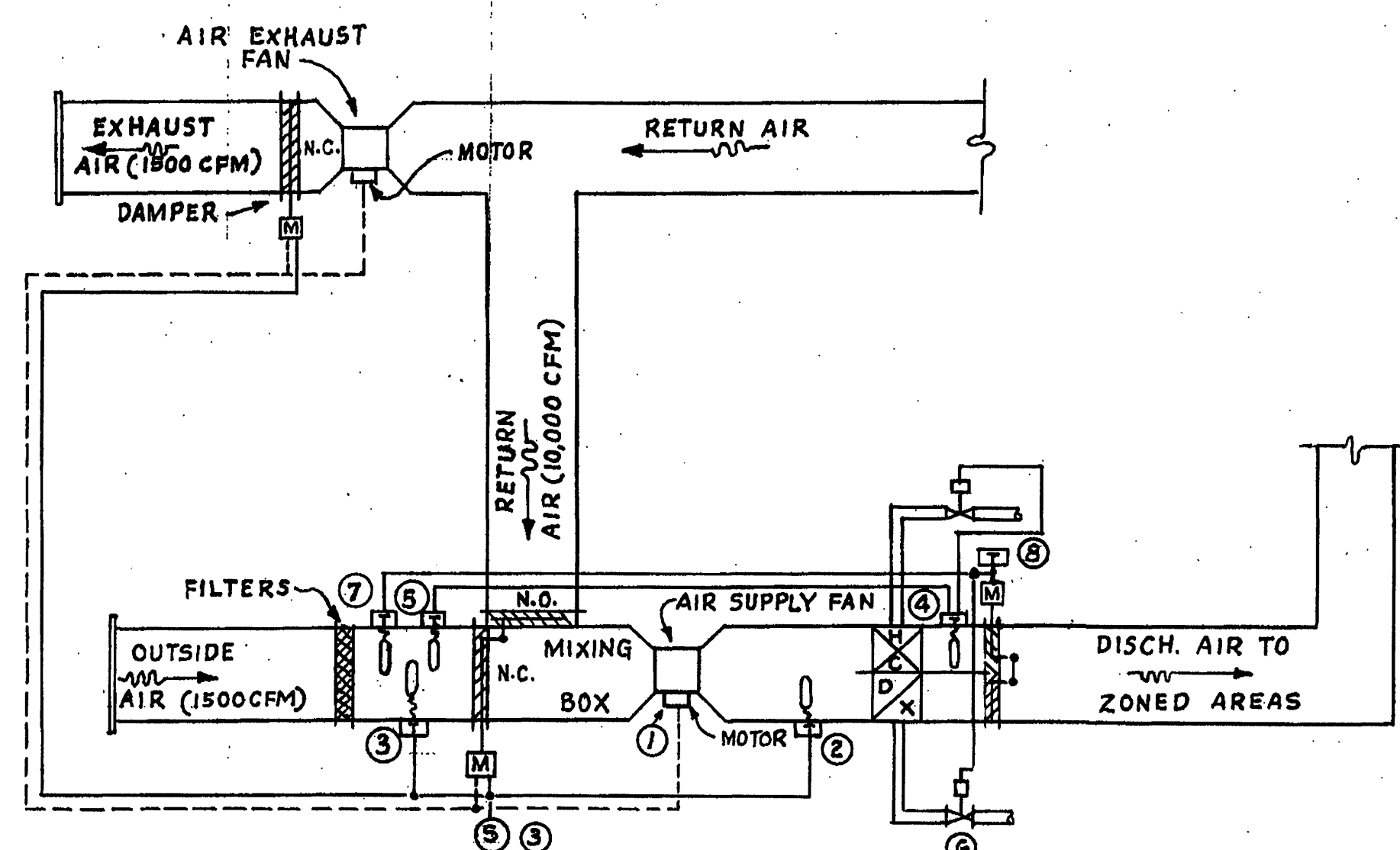
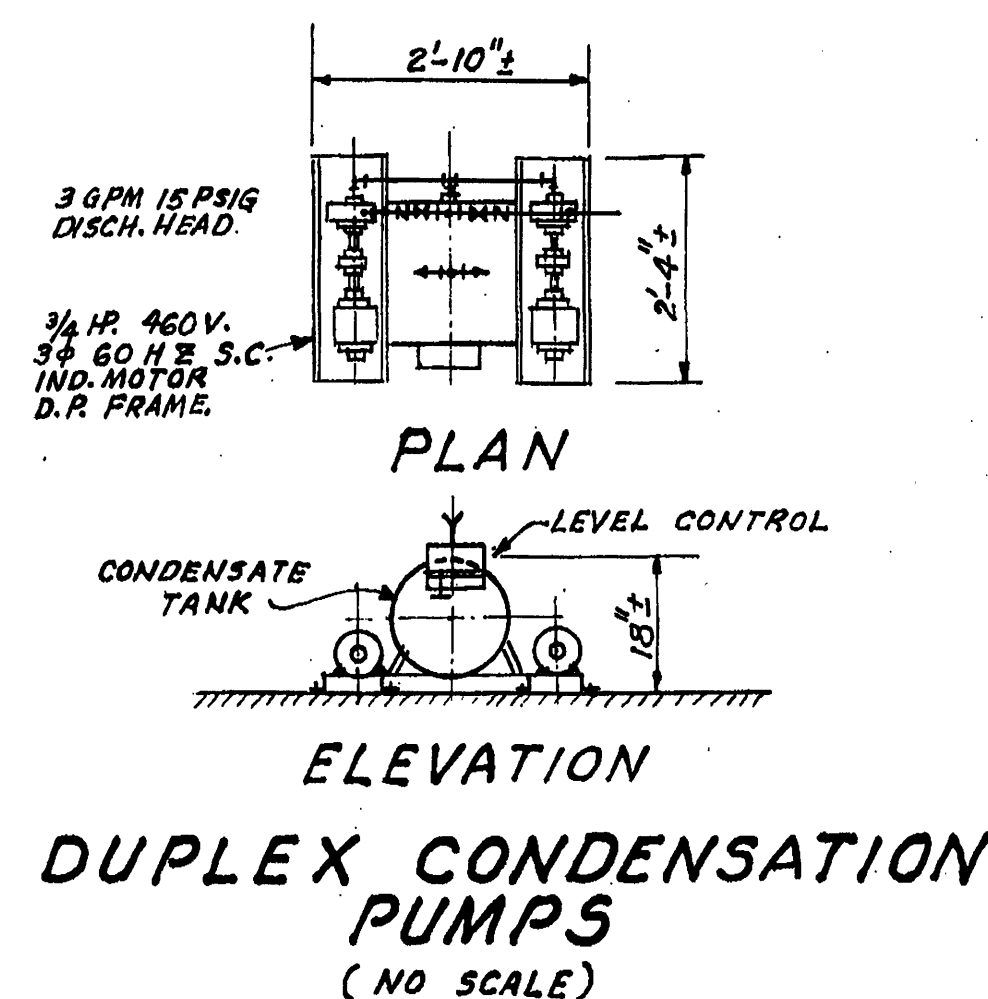


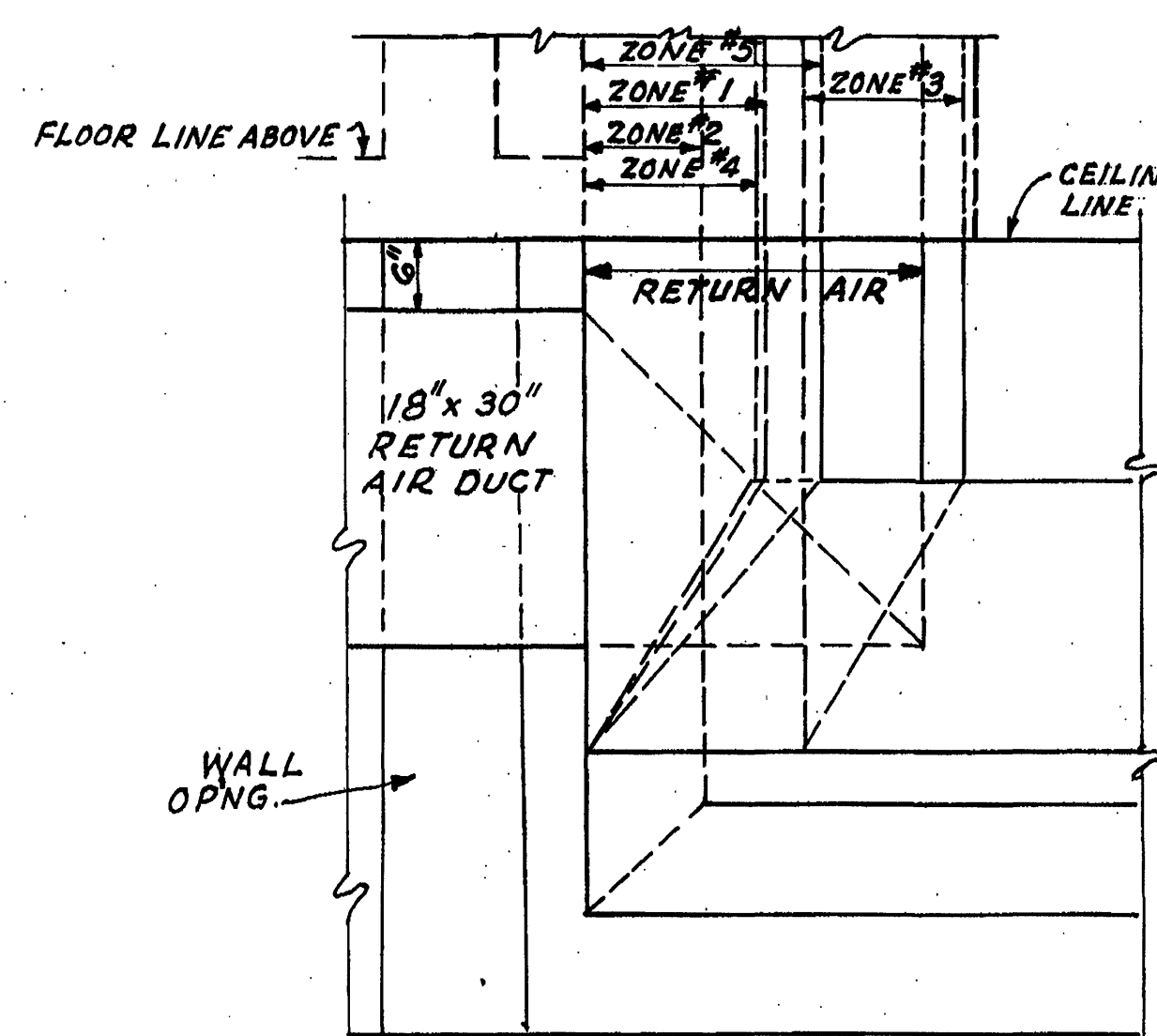


**YEAR-ROUND HOT & COLD DECK AIR
CONDITIONING SYSTEM**

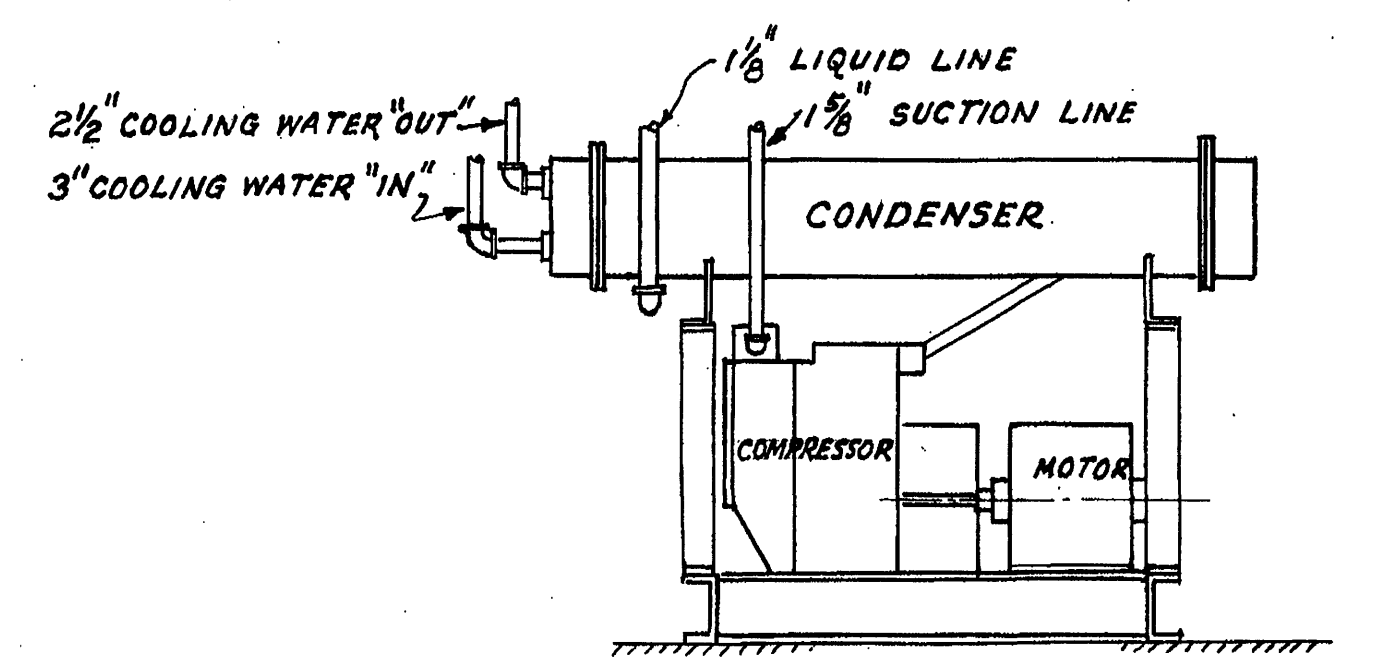
- ① Turning on fan energizes the control system.
- ② Winter controller modulates dampers to maintain mixed air temperature as long as outdoor air temperature is below setting of outdoor (summer) controller. When mixed air temperature is at top of range of winter controller, the outdoor air damper is wide open.
- ③ When outdoor air temperature rises to setting of summer controller, outside air, return air, and exhaust air dampers are closed to position determined by manual switch. Manual switch also positions dampers when winter controller calls for less than minimum outdoor air.
- ④ On winter cycle, controller in hot deck modulates heating valve to maintain desired hot deck temperatures.
- ⑤ Outdoor compensator sets control point of hot deck controller upward as outdoor air temperature drops.
- ⑥ On summer cycle, refrigerant solenoid valve is opened by room or zone thermostats when a predetermined minimum cooling load is reached. Valve closes when fan is turned off.
- ⑦ Outdoor controller keeps refrigerant solenoid valve closed as long as cooling is available from outdoor air.
- ⑧ Space thermostat in each room or zone modulates dampers to furnish mixture of air from hot and cold decks needed to maintain space temperature. (Hot deck is by-passed on summer cycle, cold deck is by-passed on winter cycle).



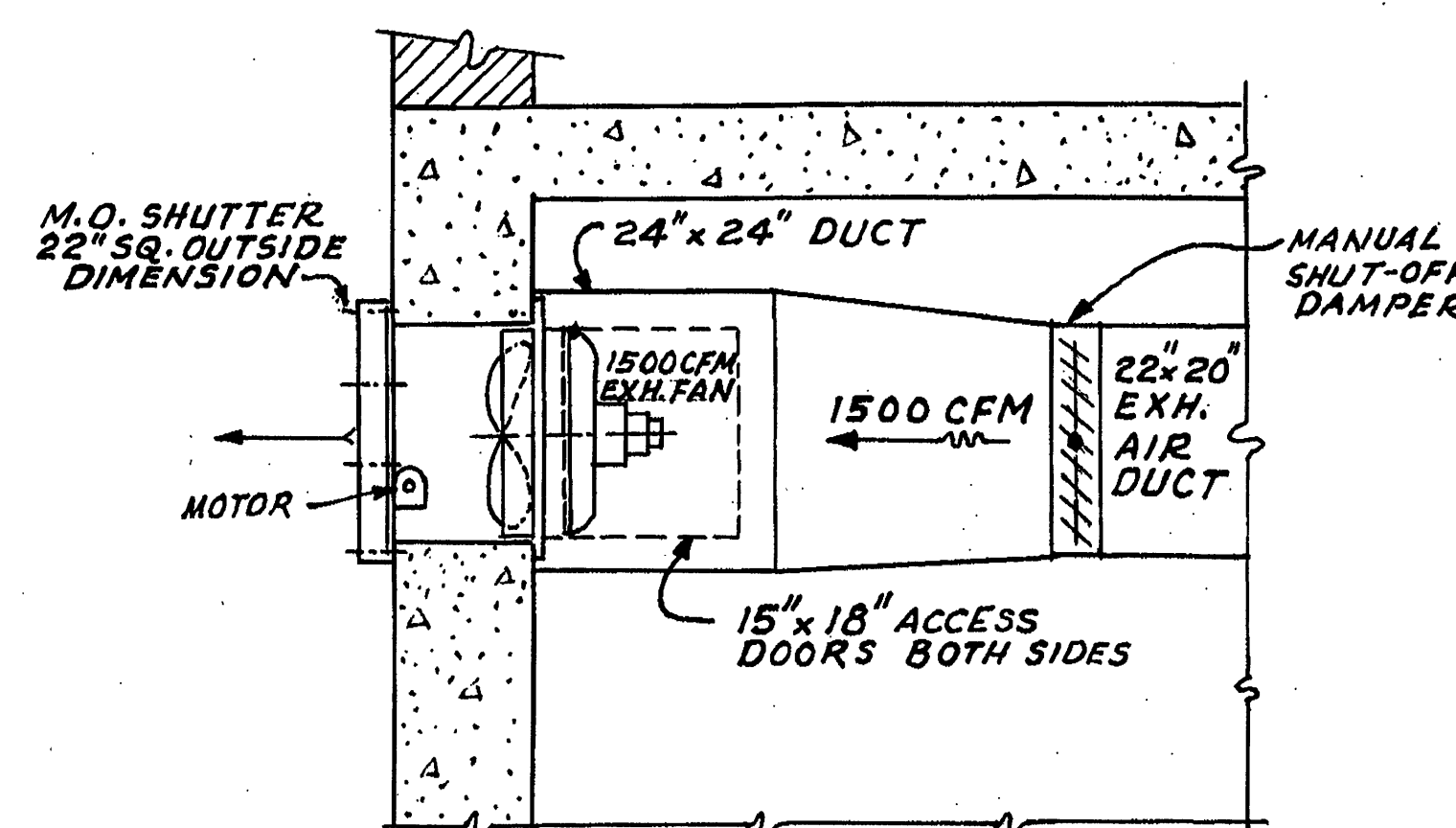
**DUPLEX CONDENSATION
PUMPS**
(NO SCALE)



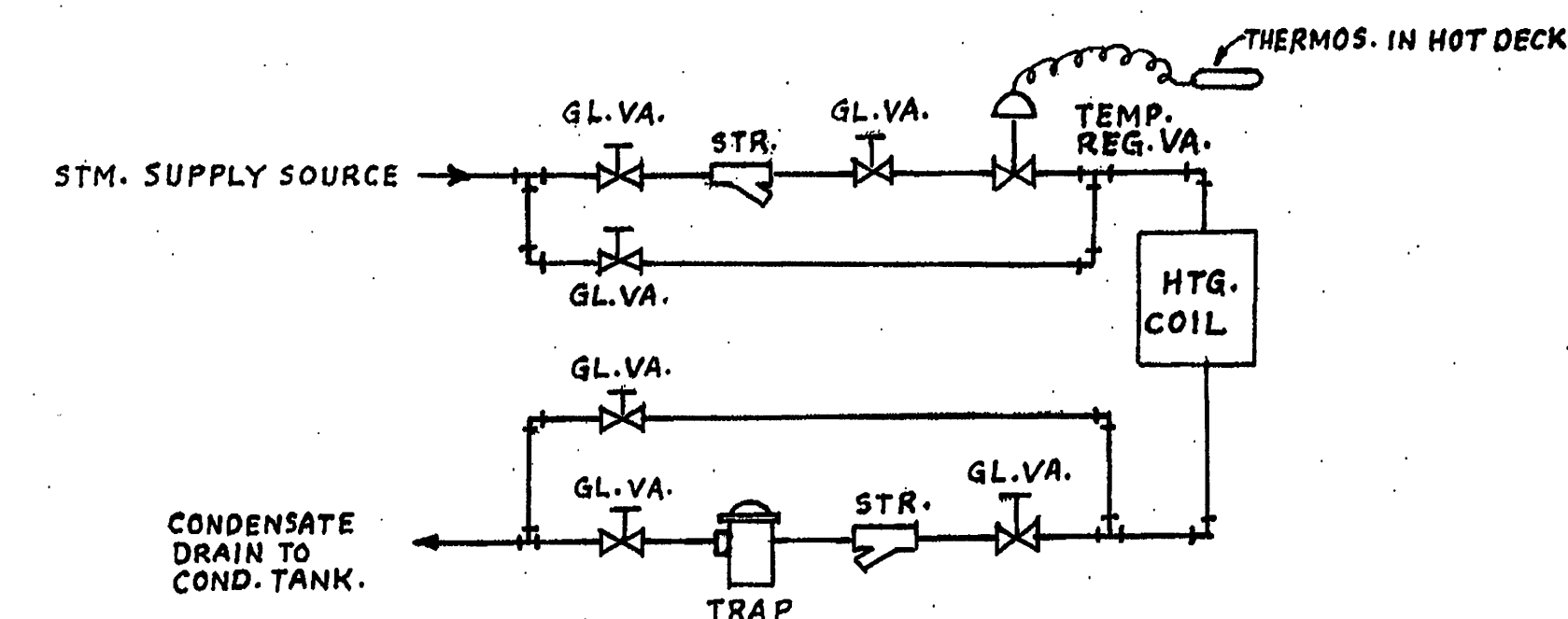
SECTION B-B
SCALE: 3/4" = 1'-0"



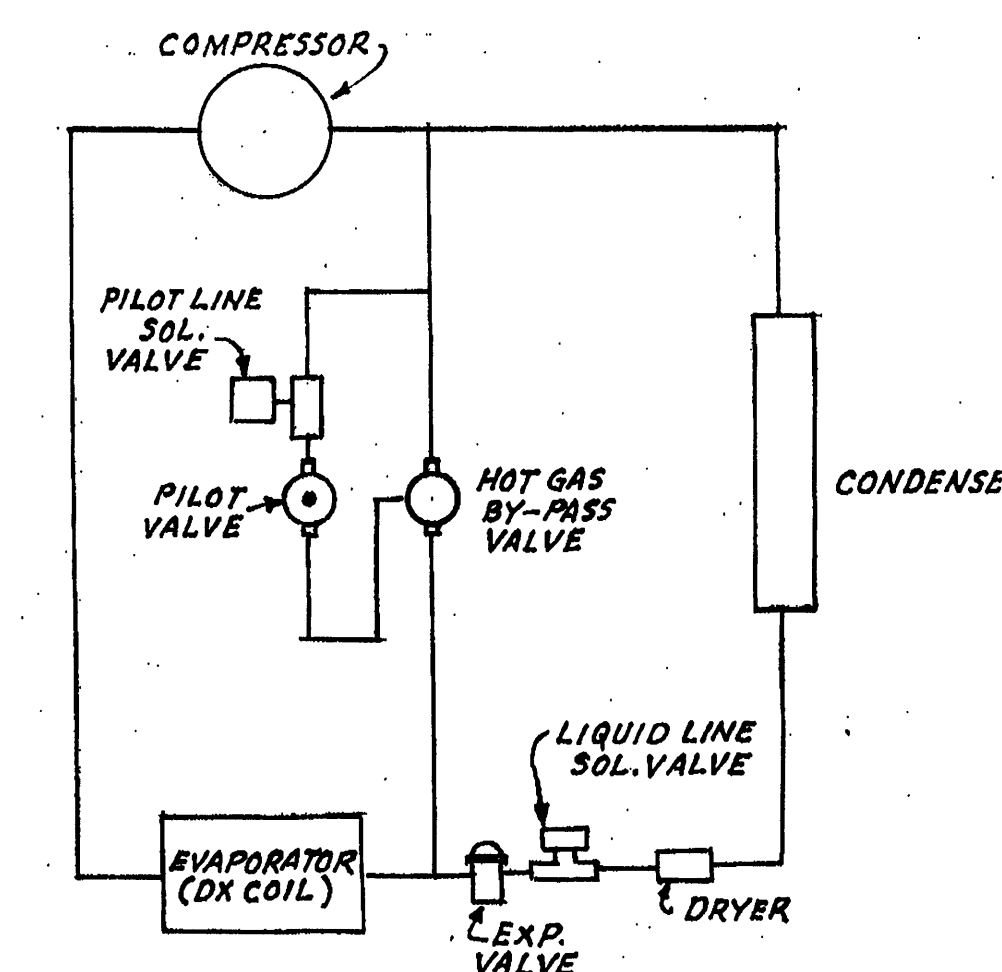
COMPRESSOR-CONDENSER UNIT
(NO SCALE)



SECTION C-C
SCALE: 3/4" = 1'-0"



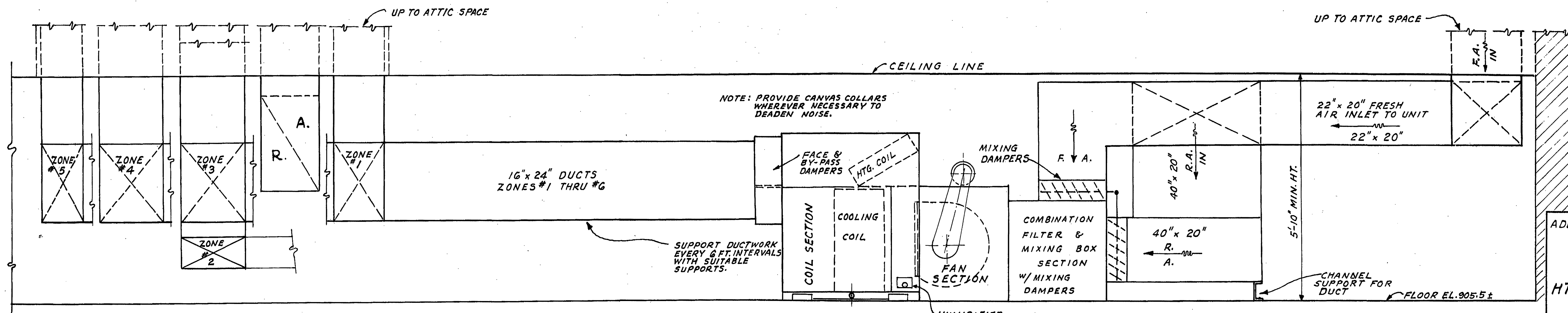
**HEATING COIL STEAM
PIPING CONNECTIONS**



**DIAGRAM OF HOT GAS
BY-PASS CONTROL**

NOTES

- ① Use brass tees with cleanout plugs in drain line.
- ② Pitch suction line down toward refrigeration unit.
- ③ Provide duct turns in all square elbows.
- ④ Use oil traps in suction line at all low points.



SECTION A-A
SCALE: 1/4" = 1'-0"

20F2
III
CONTR. "E"
ADDITIONS TO SEWAGE TREATMENT PLANT
ROANOKE, VIRGINIA
LABORATORY
SECTIONS
HTG., VENTG. & AIR COND.
ALVORD, BURDICK & HOWSON
ENGINEERS CHICAGO
1973