACTURER	LG	LG	LG	LG	LG	LG
MODEL	ARND30UDBE4	ARND30UDBE4	ARND30UDBE4	ARND30UDBE4	ARND30UDBE4	ARND30UDBE4
WEIGHT (LBS)	2,326	2,326	2,326	2,326	2,326	2,326
WEIGHT OF ROOF CURB (LBS)						
DESIGN DATA:						
SUPPLY AIR (CFM)	3000	2550	2970	2450	2180	3000
OUTDOOR AIR (CFM)	3000	2550	2970	2450	2180	3000
RETURN AIR (CFM)	3000	2550	2970	2450	2180	3000
EXHAUST (CFM)	3000	2550	2970	2450	2180	3000
SUMMER OA TEMP (°F) DB/WB	92/74	92/74	92/74	92/74	92/74	92/74
SUMMER RA TEMP (°F) DB/WB	75/62	75/62	75/62	75/62	75/62	75/62
WINTER OA TEMP (°F)	10	10	10	10	10	10
WINTER RA TEMP (°F)	70	70	70	70	70	70
SUPPLY FAN MODULE:						
AIRFLOW (CFM)	3000	2550	2970	2450	2180	3000
HP	10	10	10	10	10	10
RPM	2352	2352	2352	2352	2352	2352
ESP/TSP (IN H ₂ O)	2/4.6	2/4.6	2/4.6	2/4.6	2/4.6	2/4.6
EXHAUST FAN MODULE:						
AIRFLOW (CFM)	3000	2550	2970	2450	2180	3000
HP	10	10	10	10	10	10
RPM	2352	2352	2352	2352	2352	2352
ESP/TSP (IN H ₂ O)	2/4.6	2/4.6	2/4.6	2/4.6	2/4.6	2/4.6
ENERGY RECOVERY MODULE - ENTHALPY WHEEL TYPE:						
SUMMER E.A.T. (°F) DB/WB	92/74	92/74	92/74	92/74	92/74	92/74
SUMMER L.A.T. (°F) DB/WB	79.2/66	79.2/66	79.2/66	79.2/66	79.2/66	79.2/66
SUMMER RECOVERY SEN./TOT (MBH)	41.7/94.5	35.4/80.3	41.3/93.5	34.0/77.2	30.3/68.7	41.7/94.5
WINTER E.A.T./L.A.T. (°F)	10/44	10/44	10/44	10/44	10/44	10/44
WINTER RECOVERY (MBH)	110.7	94.1	109.6	90.4	80.4	110.7
MOTOR HP	10	10	10	10	10	10
ESP/TSP (IN H ₂ O)	2/4.6	2/4.6	2/4.6	2/4.6	2/4.6	2/4.6
DX COOLING COIL:						
E.A.T. (°F) DB/WB	79.2/66	79.2/66	79.2/66	79.2/66	79.2/66	79.2/66
L.A.T. (°F) DB/WB	55/55	55/55	55/55	55/55	55/55	55/55
CAPACITY (MBH) SENS./TOTAL	78.8/105.3	67.0/89.5	78.0/104.2	64.4/86.0	57.3/76.6	78.8/105.3
HOT GAS REHEAT COIL:						
E.A.T./L.A.T. (°F)	55/70	55/70	55/70	55/70	55/70	55/70
CAPACITY (MBH)	48.8	41.5	48.3	43.9	35.8	48.8
DX COIL (ASHP - HEATING MODE)						
E.A.T./L.A.T. (°F) (WITH ENERGY RECOVERY)	44/75	44/75	44/75	44/75	44/75	44/75
CAPACITY (MBH) (WITH ENERGY RECOVERY)	100.9	85.8	100.0	82.4	73.2	100.9
E.A.T./L.A.T. (°F) (WITHOUT ENERGY RECOVERY)	10/54	10/61	10/54	10/64	10/70	10/54
CAPACITY (MBH) (WITHOUT ENERGY RECOVERY)	142.7	142.7	142.7	142.7	142.7	142.7
FILTER:						
PRE-FILTERS SUPPLY & EXHAUST	2" MERV 8	2" MERV 8	2" MERV 8	2" MERV 8	2" MERV 8	2" MERV 8
QUANTITY/SIZE	(2) 25X20 RETURN AIR (2) 25X25 OUTDOOR AIR (4) 25X20 SUPPLY AIR	(2) 25X20 RETURN AIR (2) 25X25 OUTDOOR AIR (4) 25X20 SUPPLY AIR	(2) 25X20 RETURN AIR (2) 25X25 OUTDOOR AIR (4) 25X20 SUPPLY AIR	(2) 25X20 RETURN AIR (2) 25X25 OUTDOOR AIR (4) 25X20 SUPPLY AIR	(2) 25X20 RETURN AIR (2) 25X25 OUTDOOR AIR (4) 25X20 SUPPLY AIR	(2) 25X20 RETURN AIR (2) 25X25 OUTDOOR AIR (4) 25X20 SUPPLY AIR
SINGLE POINT POWER CONNECTION:						
VOLTS/Ø/Hz	208/3/60	208/3/60	208/3/60	208/3/60	208/3/60	208/3/60
MCA/MOCP (AMPS)	24.8/35	24.8/35	24.8/35	24.8/35	24.8/35	24.8/35
NOTES: 1. EACH PACKAGED UNIT INCLUDES THE FOLLOWING COMPONENTS: <ul style="list-style-type: none">RETURN PLENUM WITH SIDE INLET OR BOTTOM INLET (SEE PLANS).EXHAUST FAN WITH DISCHARGE OUTLET.ENERGY RECOVERY W/ ENTHALPY WHEEL AND OAI HOODS.FLAT FILTER MODULE FOR OUTSIDE AIR AND EXHAUST AIR.DX COIL WITH AIR SOURCE HEAT PUMP COIL AND HOT GAS REHEAT COIL.SUPPLY FAN AND DISCHARGE PLENUM WITH SIDE OUTLET OR BOTTOM OUTLET (SEE PLANS).FLAT FILTER FOR SUPPLY AIR.UNIT SHALL BE MOUNTED ON VIBRATION ISOLATION ROOF CURB. HEIGHT OF CURB IS TO BE COORDINATED WITH FINAL FINISHED ROOF SURFACE, INCLUDING DEVIATIONS DUE TO CRICKETS, ROOF DRAINS, ETC. LOWER PORTION OF VIBRATION CURB SHALL EXTEND 12" MINIMUM ABOVE FINISHED ROOF SURFACE. PROVIDE BLOCKING OR SIMILAR AS NECESSARY. MASON INDUSTRIES TYPE RSC OR EQUIVALENT. 2. PROVIDE THE FOLLOWING FOR EACH UNIT: <ul style="list-style-type: none">SINGLE POINT EXTERNAL POWER CONNECTION AT UNIT. PROVIDE FACTORY INSTALLED, UNIT-MOUNTED, NON-FUSED LOCAL DISCONNECT SWITCH.EACH UNIT SHALL BE CONNECTED TO THE PACSSA000 AC SMART S CONTROLLER FOR GRAPHICAL INTERFACE, REMOTE MONITORING AND CONTROL.EXTRA FILTER SET FOR EACH UNIT. 3. CONTRACTOR SHALL HIRE THE MANUFACTURER'S INSTALLATION TECHNICIAN FOR INSTALLATION AND STARTUP. PROVIDE STARTUP REPORTS TO THE ENGINEER FOR REVIEW AND APPROVAL..						

PACKAGED ROOFTOP AC UNIT SCHEDULE

DESIGNATION	RTU-1	RTU-2
LOCATION	ROOF	ROOF
AREA SERVED	LIBRARY	LIBRARY OFFICES
MANUFACTURER	CARRIER	CARRIER
MODEL	50LC0B14A3A5-1R5A0	50FCQA04A2A5-0F5C0
NOMINAL CAPACITY (TONS)	12.5	3
WEIGHT OF UNIT (LBS)	2234	570
WEIGHT OF ROOF CURB (LBS)	240	115
EER	12.40	14.30 SEER
DESIGN DATA:		
SUPPLY AIR (CFM)	5300	900
OUTDOOR AIR (CFM)	1300	130
RETURN AIR (CFM)	4000	770
SPILL AIR (CFM)	575	0
SUMMER OA TEMP (°F) DB/WB	92/74	92/74
SUMMER RA TEMP (°F) DB/WB	75/62	75/62
WINTER OA TEMP (°F)	10	10
WINTER RA TEMP (°F)	68	68
CONDENSER:		
COMPRESSOR No./TYPE	2	1
REFRIGERANT TYPE	R-410A	R-410A
No. OF REFRIGERANT CIRCUITS	1	1
No. OF FANS	3	1
FLA (AMPS) EA.	1.3	1.5
AMBIENT TEMP. (°F)	92	92
FILTERS:		
OA-FILTER (QTY / SIZE)	4 / 16X25X1	1 / 20X24X1
MAIN FILTER ((QTY / SIZE)	6 / 20X25X2	2 / 16X25X2
EVAPORATOR COIL:		
E.A.T. (°F) DB/WB	80.7/64.9	79.3/63.8
L.A.T. (°F) DB/WB	55/55	55/55
SENS./TOTAL CAPACITY (MBH)	147.7/164.5	26.4/27.0
HEATING:	DUCT STEAM COIL (SC-1) (SEE BELOW)	HEAT PUMP
CAPACITY (MBH)	180	13
E.A.T./L.A.T. (°F)	53.8/85.0	59.3/72
SUPPLY FAN:		
CFM	5300	1000
ESP/TSP (IN H ₂ O)	1.5	0.8
BHP/HP	2.86 BHP	0.41
RPM	942	1771
STARTER TYPE	VFD	HOA
ELECTRICAL DATA - SINGLE POINT POWER CONNECTION:		
VOLTS/Ø/Hz	208/3/60	208/3/60
MCA/MOCP (AMPS)	76.5/90	42/45
ENERGY PERFORMANCE		
EER	12.6	14.3
IEER	19.3	-
NOTES: 1. PROVIDE THE FOLLOWING OPTIONS FOR ALL UNITS: <ul style="list-style-type: none">HIGH STATIC DRIVE MOTOR. COORDINATE LEFT/RIGHT HAND FAN DRIVE IN FIELD.100% MODULATING ECONOMIZER WITH DIFFERENTIAL ENTHALPY CONTROL AND ECONOMIZER HOOD.FURNISH EXTRA DRIVE BELT AND EXTRA FILTER SET FOR EACH UNIT.UNIT SHALL BE MOUNTED ON VIBRATION ISOLATION ROOF CURB. HEIGHT OF CURB IS TO BE COORDINATED WITH FINAL FINISHED ROOF SURFACE, INCLUDING DEVIATIONS DUE TO CRICKETS, ROOF DRAINS, ETC. LOWER PORTION OF VIBRATION CURB SHALL EXTEND 12" MINIMUM ABOVE FINISHED ROOF SURFACE. PROVIDE BLOCKING OR SIMILAR AS NECESSARY. MASON INDUSTRIES TYPE RSC OR EQUIVALENT.PROVIDE 4" FIELD INSTALLED FILTER SECTION WITH HINGED ACCESS DOOR AND PROVIDE MERV 10 FILTERS. 2. PROVIDE THE FOLLOWING MOTOR CONTROL OPTIONS FOR ALL UNITS: <ul style="list-style-type: none">UNITARY CONTROLLER BY AUTOMATIC TEMPERATURE CONTROLS MANUFACTURER, COMPATIBLE WITH THE BUILDING AUTOMATION SYSTEM.ALL MOTORS 1 HP OR GREATER SHALL BE PREMIUM EFFICIENCY. ALL MOTORS FURNISHED WITH VARIABLE FREQUENCY DRIVES SHALL BE INVERTER DUTY RATED & APPROVED FOR VARIABLE SPEED AND TORQUE APPLICATIONS.SINGLE POINT EXTERNAL POWER CONNECTION AT UNIT. UNIT-MOUNTED DISCONNECT SWITCH, AND FACTORY INSTALLED MOTOR STARTERS. VAV UNITS SHALL HAVE FACTORY MOUNTED VFD'S WITH H-Q-A. 3. CONTRACTOR SHALL HIRE THE MANUFACTURER'S INSTALLATION TECHNICIAN FOR INSTALLATION AND STARTUP. PROVIDE STARTUP REPORTS TO THE ENGINEER FOR REVIEW AND APPROVAL.		

EQUIPMENT NOTES

STEAM COIL (SC-1) - SHALL BE SIMILAR TO SUPER RADIATOR COILS MODEL 40X24-1R-0.625/120. UNIT SHALL BE 40X24 AND CAPABLE OF 180MBH HEATING CAPACITY WITH A STEAM PRESSURE OF 5PSI AND 0.13 WC AIR PRESSURE DROP ACROSS THE COIL WITH 5,300 CFM. TUBE MATERIAL SHALL BE COPPER AND FIN MATERIAL SHALL BE ALUMINUM. COORDINATE RIGHT / LEFT HAND COIL CONNECTION IN THE FIELD. REFER TO DETAIL ON M702 FOR PIPING.

ADD ALTERNATE NOTES

ADD ALTERNATE #1
THE CONTRACTOR SHALL PROVIDE AN ADD ALTERNATE PRICE FOR THE FULL INSTALLATION OF THE FOLLOWING SYSTEMS INCLUDING ALL RELATED INDOOR HEAT PUMP UNITS, REFRIGERANT AND CONDENSATE PIPING, DUCTWORK AND ACCESSORIES, REGISTERS, POWER, FIRE ALARM AND CONTROLS & ANY & ALL DEMOLITION & PATCHING. COORDINATE WITH ARCHITECTURAL AND ELECTRICAL PLANS.

- DOAS UNIT #3, #4, #5 AND ASSOCIATED ACCUs #6, #7, #8
- VRF SYSTEMS ACCUs #2 & #3 AND ALL ASSOCIATED INDOOR HEAT PUMP UNITS

ADD ALTERNATE #2
THE CONTRACTOR SHALL PROVIDE AN ADD ALTERNATE PRICE FOR THE FULL INSTALLATION OF THE FOLLOWING SYSTEMS INCLUDING ALL RELATED INDOOR HEAT PUMP UNITS, REFRIGERANT AND CONDENSATE PIPING, DUCTWORK AND ACCESSORIES, REGISTERS, POWER, FIRE ALARM AND CONTROLS & ANY & ALL DEMOLITION & PATCHING. COORDINATE WITH ARCHITECTURAL AND ELECTRICAL PLANS.

- DOAS UNIT #1 & #2 AND ASSOCIATED ACCUs #4 & #5
- VRF SYSTEM ACCU #1 AND ALL ASSOCIATED INDOOR HEAT PUMP UNITS

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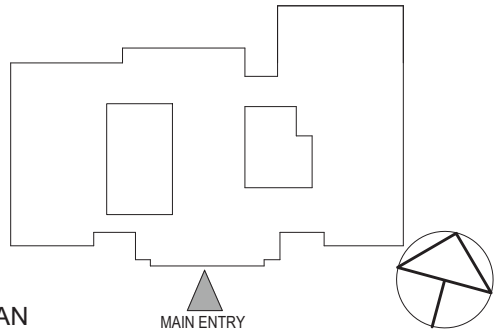


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CONSTRUCTION
DOCUMENTS



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1	03/31/2022	ISSUED FOR BID
No.	Date	Issue

Sheet Title

SCHEDULES

Job No.	Date
NKGD0239.00	09/10/2021
Scale	Drawn / Checked
AS NOTED	NW / RS

Sheet Number

M602