

1.3 SHEET METAL DUCT WORK CONSTRUCTION

A. The work under this heading includes all sheet metal work as required to complete supply and exhaust systems including ducts, housings, ventilating hoods, exhaust hoods, louvers, dampers, grilles, diffusers, registers, access doors, access panels, etc.

B. Duct material shall be galvanized steel unless noted otherwise on the drawings.

C. Seal all ducts to Seal Class A per SMACNA's "HVAC Duct Construction Standards - Metal and Flexible"

D. Make ductwork and installation in conformance with the applicable local Mechanical Code and Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) HVAC Duct Construction Standards (Latest Edition) amended as follows:

- Seal all transverse joints, fittings, connections, and seams with Hardcast DT tape and FTA adhesive, Hardcast AFG-1402 "Foil-Grip" applied per manufacturers instructions, or brushed-on liquid based joint and seam sealant.
- Make all branch connections with 45° entry clinch collar.
- Round branch duct take-offs shall be high efficiency takeoffs (HETO), made with 45° entry clinched collar and rectangular to round transition. If damper is provided with HETO, it shall meet the requirements of the manual balance damper section below.

E. Offset ducts to clear pipes and obstructions.

F. Patch all duct holes air tight after installation.

G. All round ductwork shall be a minimum of 26 gauge sheet metal or heavier as required by SMACNA and the Mechanical Code.

H. Duct Cleaning: Clean new and existing duct system(s) before testing, adjusting, and balancing.

B 1.4 FLEXIBLE CONNECTIONS

A. Duct connections to fans and where noted elsewhere on plans, shall be sound and vibration isolation flexible connections made with fire resistant, water proof heavy glass fabric with double coating of neoprene as manufactured by Ventfabrics, Inc., Ductmate Industries, Inc., Duro Dyne, Inc., or Ward Industries, Inc. Connections shall be not less than 4" long, shall have suitable metal collar frame at each end and shall be made with at least one-inch slack in material to prevent transmission of vibration.

1.5 GRILLES, REGISTERS, AND DIFFUSERS

A. Manufacturers: Titus - Krueger - Price

B. Capacity: As indicated on drawings.

C. Accessories: As scheduled on the drawings for finish, opposed blade dampers, borders, directional vanes, etc.

1.6 EXHAUST FANS

A. Manufacturers: PennBarry – Cook – Greenheck – Acme - Twin City - Carnes.

B. Capacity: As scheduled on the drawings.

C. Features: All fans bear seal of ratings certified by A.M.C.A. - adjustable sheave belt drive or variable speed direct drive as scheduled on plans – factory roof curbs shall be galvanized steel with 1-1/2" thick fiberglass insulation and wood nailer, sized to suit fan base and sloped as necessary for roof – utility set fans shall have epoxy coated finish unless noted otherwise on plans.

D. Accessories: As scheduled on drawings. Roof curb, vent cap, rotary belt tensioner, variable speed control, vibration isolation hangers, birdscreen, backdraft damper as applicable.

1.7 ROOF HOODS

A. Manufacturers: PennBarry – Cook – Greenheck – Acme - Twin City - Carnes.

B. Capacity and/or size scheduled on drawings.

C. Features: All aluminum with 1/2" bird screen (1/4" mesh on combustion air hoods) - backdraft dampers with felt tipped blades on relief hoods. Optional factory priming for field painted finish, or kynar finish with color selection by the Architect where noted on the plans.

D. Accessories: Factory roof curb (14" high and a minimum of 8" above adjacent roof surface). Roof curb shall be galvanized steel with 1-1/2" thick fiberglass insulation and wood nailer, sized to suit hood base and sloped as necessary for roof

1.8 DUCTLESS SPLIT SYSTEM AIR CONDITIONER

A. Manufacturers: Mitsubishi – LG – Trane – Daikin – Samsung

B. Capacity: As scheduled on plans.

C. Indoor Unit Features: Microcomputer controls - wall mounted remote thermostat - 24hr programmable timer – min. 3 speed fan - auto-louver oscillating horizontal and vertical deflection - washable filter - sound level not greater than 45 dBA – condensate lift/pump.

D. Outdoor Unit Features: Weatherproof corrosion-resistant housing - low ambient cooling operating range minimum 0 deg. F – variable capacity digital inverter compressor – R410a refrigerant – factory or pre-approved third party condenser coil hail guard spaced 1" minimum off of coil.

E. Refrigerant Piping: Contractor to provide Type "L" hard drawn pre-dehydrated and sealed copper pipe equal to "ACR". Fittings to be forged or wrought copper sweat with "SIL-FOS" or equivalent silver bearing solder. Use long radius ells except for traps. Test system at 300 PSI with Nitrogen for 2 hours. Triple evacuate piping down to 500 microns prior to final refrigerant charge. Support piping with "Hydrazorb", "Cush-A-Clamp" or equal vibration absorbing clamps. Equipment supplier to size piping for the indicated installation, and provide all required refrigerant specialties. Contractor's option to utilize pre-charged and insulated line sets.

F. Follow manufacturer's recommended installation and start-up procedures including completion of installation and start-up forms submitted for engineers review.

A.

1.9 SPLIT SYSTEM AIR HANDLER AND AIR COOLED HEAT PUMP UNIT

A. Manufacturers: Lennox - Trane – Carrier - York - Rheem

B. Capacity: As scheduled on plans.

C. Air handler features: Heating/cooling DX coil with backup electric heat coil - 1 inch thick coated or foil faced insulation - stainless steel or plastic drain pan - painted steel cabinet - refrigerant coil with copper tubes mechanically bonded to aluminum fins, complying with AHRI 210/240 - electric resistance heating coil - direct drive supply fan.

D. Heat Pump Features: Galvanized steel cabinet with baked enamel finish and removable panels - Scroll type compressor(s) with overload protection on vibration isolators – single stage, digital scroll, variable speed, or multiple stage compressor as scheduled – condenser coil with seamless copper tubing with aluminum fins – propeller condenser fan(s) with aluminum or galvanized steel blades, statically and dynamically balanced, direct driven with permanently lubricated bearings – crankcase heater – cycle protector – high pressure switch – low ambient controller to allow unit operation down to 40°F – low pressure switch – thermostatic mixing valve – time delay relay – R410a Refrigerant - hail guards - reversing valve.

E. Accessories: Extra set of throw away air filters to install after final acceptance - separate filter rack required on all side or bottom return installations.

F. Controls: Provide 7-day programmable thermostat with fan on/auto and heat/auto/cool switches for automatic heating and cooling operation. Program thermostat for continuous fan operation during occupied periods and have programmed ventilation output. Thermostat shall be capable of operating multiple heating and/or cooling stages as scheduled.

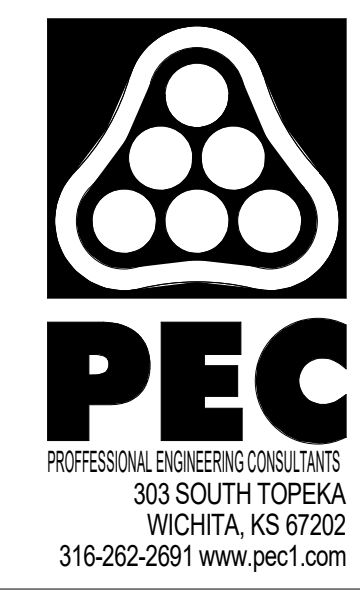
G. Refrigerant Piping: Contractor to provide Type "L" hard drawn pre-dehydrated and sealed copper pipe equal to "ACR". Fittings to be forged or wrought copper sweat with "SIL-FOS" or equivalent silver bearing solder. Use long radius ells except for traps. Test system at 300 PSI with Nitrogen for 2 hours. Triple evacuate piping down to 500 microns prior to final refrigerant charge. Support piping with "Hydrazorb", "Cush-A-Clamp" or equal vibration absorbing clamps. Equipment supplier to size piping for the indicated installation, and provide all required refrigerant specialties. Contractor's option to utilize pre-charged and insulated line sets.

1.10 ELECTRIC UNIT HEATERS

A. Manufacturers: Markel – Berko – QMark

B. Capacity: As scheduled on plans.

C. Features: Wall or ceiling mounted, heavy duty, forced air electric unit heater – recessed in wall or surface mounted as scheduled – tamper resistant front enclosure – cabinet with baked enamel finish – permanently lubricated totally enclosed motor – corrosion resistant electric resistance heating coil with nickel-chromium heating wire embedded in magnesium oxide refractory and sealed in metallic sheath – thermal overload – UL listed – integral tamper resistant or wall-mounted thermostat as scheduled – integral disconnect – wall box for recessed units.



SOUTH LAKES
SPORTS PARK
WICHITA, KS

Issue:		
	100% PLANS	10/18/23
JOB NO.	220008-003	
DATE	18 OCTOBER 2023	
PM	NLS	
DESIGNED BY	SMC	
DRAWN BY	JCM	
CHECKED BY	SMC	

MECHANICAL
SPECIFICATIONS

M004