MULTI-ZONE ROOFTOP UNIT SCHEDULE (MURPHY)

GENERAL																				
EQUIP. TAG	LOCATION	MANUFACTURER	MODEL	TYPE OF SYSTEM	NO. OF ZONES	EER	TYPE OF UNIT	PHYSICAL CHARACTERISTICS DIMENSIONS (IN.) L	W	H	WEIGHT (LBS.)	CFM	MIN. O.A. %	ESP/ TSP (IN.)	ZONE	MANUF.	INDOOR MODEL	OUTDOOR MODEL	SUPPLY CFM	O.A. CFM
RTU-1	ROOF	CME	PMZ3-30YG42-XX	MULTI ZONE	9	11.2	PACKAGED DOWN DISCH. ROOFTOP	221	94	99	6608	9,500	25	1.0	1	LENOX	EL297UH090	ML18XC2-024	1500	120
															2-1 2-2	LENOX	EL297UH090	ML18XC2-060	1500 500	375 125
															3	LENOX	EL297UH090	ML18XC2-048	1500	375
															4	LENOX	EL297UH090	ML18XC2-048	1500	375
															5	LENOX	EL297UH090	ML18XC2-048	1500	375
															6	LENOX	EL297UH090	ML18XC2-048	1500	
															7	LENOX	EL297UH090	ML18XC2-048	1500	375
															8	LENOX	EL297UH090	ML18XC2-048	1500	

EQUIP. TAG	GAS HEATING SECTION INPUT CAPACITY (BTUH)	OUTPUT CAPACITY (BTUH)	STAGES	EAT (°F)	LAT (°F)	DX COOLING SECTION (R-410A) COMPR. QTY.	TOTAL CAPACITY (BTUH)	SENSIBLE CAPACITY (BTUH)	OAT (DB°F)	EAT (DB°F)	EAT (WB°F)	CONDENSER FAN QTY./ DIA.	MOTOR RPM	MOTOR HP	FILTERS SIZE (NO.) (IN x IN)	FILTERS TYPE	ELECTRICAL DATA MINIMUM CIRCUIT AMPS	MOCP	PHASE	VOLTS	NOTES
RTU-1	528,000/ 342,000	516,000/ 336,000	2	50	89.6	6	305.0	232.0	95	80.0	67.0	6	825	1/3	16x25	2" PLEATED MERV 14	146	150	3	208	1-17

NOTES:
1. OTHER ACCEPTABLE MANUFACTURERS: NONE.
2. R454B EVAPORATOR COIL TO BE FULL FACE INTERTWINED. PROVIDE 16 GA. STAINLESS STEEL COIL CASING AND PITCHED GALVANIZED STEEL DRAIN PAN.
3. VERIFY FILTER SIZES WITH EQUIPMENT MANUFACTURE.
4. PROVIDE PREMIUM EFFICIENCY TOTALLY ENCLOSED FAN MOTORS.
5. PROVIDE TUBULAR POWER VENTED STYLE HEATER WITH ALUMINIZED STEEL HEAT EXCHANGER MODULATING GAS CONTROLS. EXHAUST STACKS SHALL BE A MINIMUM OF 3'-0" ABOVE ROOF LINE AND SELF SUPPORTING.
6. PROVIDE UNIT MOUNTED CONTROLLER TO BE INTERFACED WITH THE EXISTING INTELI-BUILDING BUILDING AUTOMATION SYSTEM. REFER TO SPECIFICATIONS.
7. RTU MANUFACTURER AND THE MECHANICAL CONTRACTOR SHALL FIELD VERIFY THE EXACT SUPPLY AND RETURN OPENING LOCATIONS AND ZONE DAMPER SIZES AND ARRANGEMENT PRIOR TO FABRICATION OF THE ROOFTOP UNIT.
8. SEE ZONE AIR DISTRIBUTION SCHEDULES ON DRAWING HV2.1 FOR ESTIMATED ROOFTOP UNIT TOTAL CFMs. CONTRACTOR AND EQUIPMENT MANUFACTURE TO VERIFY EXISTING ZONE AIR FLOW RATES PRIOR TO FABRICATION OF THE ROOFTOP UNIT.
9. EQUIPMENT MANUFACTURER TO PROVIDE 120V GFI CONVENIENCE OUTLET AND INTERIOR LIGHTING.
10. PROVIDE LOW LEAKAGE OUTSIDE AIR DAMPER.
11. PROVIDE 100% ENTHALPY ECONOMIZER WITH MODULATING POWER EXHAUST FAN. CO2 DEMAND CONTROL VENTILATION SENSOR FOR CONTRACTOR INSTALLATION AND WIRING.
12. PROVIDE FIVE YEAR COMPRESSOR AND TEN YEAR HEAT EXCHANGER PARTS WARRANTY. PROVIDE MANUFACTURER'S STARTUP SERVICE.
13. SMOKE DETECTORS SHALL BE INSTALLED IN THE RETURN AIR DUCT OR PLENUM UPSTREAM OF ANY FILTERS, EXHAUST AIR CONNECTIONS, OUTDOOR AIR CONNECTIONS, OR DECONTAMINATION EQUIPMENT AND APPLIANCES.
14. ALL UNITS SHALL COMPLY WITH ASHRAE 90.1, 2024 INTERNATIONAL MECHANICAL CODE AND 2021 INTERNATIONAL ENERGY CONSERVATION CODE.
15. ROOFTOP UNITS SHALL BE STARTED AT A LOW SPEED AND GRADUALLY RAMPED UP TO THE REQUIRED CFM TO AVOID DAMAGE TO THE EXISTING FIBERGLASS DUCTWORK. THE TEST AND BALANCE CONTRACTOR SHALL ASSIST THE MANUFACTURER'S START-UP TECHNICIAN.
16. COLOR SHALL BE DETERMINED BY OWNER (POLAR WHITE).
17. BASE: PROVIDE MANUFACTURES INSULATED CURB EXTENSION MINIMUM HEIGHT SO BASE OF UNIT IS 24" ABOVE ROOF MEMBRANE. PROVIDE CURB DIVIDER TO ISOLATE RETURN AIR PLENUM. CONTRACTOR TO FILL VOID BETWEEN BOTTOM OF UNIT AND ROOF DECK PER DETAIL ELSEWHERE.

DIFFUSER, GRILLE AND REGISTER SCHEDULE

EQUIPMENT TAG	MANUFACTURER	MODEL	TYPE	NOMINAL FACE SIZE	MATERIAL	MAX. N.C.	NOTES
A	TITUS	TDBI-80	LINEAR INSULATED BOOT	48" WIDE	STEEL	30	1,2,3,4
B	TITUS	OMNI	SQUARE PANEL FACE	24"x24"	STEEL	30	1,2

SCHEDULE NOTES:
1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS.
2. WHITE BAKED ENAMEL FINISH.
3. COORDINATE BORDER TYPE WITH CEILING.
4. (3) - 1 1/2" WIDE SLOTS

FLOOR PLAN TAG LEGEND:

'S'=SUPPLY
'R'=RETURN/RELIEF
'E'=EXHAUST
EQUIPMENT TAG
AIR FLOW (CFM)
NECK SIZE (IN.)

HOT WATER BOILER SCHEDULE

EQUIPMENT TAG	BUILDING LOCATION	MANUFACTURER	MODEL	TYPE	OPERATING PRESSURE PRESSURE	FIRING INPUT INPUT	MIN. OUTPUT (MBH)	MAX. EFF. (%)	WATERSIDE EWT(°F)	LWT(°F)	GPM	MAX. PD (IN.)	VENT DIA. (IN.)	C.A. DIA. (IN.)	GAS VALVE ASSEMBLY ENT. PRESS.	RATING	BURNER MANUFACTURER	MODEL	TYPE	MODULATION	LENGTH (IN.)	FLA	PHASE	VOLT	NOTES
HWB-1	MIDDLE SCHOOL MECH. RM. 15	FULTON	ENDURA EXE1500	FULL CONDENSING	75	1500	1350	97.6	140	180	68.0	2.8	6	8	2.0 PSI	CSD-1	FULTON	-	GAS FORCED DRAFT	FULL MOD. 15:1	-	6.0	1	120	1-6,8-10
HWB-2	MIDDLE SCHOOL MECH. RM. 15	FULTON	ENDURA EXE1500	FULL CONDENSING	75	1500	1350	97.6	140	180	68.0	2.8	6	8	2.0 PSI	CSD-1	FULTON	-	GAS FORCED DRAFT	FULL MOD. 15:1	-	6.0	1	120	1-10

NOTES:
1. SEE SPECIFICATION FOR ALTERNATE MANUFACTURERS.
2. BURNER AND CONTROLS TO MEET ASME CSD-1.
3. PROVIDE PH NEUTRALIZATION BASIN.
4. INLET GAS PRESSURE LISTED IS AT INLET OF GAS VALVE TRAIN. SIZE TRAIN ACCORDINGLY. FIELD VERIFY.
5. PROVIDE FOR SINGLE POINT ELECTRICAL CONNECTION.
6. PRESSURE-TEMPERATURE GUAGE, BOILER DRAIN VALVE, ASME RELIEF VALVE.
7. PROVIDE ONLY IF ALTERNATE No. 1 IS ACCEPTED.
8. INTERNAL BOILER CONTROLS TO CASCADE BOILER OPERATION, MODULATE FIRING AND FLOW RATES TO MAXIMIZE EFFICIENCY.
9. THE BOILER SHALL HAVE A RELIEF VALVE WITH A THERMAL CAPACITY AT LEAST EQUAL TO THE HEAT INPUT OF THE BOILER. THE RELIEF VALVE DISCHARGE PIPE SHALL TERMINATE WITHIN 6" OF THE FLOOR.
10. CONTRACTOR TO FIELD VERIFY SIZE OF EXISTING OPENINGS FOR ENTRANCE OF BOILER INTO BOILER ROOM. BOILER SHALL BE ORDERED KNOCKED DOWN AS REQUIRED AND REASSEMBLED ON SITE PER MANUFACTURER'S RECOMMENDATIONS.

PUMP TRIPLE DUTY VALVE SCHEDULE

EQUIPMENT TAG	TRIPLE DUTY VALVE TYPE	SIZE	P.D. (FT.)	NOTES
HWP-1	STRAIGHT	3.0	3.07	1
HWP-2	STRAIGHT	3.0	3.07	1,2

NOTES:
1. PROVIDE TRIPLE DUTY VALVE FROM SAME MANUFACTURER AS PUMP.
2. PROVIDE ONLY IF ALTERNATE No.1 IS ACCEPTED.

BCP BOILER CIRC. PUMP

PUMP SCHEDULE

EQUIPMENT TAG	BUILDING LOCATION	SERVICE	MANUFACTURER	MODEL	TYPE	GPM	HEAD (FT.)	IMP. DIA. (IN.)	RPM	MINIMUM EFFICIENCY	MOTOR HP	PHASE	VOLT	NOTES
HWP-1	MIDDLE SCHOOL MECH. RM. 15	HWB-1	BELL AND GOSSETT	SERIES E90 2AAB	INLINE	80.0	20.0	4.625	1750	70.1	3/4	3	460	1,2,3
HWP-2	MIDDLE SCHOOL MECH. RM. 15	HWB-2	BELL AND GOSSETT	SERIES E90 2AAB	INLINE	80.0	13.4	4.625	1750	70.1	3/4	3	460	1,2,3,4

NOTES:
1. PREMIUM EFFICIENT MOTOR FOR VFD OPERATION.
2. CONTROLS CONTRACTOR TO PROVIDE WIRE AND INTEGRATION PROGRAMMING/GRAPHICS FOR CONTROL AND MONITORING.
3. INLINE PUMP WITH INTEGRAL VARIABLE SPEED DRIVE. BOILER TO VARY SPEED OF PUMP WITH FIRING RATE TO MAXIMIZE EFFICIENCY.
4. PROVIDE ONLY IF ALTERNATE No.1 IS ACCEPTED.

BCP BOILER CIRCULATING PUMP

BI-POLAR IONIZATION SCHEDULE

EQUIPMENT TAG	SCHOOL LOCATION	AREA SERVED	MANUFACTURER GPS MODEL	PLASMA-AIR MODEL	CFM	MOTOR WATTS	PH	VOLT	NOTES
BPI-1	MURPHY CLS. RM. 101	CLS. RM. 101	GPS SMART IQ	SIAQ1-DIST1S	250	200	1	120	1,2,3,4,5,6
BPI-2	MURPHY CLS. RM. 102	CLS. RM. 102	GPS SMART IQ	SIAQ1-DIST1S	250	200	1	120	1,2,3,4,5,6
BPI-3	MURPHY CLS. RM. 103	CLS. RM. 103	GPS SMART IQ	SIAQ1-DIST1S	250	200	1	120	1,2,3,4,5,6
BPI-4	MURPHY CLS. RM. 104	CLS. RM. 104	GPS SMART IQ	SIAQ1-DIST1S	250	200	1	120	1,2,3,4,5,6
BPI-5	MURPHY CLS. RM. 301	CLS. RM. 301	GPS SMART IQ	SIAQ1-DIST1S	250	200	1	120	1,2,3,4,5,6
BPI-6	MURPHY CLS. RM. 302	CLS. RM. 302	GPS SMART IQ	SIAQ1-DIST1S	250	200	1	120	1,2,3,4,5,6
BPI-7	MURPHY CLS. RM. 303	CLS. RM. 303	GPS SMART IQ	SIAQ1-DIST1S	250	200	1	120	1,2,3,4,5,6
BPI-8	MURPHY CLS. RM. 304	CLS. RM. 304	GPS SMART IQ	SIAQ1-DIST1S	250	200	1	120	1,2,3,4,5,6

NOTES:
1. OTHER ACCEPTABLE MANUFACTURERS: GLOBAL PLASMA SOLUTIONS (GPS).
2. UNIT SHALL MEET ASHRAE 62.1IAQP
3. TESTING STANDARD FOR OZONE FREE OPERATION.
4. PROVIDE 1 YR PARTS AND LABOR WARRANTY.
5. PROVIDE (1) 2" MERV 14 FILTER AND (1) 2" MOLECULAR FILTER.
6. INTEGRAL EC BLOWER.
7. NOMINAL 35 dB(A).
8. EXTERNAL FILTER CHANGE INDICATOR.
9. MEETS ASHRAE STANDARD 62.1 2019 AND 2022 FOR INDOOR AIR QUALITY.
10. PROVIDE (1) ION COUNTER FOR SCHOOL DISTRICT.
11. CONTRACTOR TO COORDINATE/VERIFY FIELD SPACE AVAILABLE FOR INSTALLATION PRIOR TO PURCHASE.

OWNER REVIEW
NOT FOR CONSTRUCTION
09-18-2025

Revisions:
ISSUED FOR BID —

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HVAC SCHEDULES

2025 HVAC UPGRADES
Murphy Elementary School, 220 Greenwood Dr, Round Lake Park, IL 60073
Round Lake Middle School, 2000 N Lotus Dr, Round Lake Heights, IL 60073
ROUND LAKE CUSD 116
510 N. CEDAR LAKE ROAD
ROUND LAKE, IL 60073

Issue Date: 18 SEP 2025
Drawn By: CS2
Job Number: 886-S-1

HV4.1

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