

DEDICATED OUTDOOR AIR SYSTEM WITH ENERGY RECOVERY SCHEDULE

Table with columns: BASIS OF DESIGN, SUPPLY FAN, EXHAUST FAN, COOLING COIL, HEATING COIL. Includes TAG, MODEL, LOCATION, SERVICE, CFM, ESP, FAN TYPE, QTY, MOTOR RPM, HP EACH, BHP EACH, CAPACITY, SENSIBLE CAPACITY, EAT DB/WB, LAT DB/WB, APD, FLUID TYPE, EWT, LWT, GPM, WPD, ROWS, MAX FACE VELOCITY, TOTAL CAPACITY, EAT (F), LAT (F), APD (IN WG), FLUID TYPE, EWT, LWT, GPM, WPD, ROWS.

DEDICATED OUTDOOR AIR SYSTEM WITH ENERGY RECOVERY SCHEDULE CONTINUED

Table with columns: ENERGY RECOVERY - SUMMER, ENERGY RECOVERY - WINTER, FILTRATION, ELECTRICAL DATA, MAXIMUM HEIGHT, OPERATING WEIGHT, NOTES. Includes TAG, ENERGY RECOVERY TYPE, OA EAT DB/WB, SA LAT DB/WB, RA EAT DB/WB, EA LAT DB/WB, TOTAL EFFICIENCY, SUPPLY PRE-FILTER / FINAL FILTER, EXHAUST FILTER, V, PH, Hz, FLA, OPERATING WEIGHT (LBS), NOTES.

NOTES:

- 1. PROVIDE PACKAGED DEDICATED OUTSIDE AIR HANDLING UNIT, WITH CHILLED WATER COOLING COIL, HOT WATER HEATING COIL.
2. PROVIDE LOW LEAKAGE DAMPERS, EACH WITH A DEDICATED/INDEPENDENT MOTORIZED DAMPER ACTUATOR(S).
3. PROVIDE 4-INCH DOUBLE-WALL CONSTRUCTION.
4. PROVIDE "NO THRU METAL" THERMAL BREAK CONSTRUCTION IN WALLS CEILING & BASE. GASKETED THERMAL BREAK NOT ACCEPTABLE.
5. PROVIDE TUBULAR STEEL BASE, C-CHANNEL BASE NOT ACCEPTABLE.
6. PROVIDE 0.025" TUBE THICKNESS WITH BRAZED RETURN BENDS. HAIRPIN RETURN BENDS NOT ACCEPTABLE.
7. PROVIDE MINIMUM TYPE 304 STAINLESS STEEL COIL CASINGS AND STAINLESS STEEL DRAIN PAN.
8. PROVIDE AMCA CERTIFIED FAN ARRAY SIZED FOR N+1 REDUNDANCY WITH INTEGRAL DEDICATED AIR FLOW MEASURING STATION AND DEDICATED VFD FOR EACH FAN.
9. PROVIDE R-I-S FAN ISOLATION. FANS MUST BE DYNAMICALLY BALANCED TO BV-5 SPEC.
10. PROVIDE INTEGRAL SILENCERS IN FAN SECTION.
11. PROVIDE INDIVIDUAL FANS WITH AUTOMATIC BACKDRAFT DAMPERS IN THE EVENT OF FAN FAILURE.
12. PROVIDE CERAMIC BEARING MOTORS. STEEL BEARING MOTORS WITH SHAFT GROUNDING NOT ACCEPTABLE.
13. PROVIDE INTEGRAL PIPING VESTIBULE.
14. PROVIDE OA DAMPER WITH INTEGRAL AFMS. AFMS MUST HAVE MERV 8 FILTRATION UPSTREAM.
15. COORDINATE DUCT ROUTING AND CONNECTIONS WITH FIELD CONDITIONS.
16. PROVIDE SINGLE POINT POWER CONNECTION WITH FACTORY MOUNTED AND WIRED NON-FUSED DISCONNECT SWITCH.
17. PROVIDE FACTORY MOUNTED LOW VOLTAGE CONTROL TRANSFORMER.
18. PROVIDE KNOCKDOWN CONSTRUCTION FOR BUILDING INGRESS.
19. DOAS ROOF MUST SLOPE A MINIMUM OF 1/4 IN PER FT AND OVERHANG WALL PANELS BY A MINIMUM OF 2 INCHES.
20. FANS MUST BE SIZED BASED ON A MINIMUM FILTER LOADING OF TWO TIMES THE INITIAL (CLEAN) CONDITION AND THEN ROUNDED UP TO THE NEAREST .05 IN WC PER FILTER BANK.
21. OA CFM SCHEDULED INCLUDES A 10% ALLOWANCE FOR LEAKAGE AND FUTURE GROWTH. TAB CONTRACTOR MUST BALANCE SYSTEM TO CFMS SHOWN ON FLOOR PLANS.
22. PROVIDE NAS VENTROL AIR HANDLING EQUIPMENT PER EXISTING WEST POINT JUSTIFICATION AND AUTHORIZATION (J&A).
23. PROVIDE MANUFACTURER'S FACTORY APPLIED COATING SUITABLE FOR A CORROSIVE BRACKISH ENVIRONMENT ON EQUIPMENT CASING AND COILS.

MAKEUP AIR UNIT SCHEDULE

Table with columns: SUPPLY FAN, COOLING COIL, HEATING COIL, ELECTRICAL DATA, OPERATING WEIGHT, NOTES. Includes TAG, LOCATION, SERVICE, CFM, ESP, FAN TYPE, QTY, MOTOR RPM, HP EA, TOTAL BHP, CAPACITY, SENSIBLE CAPACITY, EAT DB/WB, LAT DB/WB, APD, FLUID TYPE, EWT, LWT, GPM, WPD, ROWS, MAX FACE VELOCITY, TOTAL CAPACITY, EAT (F), LAT (F), APD (IN WG), FLUID TYPE, EWT, LWT, GPM, WPD, ROWS, SUPPLY PRE-FILTER / FINAL FILTER, V, PH, Hz, MCA, MOCP, OPERATING WEIGHT (LBS), NOTES.

NOTES:

- 1. PROVIDE KNOCKDOWN CONSTRUCTION (FOR BUILDING INGRESS), VARIABLE VOLUME DEDICATED MAKEUP AIR HANDLING UNIT, WITH CHILLED WATER COOLING, HOT WATER HEATING AND ECONOMIZER CONTROL.
2. PROVIDE MANUFACTURER'S FACTORY APPLIED COATING SUITABLE FOR A CORROSIVE BRACKISH ENVIRONMENT ON EQUIPMENT CASING AND COILS.
3. PROVIDE LOW LEAKAGE DAMPERS IN AIR MIXING SECTIONS, EACH WITH A DEDICATED/INDEPENDENT MOTORIZED DAMPER ACTUATOR(S).
4. COORDINATE DUCT ROUTING AND CONNECTIONS WITH FIELD CONDITIONS.
5. PROVIDE SINGLE POINT POWER CONNECTION WITH FACTORY MOUNTED AND WIRED NON-FUSED DISCONNECT SWITCH NEMA 4x RATED SUITABLE FOR OUTSIDE USE.
6. PROVIDE FACTORY MOUNTED LOW VOLTAGE CONTROL TRANSFORMER AND FACTORY CONFIGURED VFD FOR FIELD INSTALLATION ONTO DOAS CASING; DOAS EQUIPMENT MUST BE FACTORY WIRED.
7. PROVIDE PREMIUM EFFICIENCY, INVERTER DUTY RATED MOTORS SUITABLE FOR USE WITH VFDs. EACH FAN MOTOR MUST HAVE A DEDICATED VFD.
8. WHERE THERE ARE MULTIPLE FANS BEING USED IN A FAN ARRAY, A DEDICATED DISCHARGE DAMPER MUST BE PROVIDED AT EACH FAN TO PREVENT RECIRCULATION OF AIR.
9. PROVIDE ACCESSORIES AND APPURTENANCES FOR INSTALLING DOAS AIR HANDLING UNIT.
10. PROVIDE AIR FLOW MEASURING STATION AT OUTDOOR AIR. AIR FLOW MEASURING STATION MUST BE PROTECTED UPSTREAM BY MERV 8 FILTER.
11. DOAS ROOF MUST SLOPE A MINIMUM OF 1/4 IN PER FT AND OVERHANG WALL PANELS BY A MINIMUM OF 2 INCHES.
12. FANS MUST BE SIZED BASED ON A MINIMUM FILTER LOADING OF TWO TIMES THE INITIAL (CLEAN) CONDITION AND THEN ROUNDED UP TO THE NEAREST .05 IN WC PER FILTER BANK.
13. OUTDOOR AIR DAMPERS MUST BE LOW LEAKAGE DAMPERS WITH A 3 CFM/SF LEAKAGE RATE OR LESS.
14. OA CFM SCHEDULED INCLUDES A 10% ALLOWANCE FOR LEAKAGE AND FUTURE GROWTH. TAB CONTRACTOR MUST BALANCE SYSTEM TO CFMS SHOWN ON FLOOR PLANS.

PUMP SCHEDULE

Table with columns: TAG, LOCATION, SERVICE, CONFIGURATION, FLUID TYPE, WATER TEMPERATURE, GPM, PUMP HEAD, EFF (%), SUCTION SIZE, DISCHARGE SIZE, ELECTRICAL DATA, NOTES. Includes TAG, LOCATION, SERVICE, CONFIGURATION, FLUID TYPE, WATER TEMPERATURE, GPM, PUMP HEAD (FT WC), EFF (%), SUCTION SIZE (INCH), DISCHARGE SIZE (INCH), HP, BHP, V, PH, Hz, NOTES.

NOTES:

- 1. PROVIDE PREMIUM EFFICIENCY MOTORS WITH THERMAL OVERLOAD PROTECTION.
2. PROVIDE STANDARD EFFICIENCY MOTORS WITH THERMAL OVERLOAD PROTECTION.
3. MOTORS MUST BE NON-OVERLOADING THROUGHOUT ENTIRE PUMP CURVE.
4. PROVIDE VFD WITH INVERTER DUTY RATED MOTOR. VFDs AND MOTOR STARTERS MUST BE PROVIDED BY ELECTRICAL. PROVIDE VFDs IN LINE-OF-SIGHT TO CONNECTED PUMP.
5. PROVIDE SHAFT GROUNDING RINGS.
6. PROVIDE EC MOTORS WITH THERMAL OVERLOAD PROTECTION.

HORIZONTAL SHELL & TUBE STEAM TO HOT WATER HEAT EXCHANGER SCHEDULE

Table with columns: TAG, LOCATION, SERVICE, CAPACITY, SHELL SIDE, TUBE SIDE, NOTES. Includes TAG, LOCATION, SERVICE, CAPACITY (MBH), STEAM PRESSURE (PSIG), STEAM MASS FLOW (LBS/HR), MAX TEMP (F), EWT (F), LWT (F), WATER FLOW RATE (GPM), MAX PRESSURE DROP (FT WC), FOULING FACTOR, NOTES.

NOTES:

- 1. PROVIDE SHELL AND TUBE HEAT EXCHANGER DESIGNED, CONSTRUCTED, TESTED, AND STAMPED IN ACCORDANCE WITH SECTION VIII, DIVISION 1 OF THE ASME PRESSURE CODE.
2. PROVIDE WITH FABRICATED CARBON STEEL SHELL; CAST IRON BONNET; STEEL TIE-RODS AND SPACERS; CAST IRON/CARBON STEEL FEET AND BOLTING; COPPER TUBE BUNDLE.
3. COPPER TUBE BUNDLE MUST BE REMOVABLE FOR CLEANING, MAINTENANCE AND REPLACEMENT.
4. PROVIDE ISOLATION BUTTERFLY VALVES ON ALL INLET AND OUTLET WATER CONNECTIONS AND STEAM CONNECTIONS.
5. PROVIDE GASKETS MADE FROM MATERIAL SUITABLE FOR OPERATING TEMPERATURES AND FLUIDS/STEAM USED.
6. FIELD INSULATION FOR ALL HEAT EXCHANGER SURFACES AND PIPING PER MANUFACTURER'S REQUIREMENTS AND SPECIFICATIONS.

CONDENSATE RETURN UNIT SCHEDULE

Table with columns: TAG, LOCATION, SERVICE, CONFIGURATION, GPM, DISCHARGE PRESSURE, RATED TEMP, CONNECTIONS, ELECTRICAL DATA, CAPACITY, NOTES. Includes TAG, LOCATION, SERVICE, CONFIGURATION, GPM, DISCHARGE PRESSURE (PSIG), RATED TEMP (F), INLET (INCHES), OUTLET (INCHES), VENT (INCHES), MOTOR QTY, HP EACH, V, PH, Hz, CAPACITY (GAL), NOTES.

NOTES:

- 1. PROVIDE DUPLEX STEAM RETURN PUMPING PACKAGED UNIT WITH INTEGRAL PUMPS, RECEIVER TANK AND MECHANICAL ALTERNATOR PANEL.
2. PROVIDE FABRICATED CAST IRON CONDENSATE RECEIVER TANK DESIGNED, CONSTRUCTION, TESTED, AND STAMPED IN ACCORDANCE WITH SECTION VIII, DIVISION 1 OF THE ASME PRESSURE CODE.
3. PROVIDE INTEGRAL CENTRIFUGAL PUMPS WITH OPEN DRIP PROOF MOTORS.
4. PROVIDE FACTORY MECHANICAL ALTERNATOR WITH NEMA 3 PANEL CAPABLE OF SEQUENCING OF DUPLEX PUMPS AND STAND-BY OF SECOND PUMP ON HIGH LEVEL CONTROLLER FULLY FACTORY WIRED AND CONFIGURED.
5. PROVIDE HEAVY DUTY MECHANICAL FLOAT SWITCHES THAT EXTERNALLY ADJUSTABLE.
6. PROVIDE INTEGRAL WATER LEVEL GAUGE, SHUTOFF VALVE, DIAL THERMOMETER, INLET BASKET STRAINER, DISCHARGE PRESSURE GAUGES AND ISOLATION BUTTERFLY VALVES ON ALL INLET AND OUTLET WATER CONNECTIONS AND STEAM CONNECTIONS.
7. PROVIDE GASKETS MADE FROM MATERIAL SUITABLE FOR OPERATING TEMPERATURES AND FLUID/STEAM USED.

EXHAUST FAN SCHEDULE

Table with columns: TAG, SERVICE, CONFIGURATION, AIRFLOW, ESP, MOTOR RPM, BHP, HP, V, PH, HZ, WEIGHT, NOTES. Includes TAG, SERVICE, CONFIGURATION, AIRFLOW (CFM), ESP (IN WG), MOTOR RPM, BHP, HP, V, PH, HZ, WEIGHT (LBS), NOTES.

NOTES:

- 1. PROVIDE WITH FACTORY MOUNTED AND WIRED NON-FUSED DISCONNECT.
2. PROVIDE PREMIUM EFFICIENCY MOTOR, WITH THERMAL OVERLOAD PROTECTION.
3. PROVIDE FACTORY MOUNTED AND WIRED LOW-LEAKAGE MOTORIZED ISOLATION DAMPERS, 120 VAC WITH POSITION INDICATION.
4. PROVIDE HOUSED SPRING VIBRATION ISOLATORS TO SUPPORT FAN FROM BUILDING STRUCTURE.
5. PROVIDE MANUFACTURER'S 18" HIGH ROOF CURB WITH HINGED CURB CAP, CURB SEAL AND DAMPER TRAY.
6. PROVIDE BELT DRIVEN EXPLOSION PROOF MOTOR OUTSIDE OF AIRSTREAM WITH SPARK-PROOF FAN IMPELLER.
7. PROVIDE EC MOTOR WITH HAND-OFF-AUTO (HOA) CONTROLLER.
8. PROVIDE MANUFACTURER'S FACTORY APPLIED COATING SUITABLE FOR A CORROSIVE BRACKISH ENVIRONMENT ON EQUIPMENT CASING AND COILS.

AIR SEPARATOR SCHEDULE

Table with columns: TAG, SERVICE, LOCATION, DESIGN FLOW, MAX FLOW, CONNECTION SIZE, PRESSURE DROP, FLOODED WEIGHT, NOTES. Includes TAG, SERVICE, LOCATION, DESIGN FLOW (GPM), MAX FLOW (GPM), CONNECTION SIZE (INCHES), PRESSURE DROP (FT WC), FLOODED WEIGHT (LBS), NOTES.

NOTES:

- 1. PROVIDE CENTRIFUGAL AIR SEPARATOR WITH CONNECTIONS TO MATCH PIPING SYSTEM.
2. PROVIDE WITHOUT STRAINER.
3. PROVIDE ISOLATION BUTTERFLY VALVES ON INLET AND OUTLET.
4. PROVIDE AUTOMATIC AIR VENT.
5. PROVIDE BLOW DOWN VALVE ON BOTTOM WITH CAP SECURED WITH CHAIN.
6. MAINTAIN MANUFACTURER'S CLEARANCES FOR MAINTENANCE ACCESS.

EXPANSION TANK SCHEDULE

Table with columns: TAG, SERVICE, TYPE, FLUID, ACCEPTANCE VOLUME, TANK VOLUME, FILL PRESSURE, RELIEF VALVE SETTING, DIAMETER, HEIGHT, NOTES. Includes TAG, SERVICE, TYPE, FLUID, ACCEPTANCE VOLUME (GAL), TANK VOLUME (GAL), FILL PRESSURE (PSIG), RELIEF VALVE SETTING (PSIG), DIAMETER (INCHES), HEIGHT (INCHES), NOTES.

NOTES:

- 1. PROVIDE VERTICAL EXPANSION TANK, WITH HEAVY DUTY BUTYL/EPDM DIAPHRAGM/PRE-CHARGED BLADDER, STEEL CONSTRUCTION MEETING ASME STANDARDS.
2. PROVIDE LINE SIZE ISOLATION BALL VALVES ON CONNECTIONS.
3. PROVIDE AUTOMATIC AIR VENT.
4. PROVIDE SYSTEM PRESSURE RELIEF VALVE FOR INSTALLATION IN SYSTEM PIPING.
5. PROVIDE BLOW DOWN VALVE ON BOTTOM WITH CAP SECURED WITH CHAIN.
6. MAINTAIN MANUFACTURER'S CLEARANCES FOR MAINTENANCE ACCESS.
7. ADJUST FILL PRESSURE DURING STARTUP FOR FINAL PIPING SYSTEM CONFIGURATION.

STEAM TRAP SCHEDULE

Table with columns: MARK, LOCATION, SERVICE, TRAP TYPE, CAPACITY, STEAM PRESSURE, DESIGN FLOW, RATED FLOW, INLET SIZE, NOTES. Includes MARK, LOCATION, SERVICE, TRAP TYPE, CAPACITY (LBS/HR), STEAM PRESSURE (PSI), DESIGN FLOW (LBS/HR), RATED FLOW (LBS/HR), INLET SIZE (IN), NOTES.

NOTES:

- 1. PROVIDE NPT THREADED CONNECTIONS.
2. SELECT WITH A MINIMUM 2.0 SAFETY SIZING FACTORY. SELECT WITH LINE SIZE CONNECTION.
3. PROVIDE CAST IRON H-PATTERN FLOAT AND THERMOSTATIC STEAM TRAP WITH STAINLESS STEEL INTERNAL CONSTRUCTION.

STEAM SAFETY RELIEF VALVE SCHEDULE

Table with columns: MARK, LOCATION, SERVING, CAPACITY, PRESSURE SETTING, INLET SIZE, OUTLET SIZE, NOTES. Includes MARK, LOCATION, SERVING, CAPACITY (LBS/HR), PRESSURE SETTING (PSIG), INLET SIZE (IN), OUTLET SIZE (IN), NOTES.

NOTES:

- 1. PROVIDE NPT THREADED CONNECTIONS.
2. SELECT WITH A MINIMUM 2.0 SAFETY SIZING FACTORY. SELECT WITH LINE SIZE CONNECTION.
3. PROVIDE CAST IRON STEAM SAFETY RELIEF VALVE WITH STAINLESS STEEL INTERNAL CONSTRUCTION.



Table with columns: DATE, DESCRIPTION, MARK. Includes 06/16/2023, ISSUED VIA AMENDMENT, 1.

Table with columns: ISSUE DATE, DESIGN BY, DRAWN BY, CHECKED BY, SUBMITTED BY, FILE NUMBER, FILE NAME. Includes 07 MARCH 2023, N. SLEMI, D. VAHARY, D. GORDON, A. JOHNSON, W91ZDS-19-C-0031-H, W91ZDS-19-C-0031-H.

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