

FIG. 4. STEAM SUPPLY INSTALLATION WITH HEADER FOR PROCESS AND ZONE CONNECTIONS

various heating zones and process equipment. If initial pressure is below 50 psi the first stage pressure-reducing valve may be omitted.

Heat supply should be graduated according to variations in the outside temperature. The maximum in economical operation and satisfactory heating can only be obtained by the use of automatic temperature control (see Chapter 39).

Rapid draining and venting of the heating system should be obtained by means of suitable traps and air vents in order to obtain rapid circulation and quick heating. This is particularly important with intermittent-type temperature-control equipment. The selection of traps is discussed in Chapter 21. Suggested trap capacities are given in Table 4.

Provision should be made for conveniently shutting off the steam supply at night and at other times when heat is not needed. A considerable amount of heat can be saved by shutting off steam at night and other times when optimum building temperatures are not required. It is necessary, however, to have an ample amount of heating surface in order that the building may be quickly warmed after such turn-off periods.

Residual heat in the condensate should be salvaged. This heat may be salvaged by means of an air-cooling coil, or as is more frequently done, by a

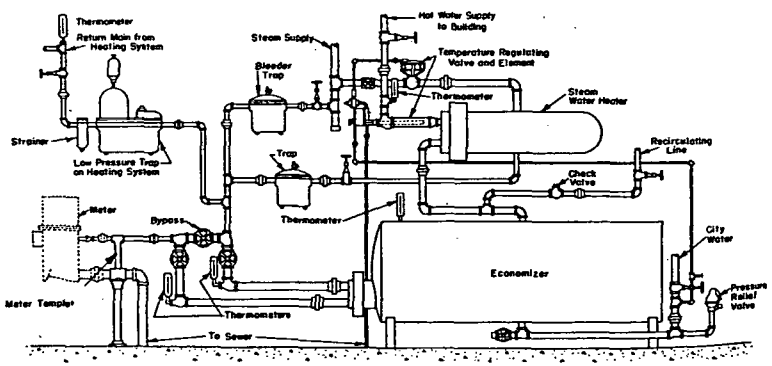
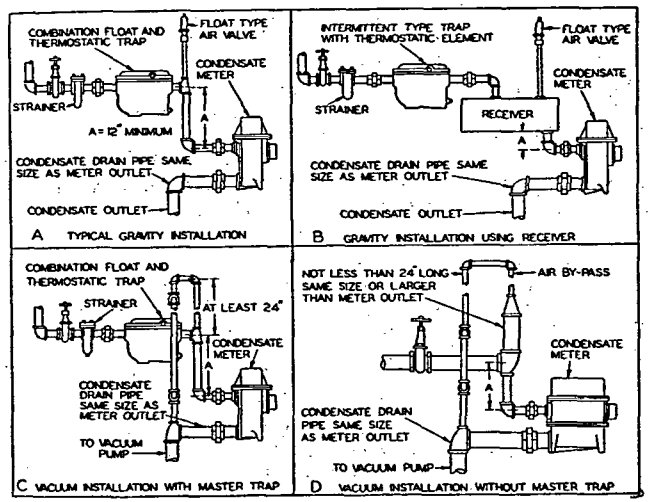


FIG. 5. METHOD OF INSTALLING A WATER HEATER AND ECONOMIZER IN A GRAVITY HEATING SYSTEM

water-heating economizer, shown in Fig. 5, which preheats the hot water supply to the building.

The condensate from the heating system, after leaving the traps, passes through the economizer. The water supply to the heater passes through the economizer, absorbing heat from the condensate. If the hot-water system in the building is of the recirculating type, the recirculating line should be connected *between* the economizer and the water heater proper,



METER CAPACITY LB PER HR	250	500	750	1500	3000	6500	12000
	DIMENSION A—INCHES						
Diagram B	4	4	8	8	8	12	12
Diagram C	12	12	15	15	15	18	18
Diagram D	12	12	15	15	15	18	18

FIG. 6. CONDENSATE METER INSTALLATION DETAILS

not at the economizer inlet, because the recirculated hot water is itself at a high temperature.

Since the heating-system load and the hot-water demand are not coincident a greater amount of heat can be extracted from the condensate if storage capacity is provided for the preheated water. Frequently, therefore, the economizer coils are submerged in the storage tank.

METERING

Meters are classified into two groups: *Condensate Meters* and *Flow Meters.*

The *Condensate Meter* is a popular type for use where all the condensate can be brought to a common point for metering purposes. Its simplicity