AIR CONDITIONING SPECIFICATIONS

1. SCOPE OF WORK:

THE WORK INCLUDED UNDER THIS SECTION CONSISTS OF FURNISHING ALL MATERIALS, EQUIPMENT AND LABOR, AND THE PERFORMING OF ALL FUNCTIONS, EXCEPT AS OTHERWISE SPECIFIED HEREIN OR SHOWN ON THE DRAWINGS TO BE PERFORMED BY OTHERS, FOR THE INSTALLATION OF COMPLETE AND WORKING AIR CONDITIONING, HEATING AND VENTILATING SYSTEMS. CHECK FIELD CONDITIONS AND MAKE MEASUREMENTS BEFORE ORDERING MATERIALS.

2. EQUIPMENT LIST AND MAINTENANCE MANUAL:

MAINTENANCE MANUAL SHALL INCLUDE ALL AVAILABLE MANUFACTURERS' OPERATION AND MAINTENANCE INSTRUCTIONS TOGETHER WITH THE RECORD DRAWINGS HEREINBEFORE SPECIFIED AND ALL OTHER DIAGRAMS AND INSTRUCTIONS NECESSARY TO PROPERLY OPERATE AND MAINTAIN THE EQUIPMENT. THE MANUAL SHALL ALSO INCLUDE THE NAME, ADDRESS, AND PHONE NUMBER OF THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS INVOLVED IN ANY OF THE WORK SPECIFIED HEREIN. THE EQUIPMENT LIST AND MAINTENANCE MANUAL SHALL BE SUBMITTED IN ACCORDANCE WITH DIVISION 1, GENERAL REQUIREMENTS.

3. CODES, PERMITS, FEES, INSPECTIONS, RULES, AND REGULATIONS:

THE CONTRACTOR MUST, AT HIS OWN EXPENSE, OBTAIN ALL NECESSARY PERMITS, PAY ALL LEGAL FEES AND CHARGES AND COMPLY WITH ALL STATE AND MUNICIPAL BUILDING AND SAFETY LAWS, ORDINANCES AND REGULATIONS RELATING TO BUILDING AND PUBLIC HEALTH & SAFETY. ALL WORK SHALL BE IN CONFORMANCE WITH THE GOVERNING CODES.

4. ELECTRICAL EQUIPMENT

PROVIDE MECHANICAL EQUIPMENT HAVING MOTORS WITH MOTOR PROTECTORS. WIRING AND PROPER OPERATION OF THE MECHANICAL EQUIPMENT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR. ALL WIRING SHALL BE ROUTED IN CONDUIT OR IN PLENUM RATED WIRING. PROVIDE ONE (1) POWER CONNECTION POINT FOR ALL ELECTRICAL WIRING ON ALL EQUIPMENT.

5. WARRANTY:

THE SYSTEM SHALL HAVE A WARRANTY COVERING LABOR, MATERIALS AND EQUIPMENT FOR A PERIOD OF ONE YEAR AFTER COMPLETION AND ACCEPTANCE. REPLACE OR REPAIR ALL DEFECTIVE WORKMANSHIP, EQUIPMENT, AND MATERIALS AT NO ADDITIONAL COST TO THE OWNER.

6. TESTING

PERFORM COMPLETE TESTING AND BALANCING OF ALL MECHANICAL SYSTEMS IN ACCORDANCE WITH AABC OR NEBB LATEST STANDARDS.

TEST CONDENSATE PIPING TO HIGHEST POINT IN SYSTEM AND HOLD FOR FOUR HOURS.

REPAIR ALL LEAKS UNTIL SYSTEMS ARE WATERTIGHT.

7. APPROVED MANUFACTURERS

THE FOLLOWING MANUFACTURERS ARE APPROVED FOR USE SUBJECT TO THE DETAILED REQUIREMENTS OF THE DRAWINGS AND THESE SPECIFICATIONS.

A/C UNIT (PACKAGED HEAT PUMP): TRANE, CARRIER, ICP, RUUD, YORK.

EXHAUST FANS: PENN, ACME, BERNS, GREENHECK, COOK.

8. CONDENSATE DRAIN PIPING

INSTALL ALL PIPING ABOVE FLOOR UNLESS NOTED ON THE DRAWINGS. USE TYPE "M" HARD DRAWN COPPER FOR ALL CONDENSATE DRAIN LINES. USE WROUGHT COPPER SOLDER TYPE FITTINGS AT ALL COPPER CONNECTIONS.

INSTALL PIPING WITH MINIMUM FALL 1" PER 10 FEET FROM CONDENSATE PANS TO INDIRECT CONNECTIONS AT PLUMBING WASTE SYSTEM. PROVIDE TRAPS AT UNIT.

MAKE CHANGES IN DIRECTION WITH TEES OR CROSSES. EQUIP THE EXTRA OPENING WITH THREADED BRASS PLUG FOR CLEANOUT ACCESS IN DIRECTION OF RUN, UNLESS THE CHANGE IN DIRECTION IS FROM HORIZONTAL TO VERTICAL. ON TEES INSTALLED VERTICALLY, LEAVE THE EXTRA OPENING OPEN FOR VENT PURPOSES, WITH AN EXTENSION AS REQUIRED TO RAISE OPENING ABOVE HYDRAULIC GRADE LINE.

CLEAN PIPING AFTER INSTALLATION BY FLUSHING ENTIRE SYSTEM THOROUGHLY WITH CLEAN WATER.

9. DUCTWORK

INSTALL ALL DUCTWORK IN ACCORDANCE WITH SMACNA GUIDELINES AND STANDARDS FOR A MINIMUM OF 1" STATIC PRESSURE. TRANSITIONS, FITTINGS AND ELBOWS SHALL BE CONSTRUCTED TO OFFER A MINIMUM OF NOISE AND PRESSURE. RADIUS ELBOWS SHALL HAVE A MINIMUM RADIUS OF 1.5 TIMES THE DUCT DIMENSION IN THE DIRECTION OF TURN, AND SQUARE ELBOWS SHALL HAVE SINGLE THICKNESS TURNING VANES. ALL JOINTS SHALL BE TAPED WITH GLASS CLOTH AND HARDCAST OR ADHESIVE (UL LISTED). ALL DUCT SIZES ARE TO THE INSIDE OF LINING. INCREASE OUTSIDE DIMENSIONS AS NECESSARY.

10. DUCT INSULATION

ALL INSULATION ADHESIVES & INSTALLATION SHALL COMPLY WITH NFPA-90A.

CONCEALED DUCTS INSIDE BUILDING SHALL BE SHEET METAL WRAPPED WITH 1" THERMAL INSULATION, WITH VAPOR BARRIER COVER OR 1" FIBERGLASS DUCTBOARD.

EXPOSED DUCTS INSIDE BUILDING SHALL BE SHEET METAL LINED WITH 1" ACOUSTICAL INSULATION.

DUCTS OUTSIDE BUILDING SHALL BE SHEET METAL LINED WITH 2" ACOUSTICAL INSULATION.

11. GRILLES AND REGISTERS

GRILLES AND REGISTERS SHALL BE OF THE TYPE AND FINISH AS INDICATED ON THE DRAWINGS, COMPLETE WITH OPPOSED BLADE DAMPERS EXTRACTORS AND STRAIGHTENING GRIDS AS REQUIRED.

12. AIR CONDITIONING UNITS (PACKAGED HEAT PUMP)

DESCRIPTION: PROVIDE ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES NECESSARY TO FURNISH AND INSTALL FACTORY ASSEMBLED AND TESTED HEAT PUMP UNITS WITH INSULATED CASING, INDOOR BLOWER AND COIL, COMPRESSOR, CRANKCASE HEATER OUTDOOR FAN AND COIL, AND CONTROL PANEL AND A SINGLE UNIT. PROVIDE ROOF CURB FOR ENTIRE UNIT.

PRODUCTS: INDOOR COIL - FACTORY BUILT COMPLETE WITH REFRIGERANT DIRECT EXPANSION COOLING COIL, CHANGE-OVER VALVE, EXPANSION VALVE (CAPILLARY ACCEPTABLE ON 61,000 BTU/H PER CIRCUIT AND SMALLER), INSULATED CASING AND INSULATED DRAIN PAN.

INDOOR FAN SECTION: CENTRIFUGAL TYPE, PERMANENT LUBRICATED BEARINGS.

FILTERS: 1" THICK, DISPOSABLE TYPE.

OUTDOOR SECTION: HERMETIC TYPE COMPRESSOR AND MOTOR, AIR COOLED FINNED TUBED OUTDOOR COIL, FANS, REFRIGERANT PIPING, ELECTRIC CONTROL PANEL AND ALL NECESSARY STARTERS, TRANSFORMERS, RELAYS, HIGH PRESSURE SWITCH, AND PRESSURE SWITCH. PROVIDE LOW TEMPERATURE CUTOUT FOR COMPRESSOR ON HEATING CYCLE. DESIGN UNIT TO OPERATE DOWN TO 20oF AMBIENT WITH A MINIMUM COP OF 1.8 AT THAT TEMPERATURE. PROVIDE GUARD FOR OUTDOOR COIL.

CONTROLS AND POWER WIRING: THE CONTROLS SHALL INCLUDE A ROOM SENSOR WITH AN OVERRIDE "ON" SWITCH AND SETPOINT ADJUSTMENT. EACH UNIT SHALL BE COMPLETELY FACTORY WIRED FOR TERMINAL CONNECTIONS OF THERMOSTAT AND POWER WIRING.

PROVIDE "HONEYWELL" MODEL T7350 COMMERCIAL PROGRAMMABLE THERMOSTAT, INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

PROVIDE ONE POWER CONNECTION POINT FOR ALL ELECTRICAL WIRING UNLESS INDICATED OTHERWISE.

EFFICIENCY: THE CERTIFIED ARI CAPACITIES OF THE EQUIPMENT SHALL INDICATE AN EER OF NOT LESS THAN THE FOLLOWING AT ARI CONDITIONS:

UNDER 65,000 BTU/H TOTAL CAPACITY ----- 10.0 SEER
OVER 65,000 BTU/H TOTAL CAPACITY ------ 9.0 SEER

13. EXHAUST FANS

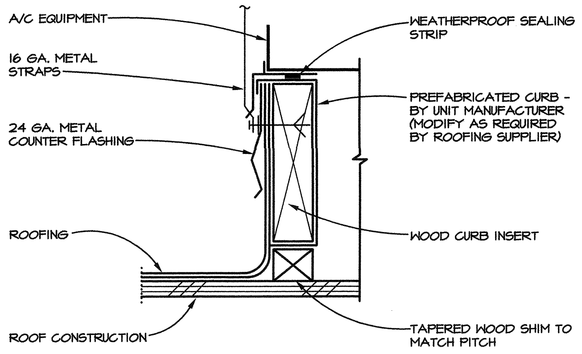
DESCRIPTION: PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, AND SERVICES NECESSARY TO FURNISH AND INSTALL EXHAUST FANS AND BLOWERS.

PRODUCTS: GENERAL - PROVIDE ROOF CAPS, WALL CAPS, FLASHINGS, BASES, SPEED SWITCHES, APPROVED VIBRATION ISOLATORS, INTEGRAL INLET GRILLES, AND DUCT CONNECTIONS AS INDICATED OR SPECIFIED.

PROVIDE INTERNAL DISCONNECTING MEANS AND OVERLOAD PROTECTION ON ALL UNITS 1/2 HP AND SMALLER AND/OR 120 VOLT, SINGLE PHASE. TWO SPEED MOTOR SHALL BE TWO WINDING TYPE.

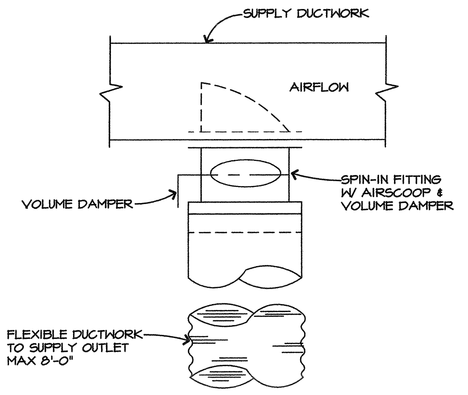
ALL FANS, EXCEPT TOILET EXHAUST FANS 200 CFM AND BELOW, SHALL BE AMCA CERTIFIED AND APPROVED. SOUND LEVELS SHALL NOT EXCEED THOSE INDICATED.

END OF SECTION

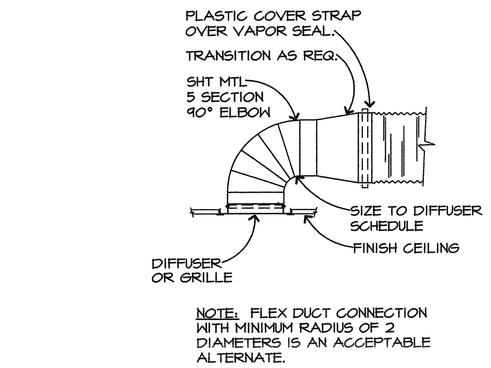


NOTE:
PROVIDE SEISMIC RESTRAINT AS REQ. BY CODE ON ALL HVAC EQUIP.

① A/C MOUNTING DETAIL

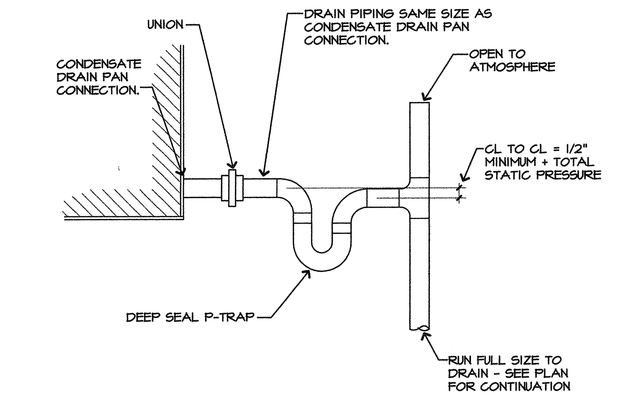


② BRANCH TAKE-OFF DET.



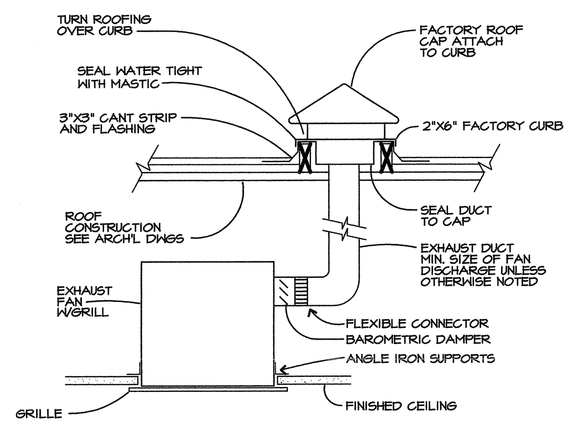
NOTE: FLEX DUCT CONNECTION WITH MINIMUM RADIUS OF 2 DIAMETERS IS AN ACCEPTABLE ALTERNATE.

④ DIFFUSER INSTALLATION



NOTE:
DRAIN PIPING TO BE MINIMUM UNIT CONNECTION SIZE. LARGER UNITS (+25 TONS) DRAIN PIPING (1) SIZE LARGER THAN DRAIN CONNECTION.

③ CONDENSATE DRAIN CONN.



⑤ EXHAUST FAN DETAIL

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SHEET TITLE: MECHANICAL DETAILS & SPECIFICATIONS

HEALTH'S ESSENCE, INC.

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