



DUCTLESS SPLIT HEAT PUMP SCHEDULE table with columns for INDOOR UNIT MARK, MFG., MODEL NUMBER, DESCRIPTION, AREA SERVED, MAX. AIRFLOW (CFM), SEER, TOTAL COOLING CAPACITY (BTU/HR), TOTAL HEATING CAPACITY (BTU/HR), OUTDOOR UNIT MARK, MFG., MODEL NUMBER, VOLTAGE (PHASE), MCA, MOCP, and REMARKS AND ACCESSORIES.

- REMARKS AND ACCESSORIES: 1. COOLING CAPACITIES BASED ON 95F db/75F wb AMBIENT AIR TEMPERATURE AND 80F db/67F wb INDOOR AIR TEMPERATURE. 2. HEATING CAPACITIES BASED ON 47F db/43F wb AMBIENT AIR TEMPERATURE AND 70F db/60F wb INDOOR AIR TEMPERATURE. 3. PROVIDE OUTDOOR UNIT WITH AT MINIMUM 12" HIGH STRUCTURAL EQUIPMENT STAND SUITABLE FOR ROOF-MOUNTING (MIRQ MODEL HD OR EQUAL). SEE HVAC DETAILS FOR INSTALLATION INSTRUCTIONS. 4. PROVIDE UNIT WITH MINIMUM SIX-YEAR COMPRESSOR WARRANTY. 5. PROVIDE UNIT WITH ONE-YEAR PARTS WARRANTY AND ONE-YEAR LIMITED LABOR WARRANTY. 6. MAINTAIN MINIMUM MANUFACTURER'S RECOMMENDED CLEARANCES. 7. PROVIDE UNIT WITH CONDENSATE DRAIN PUMP THAT IS POWERED BY OUTDOOR UNIT. 8. PROVIDE UNIT WITH DRAIN SENSOR THAT SHUTS DOWN THE INDOOR UNIT ANY TIME A CLOGGED CONDENSATE DRAIN OR THE CONDENSATE PUMP MALFUNCTION IS DETECTED. 9. FURNISH AND INSTALL PRE-CHARGED REFRIGERANT PIPE SETS SIZED AND ROUTED PER THE MANUFACTURER'S RECOMMENDATIONS. 10. PROVIDE UNIT WITH WASHABLE, LONG-LIFE AIR FILTER. 11. PROVIDE A 7-DAY, 24-HOUR PROGRAMMABLE THERMOSTAT WITH LOCKOUT CONTROL. TEMPERATURE CONTROLS CONTRACTOR SHALL ALSO PROVIDE ROOM TEMPERATURE SENSOR IN SPACE TO BE MONITORED BY TEMPERATURE CONTROLS SYSTEM. 12. PROVIDE UNIT WITH LOW AMBIENT KIT CAPABLE OF OPERATION TO 17° F. 13. INDOOR FAN COIL UNIT IU-1 IS ELECTRICALLY POWERED BY OUTDOOR CONDENSING UNIT OU-1. 14. PROVIDE WITH UNIT-MOUNTED NON-FUSED ELECTRICAL DISCONNECT SWITCH WITH SINGLE POINT ELECTRICAL CONNECTION. DAKIN, MITSUBISHI, SANYO OR APPROVED EQUAL.

VENTILATING FAN SCHEDULE table with columns for MARK, MFG., AREA SERVED, MODEL TYPE, APPROX. UNIT WEIGHT (LBS.), MOUNTING, RATED CFM, ESP (IN. H2O), DRIVE, FRPM, MOTOR RPM, dBA, T'STAT, OCC., WATTS, HP, VOLTAGE/PHASE, and REMARKS AND ACCESSORIES.

- REMARKS AND ACCESSORIES: 1. PROVIDE UNIT WITH SOLID-STATE FAN SPEED CONTROL. 2. PROVIDE WITH FACTORY WIRED AND MOUNTED, NON-FUSED ELECTRICAL DISCONNECT SWITCH WITH SINGLE-POINT ELECTRICAL CONNECTION SUITABLE FOR OUTDOOR USE. 3. PROVIDE UNIT WITH THERMAL OVERLOAD PROTECTION. 4. PROVIDE UNIT WITH GRAVITY BACKDRAFT DAMPER. 5. PROVIDE UNIT WITH EXHAUST AIRSTREAM-MOUNTED BIRD SCREEN. 6. PROVIDE UNIT WITH 1/4" HIGH INSULATED ROOF CURB WITH INTEGRAL CANTS, CURB SEAL AND WOOD NAILER. CURB SHALL BE CONSTRUCTED SUITABLE FOR LOW SLOPE ROOF. 7. PROVIDE WITH HINGED CURB KIT WITH CABLES. 8. PROVIDE UNIT WITH FAN MOUNTED ON VIBRATION ISOLATORS. UNIT OPERATION CONTROL: OCC - UNIT SHALL BE ELECTRICALLY INTERLOCKED WITH AND CONTROLLED BY ZONE LIGHT CONTROL. T-STAT - UNIT SHALL BE ELECTRICALLY INTERLOCKED WITH AND CONTROLLED BY ZONE TEMPERATURE SENSOR. UNIT SHALL CLOSE CIRCUIT ON RISE. AEROVENT, COOK, GREENHECK, PENNBARRY, OR APPROVED EQUAL.

DIFFUSER AND GRILLE SCHEDULE table with columns for MARK, MFG., MODEL, SIZE, NECK SIZE, CORE TYPE, NOM. CFM, TYPE OF MOUNTING, THROW (50 FPM), PRESS. DROP (IN. H2O), SOUND RATING (NC), VOLUME DAMPER, and REMARKS AND ACCESSORIES.

- REMARKS AND ACCESSORIES: 1. PROVIDE ALL DIFFUSERS AND GRILLES WITH AT MINIMUM EIGHTEEN (18) MONTH PARTS WARRANTY AND EIGHTEEN (18) MONTH LIMITED LABOR WARRANTY. 2. FURNISH ALL DIFFUSERS AND GRILLES WITH POWDER-COATED FINISH IN COLOR AS SELECTED BY ARCHITECT FROM ALL AVAILABLE OPTIONS. 3. FURNISH ALL DIFFUSERS WITH SQUARE-TO-ROUND NECK TRANSITIONS AS REQUIRED. 4. PROVIDE ALL LINEAR SLOT DIFFUSERS WITH THE FOLLOWING FEATURES: - FACTORY-FABRICATED ENGINEERED PLENUM (PRICE TYPE 21C OR EQUAL) WITH PRE-FINISHED MOUNTING CLIPS. - FACTORY-FABRICATED SECTIONS WITH FACTORY SPLICING PLATES. - FACTORY-FABRICATED MITERED CORNER END PIECES. KRUEGER, TITUS OR APPROVED EQUAL.

OUTDOOR PACKAGED ROOFTOP VAV WITH NATURAL GAS HEAT SCHEDULE table with columns for MARK, MFG., MODEL, SIZE, CONFIGURATION, REFRIGERANT, WEIGHT (LBS.), FAN AND MOTOR DATA, HEATING SECTION, TOTAL COOLING CAPACITY (MBH), SENS. COOLING CAPACITY (MBH), HOT GAS REHEAT CAPACITY (MBH), EER, ELECTRICAL CHAR., and REMARKS AND ACCESSORIES.

- REMARKS AND ACCESSORIES: 1. COOLING CAPACITIES ARE BASED STANDARD AHRI/ASHRAE CONDITIONS ON 95F db / 75F wb AMBIENT AIR, 80F db AND 67F wb ENTERING AIR TEMPERATURE. 2. HEATING CAPACITIES ARE BASED STANDARD AHRI/ASHRAE CONDITIONS ON 0F db AMBIENT AIR, 70F db AND 60F wb ENTERING AIR TEMPERATURE. 3. PROVIDE UNIT WITH INSULATED WALL CONSTRUCTION. 4. PROVIDE UNIT WITH 2" 30% EFFICIENT PLEATED FIBERGLASS FILTERS. 5. PROVIDE UNIT WITH INTERNAL VIBRATION ISOLATORS ON ALL FANS. 6. FURNISH WITH INSULATED VIBRATION ISOLATION ROOF CURB SIMILAR TO MASON INDUSTRIES RCS SERIES OR EQUAL. CURB HEIGHT SHALL BE MINIMUM 16" HEIGHT. CONTRACTOR SHALL COORDINATE CURB HEIGHT WITH ROOF SYSTEM SUCH THAT TOP OF CURB IS AT LEAST 14" ABOVE ROOF. CURB SHALL BE COMPATIBLE WITH THE ROOF SYSTEM AND CONSTRUCTED TO MATCH LOW SLOPE ROOF. 7. PROVIDE UNIT WITH 115V / 1 PH, FACTORY WIRED, POWERED CONVENIENCE OUTLET. 8. PROVIDE UNIT WITH HINGED ACCESS PANELS WITH LOCKABLE HANDLES. 9. PROVIDE UNIT WITH HAIL GUARD. 10. PROVIDE UNIT WITH STAINLESS STEEL OR NON-CORROSIVE POLYMER, DOUBLE SLOPE CONDENSATE DRAIN PAN. 11. PROVIDE UNIT WITH MINIMUM 2-STAGE COOLING. 12. COMPRESSORS SHALL HAVE EXTENDED 4 YR. WARRANTIES. 13. PROVIDE UNIT WITH THERMAL EXPANSION VALVE (TXV) ON EACH REFRIGERANT CIRCUIT. 14. FURNISH UNIT WITH LOW PRESSURE SWITCH, HIGH PRESSURE SWITCH, CRANKCASE HEATERS, DRIERS, AND FREEZESTAT. 15. PROVIDE UNIT WITH MODULATING HOT GAS REHEAT. 16. PROVIDE UNIT WITH 100% FULLY MODULATING AIRSIDE ECONOMIZER AND POWER EXHAUSTER WITH FIXED TEMPERATURE CONTROL OF 65°F. 17. PROVIDE UNIT WITH UNIT-MOUNTED, NON-FUSED ELECTRICAL DISCONNECT SWITCH WITH THRU THE BASE SINGLE-POINT ELECTRICAL CONNECTION. 18. PROVIDE WITH ELECTRICAL PHASE LOSS PROTECTION. 19. THERMAL OVERLOAD PROTECTION ON ALL MOTORS. 20. PROVIDE UNIT WITH MANUFACTURER'S START-UP AND CERTIFIED REPORT FOR ENGINEER'S REVIEW AND APPROVAL. INSTALLING CONTRACTOR START-UP IS NOT ACCEPTABLE. 21. PROVIDE UNIT WITH VFD ON SUPPLY FAN SUITABLE FOR VAV CONTROL. FAN MOTOR SHALL BE RATED FOR VFD DUTY. 22. PROVIDE UNIT WITH ELECT. MECHANICAL CONTROLS NECESSARY TO CONTROL ALL LOCAL UNIT FUNCTIONS. TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE DDC CONTROLLER CAPABLE OF COMMUNICATING PEER-TO-PEER WITH THE BUILDING MANAGEMENT SYSTEM AND CONTROLLING ALL NECESSARY FUNCTIONS OF THE UNIT. UNITS PROVIDING 2,000 CFM OR MORE OF AIR SHALL BE EQUIPPED WITH SMOKE DETECTOR IN RETURN AIR STREAM TO SHUT DOWN UNIT OPERATION AND PRODUCE AN ALARM CONDITION AT THE PRESENCE OF SMOKE. SMOKE DETECTOR SHALL BE COMPATIBLE WITH FIRE ALARM SYSTEM AND BE PROVIDED BY FIRE ALARM CONTRACTOR. MECHANICAL CONTRACTOR SHALL RECEIVE SMOKE DETECTOR FROM FIRE ALARM CONTRACTOR AND INSTALL IN RETURN DUCT. 23. PROVIDE UNIT WITH AT MINIMUM ONE (1) YEAR PARTS AND LABOR WARRANTY, AND FOUR (4) YEAR EXTENDED COMPRESSOR WARRANTY. 24. PROVIDE UNIT WITH ALUMINIZED STEEL HEAT EXCHANGER WITH REDUNDANT GAS VALVE WITH GAS SHUTOFF, DIRECT SPARK IGNITION, ELECTRONIC FLAME SENSOR, AND INDUCED-DRAFT BLOWER. 25. PROVIDE MECHANICAL EQUIPMENT SCREENING SIMILAR TO CITYSCAPE ENVISOR OR APPROVED EQUAL. SEE SPECIFICATIONS FOR REQUIREMENTS. 26. TRANE, AAO, ADDISON, CARRIER OR APPROVED EQUAL.

CONSTANT VOLUME PACKAGED ROOFTOP WITH NATURAL GAS HEAT SCHEDULE table with columns for MARK, MFG., MODEL, SIZE, CONFIGURATION, REFRIGERANT, WEIGHT (LBS.), FAN AND MOTOR DATA, HEATING SECTION, TOTAL COOLING CAPACITY (MBH), SENS. COOLING CAPACITY (MBH), HOT GAS REHEAT CAPACITY (MBH), EER, ELECTRICAL CHAR., and REMARKS AND ACCESSORIES.

- REMARKS AND ACCESSORIES: 1. COOLING CAPACITIES ARE BASED STANDARD AHRI/ASHRAE CONDITIONS ON 95F db / 75F wb AMBIENT AIR, 80F db AND 67F wb ENTERING AIR TEMPERATURE. 2. HEATING CAPACITIES ARE BASED STANDARD AHRI/ASHRAE CONDITIONS ON 0F db AMBIENT AIR, 70F db AND 60F wb ENTERING AIR TEMPERATURE. 3. PROVIDE UNIT WITH INSULATED WALL CONSTRUCTION. 4. PROVIDE UNIT WITH 2" 30% EFFICIENT PLEATED FIBERGLASS FILTERS. 5. PROVIDE UNIT WITH INTERNAL VIBRATION ISOLATORS ON ALL FANS. 6. FURNISH WITH INSULATED VIBRATION ISOLATION ROOF CURB SIMILAR TO MASON INDUSTRIES RCS SERIES OR EQUAL. CURB HEIGHT SHALL BE MINIMUM 16" HEIGHT. CONTRACTOR SHALL COORDINATE CURB HEIGHT WITH ROOF SYSTEM SUCH THAT TOP OF CURB IS AT LEAST 14" ABOVE ROOF. CURB SHALL BE COMPATIBLE WITH THE ROOF SYSTEM AND CONSTRUCTED TO MATCH LOW SLOPE ROOF. 7. PROVIDE UNIT WITH 115V / 1 PH, FACTORY WIRED, POWERED CONVENIENCE OUTLET. 8. PROVIDE UNIT WITH HINGED ACCESS PANELS WITH LOCKABLE HANDLES. 9. PROVIDE UNIT WITH HAIL GUARD. 10. PROVIDE UNIT WITH STAINLESS STEEL OR NON-CORROSIVE POLYMER, DOUBLE SLOPE CONDENSATE DRAIN PAN. 11. PROVIDE UNIT WITH MINIMUM 2-STAGE COOLING. 12. COMPRESSORS SHALL HAVE EXTENDED 4 YR. WARRANTIES. 13. PROVIDE UNIT WITH THERMAL EXPANSION VALVE (TXV) ON EACH REFRIGERANT CIRCUIT. 14. FURNISH UNIT WITH LOW PRESSURE SWITCH, HIGH PRESSURE SWITCH, CRANKCASE HEATERS, DRIERS, AND FREEZESTAT. 15. PROVIDE UNIT WITH MODULATING HOT GAS REHEAT. 16. PROVIDE UNIT WITH 100% FULLY MODULATING AIRSIDE ECONOMIZER AND POWER EXHAUSTER WITH FIXED TEMPERATURE CONTROL OF 65°F. 17. PROVIDE UNIT WITH UNIT-MOUNTED, NON-FUSED ELECTRICAL DISCONNECT SWITCH WITH THRU THE BASE SINGLE-POINT ELECTRICAL CONNECTION. 18. PROVIDE WITH ELECTRICAL PHASE LOSS PROTECTION. 19. THERMAL OVERLOAD PROTECTION ON ALL MOTORS. UNITS PROVIDING 2,000 CFM OR MORE OF AIR SHALL BE EQUIPPED WITH SMOKE DETECTOR IN RETURN AIR STREAM TO SHUT DOWN UNIT OPERATION AND PRODUCE AN ALARM CONDITION AT THE PRESENCE OF SMOKE. SMOKE DETECTOR SHALL BE COMPATIBLE WITH FIRE ALARM SYSTEM AND BE PROVIDED BY FIRE ALARM CONTRACTOR. MECHANICAL CONTRACTOR SHALL RECEIVE SMOKE DETECTOR FROM FIRE ALARM CONTRACTOR AND INSTALL IN RETURN DUCT. 20. PROVIDE UNIT WITH AT MINIMUM ONE (1) YEAR PARTS AND LABOR WARRANTY, AND FOUR (4) YEAR EXTENDED COMPRESSOR WARRANTY. 21. PROVIDE UNIT WITH ELECT. MECHANICAL CONTROLS NECESSARY TO CONTROL ALL LOCAL UNIT FUNCTIONS. TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE DDC CONTROLLER CAPABLE OF COMMUNICATING PEER-TO-PEER WITH THE BUILDING MANAGEMENT SYSTEM AND CONTROLLING ALL NECESSARY FUNCTIONS OF THE UNIT. 22. PROVIDE MECHANICAL EQUIPMENT SCREENING SIMILAR TO CITYSCAPE ENVISOR OR APPROVED EQUAL. SEE SPECIFICATIONS FOR REQUIREMENTS. 23. PROVIDE UNIT WITH MANUFACTURER'S START-UP AND CERTIFIED REPORT FOR ENGINEER'S REVIEW AND APPROVAL. INSTALLING CONTRACTOR START-UP IS NOT ACCEPTABLE. 24. PROVIDE UNIT WITH CO2 SENSOR MOUNTED IN RETURN AIR STREAM TO MONITOR CO2 LEVELS. OUTSIDE AIR DAMPER SHALL MODULATE TO MAINTAIN ACCEPTABLE LEVELS, LESS THAN 1,000 PPM (ADJUSTABLE). 25. PROVIDE UNIT WITH ALUMINIZED STEEL HEAT EXCHANGER WITH REDUNDANT GAS VALVE WITH GAS SHUTOFF, DIRECT SPARK IGNITION, ELECTRONIC FLAME SENSOR, AND INDUCED-DRAFT BLOWER. 26. PROVIDE UNIT WITH MODULATING NATURAL GAS HEATING. TRANE, AAO, ADDISON, CARRIER OR APPROVED EQUAL.

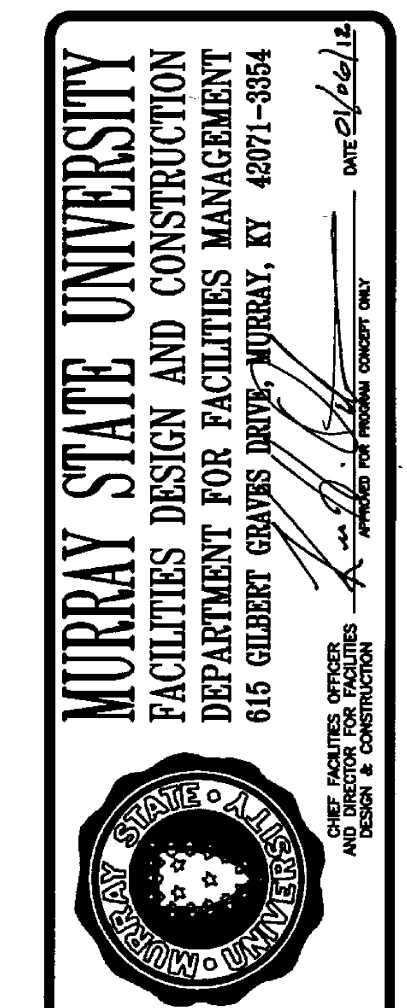
SINGLE DUCT AIR TERMINAL UNIT WITH HOT WATER HEAT SCHEDULE table with columns for MARK, MANUFACT., MODEL, INLET SIZE (IN.), CFM, MAX. UNIT STATIC PRESSURE (IN. H2O), NC LEVELS, HOT WATER HEATING COIL, ELEC. VOLTAGE/PHASE, and REMARKS AND ACCESSORIES.

- REMARKS AND ACCESSORIES: 1. ROOM NC LEVEL SHOWN INCLUDES ATTENUATION TRANSFER FUNCTIONS OBTAINED FROM TABLES IN ARI STANDARD 885. 2. SOUND DATA SHALL BE OBTAINED FROM TESTS CONDUCTED IN ACCORDANCE WITH ARI STANDARD 880-98. 3. DASHES (---) INDICATES DISCHARGE AND RADIATED NOISE LEVELS LESS THAN 20 NC. 4. FURNISH ALL VAV BOXES WITH 24" FLEXIBLE STAINLESS STEEL BRAIDED HOSE KIT WITH STRAINER, BALL VALVES AND TEMPERATURE/PRESSURE TEST PORTS AS DETAILED IN DRAWINGS. 5. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES. 6. PROVIDE UNIT WITH NON-FUSIBLE DISCONNECT SWITCH. 7. ALL HOT WATER COIL CONNECTIONS SHALL BE 3/4" UNLESS OTHERWISE NOTED. 8. BOX STATIC PRESSURE DROP INCLUDES COIL AT SCHEDULED MAXIMUM AIR FLOW RATE. 9. PROVIDE MOUNTING BRACKETS TO ACCEPT ALL-THREAD HANGING RODS OR WIRE HANGERS. 10. PROVIDE UNITS WITH A MINIMUM OF 22 GAUGE G90 GALVANIZED METAL DOUBLE-WALL CONSTRUCTION COVERING ALL INSULATION. 11. PROVIDE UNITS WITH A BOTTOM COIL ACCESS PLATE FOR CLEANING THE COIL. 12. THE MECHANICAL CONTRACTOR SHALL COORDINATE ALL UNIT COMPONENTS WITH THE MANUFACTURER AND THE TEMPERATURE CONTROL CONTRACTOR TO ASSURE THAT ALL OPTIONS AND ACCESSORIES ARE FURNISHED AS SPECIFIED. 13. TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE UNIT WITH 3-WAY CONTROL VALVES UNLESS NOTED OTHERWISE. 14. PROVIDE VAV BOXES WITH CONTROL BOX AND TRANSFORMER CAPABLE OF CONVERTING LINE VOLTAGE TO CONTROL VOLTAGE. 15. PROVIDE UNIT WITH FULLY MODULATING CONTROL DAMPER. 16. PROVIDE UNIT WITH MANUFACTURER'S START-UP AND CERTIFIED REPORT FOR ENGINEER'S APPROVAL. INSTALLING CONTRACTOR START-UP IS NOT ACCEPTABLE. NAILOR, TRANE, TITUS OR APPROVED EQUAL.

HYDRONIC PUMP SYSTEM SCHEDULE table with columns for MARK, MFG., SERIES, SIZE, CONFIGURATION, SERVICE, MOTOR POWER (HP), RPM, GPM, PUMP EFF., TDH (FT. H2O), VOLTAGE/PHASE, and REMARKS AND ACCESSORIES.

- REMARKS AND ACCESSORIES: 1. FURNISH PUMP WITH BUNA-CARBON/CERAMIC MECHANICAL SEAL. 2. EQUIPMENT SHALL HAVE A MINIMUM 3 YEAR WARRANTY. ARMSTRONG, BELL AND GOSSETT, PATTERSON, OR APPROVED EQUAL.

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SPORTS PRACTICE FACILITY MURRAY STATE UNIVERSITY MURRAY, KENTUCKY OWNER REVIEW SET - 2011/12/13



REVISIONS table with columns for Date, H+C Project No., FDC Project No., BFW Project No., Marcum Project No., and Sheet Name.