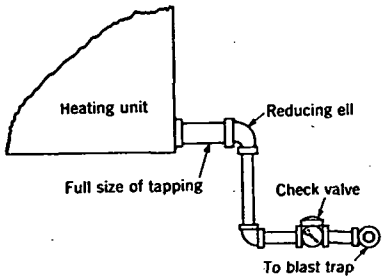
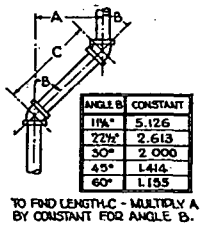


FIG. 28. HEATING UNIT RETURN CONNECTION WITHOUT SEPARATE AIR LINE (CENTRAL FAN SYSTEM)



ANGLE B	CONSTANT
11¼°	5.126
22½°	2.613
30°	2.000
45°	1.414
60°	1.155

FIG. 32. CONSTANTS FOR DETERMINING PROPER LENGTH OF OFFSET PIPE

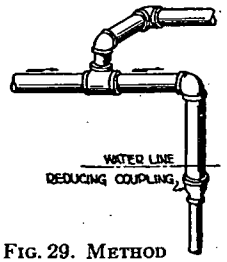


FIG. 29. METHOD OF DRIPPING MAIN WHERE IT RISES TO HIGHER LEVEL

Note.—Suitable for vapor and atmospheric systems.

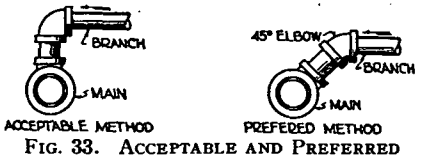


FIG. 33. ACCEPTABLE AND PREFERRED METHODS OF TAKING BRANCH FROM MAIN

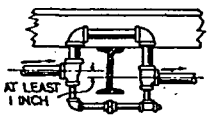


FIG. 30. LOOPING MAIN AROUND BEAM

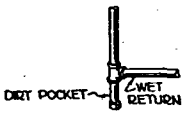


FIG. 34. DIRT POCKET CONNECTION

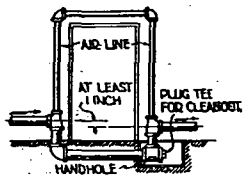


FIG. 31. LOOPING DRY RETURN MAIN AROUND OPENING

Note.—Suitable for any dry return line and any return line carrying air.

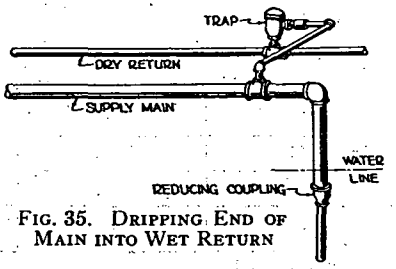


FIG. 35. DRIPPING END OF MAIN INTO WET RETURN

Note.—Suitable for vapor systems.

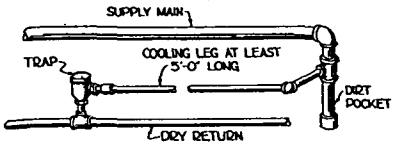


FIG. 36. DRIPPING END OF MAIN INTO DRY RETURN. (A GATE VALVE IS RECOMMENDED AT THE INLET SIDE OF THE TRAP)

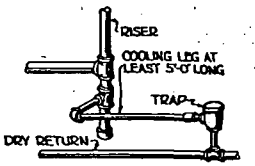


FIG. 37. DRIPPING HEEL OF RISER INTO DRY RETURN. (A GATE VALVE IS RECOMMENDED AT THE INLET SIDE OF THE TRAP)

The pipe sizes would then be based on the length of the run and the pressure drop desired, as in the case of radiators. It generally is considered desirable to place the indirect heating units on a separate system and not on supply or return lines connected to the general heating system.

DRIPPING

Any steam main in any type of steam heating system may be dropped to a lower level without dripping if the pitch is downward with the steam flow. Any steam main in any heating system can be elevated if dripped. (Fig. 29). Steam mains also may be run over obstructions without a change in level if a small pipe is carried below the obstruction to care for the condensation (Fig. 30). Return mains may be carried past doorways or other obstructions by using the scheme illustrated in Fig. 31; in vacuum systems it is well to have a gate valve in the air line.

Offsets in steam and return piping should preferably be made with 90-deg ells but occasionally fittings of other angles are used, and in such cases the length of the diagonal offset will be found as shown in Fig. 32.

Branches from steam mains in one-pipe gravity steam systems should use the *preferred connection* shown in Fig. 33, but where radiator condensation does not flow back into the main the *acceptable* method shown in the same figure may be used. This acceptable method has the advantage of giving a perfect swing joint when connected to the vertical riser or radiator connection, whereas the preferred connection does not give this swing without distorting the angle of the pipe. Runouts from the steam main are usually made about 5 ft long to provide flexibility for movement in the main.

Dirt pockets, desirable on all systems employing thermostatic traps, should be so located as to protect the traps from scale and muck which will interfere with their operation. Dirt pockets are usually made 8 in. to 12 in. deep and serve as receivers for foreign matter which otherwise would be carried into the trap. They are constructed as shown in Fig. 34.

On vapor systems where the end of the steam main is dripped down into the wet return, the air venting at the end of the main is accomplished by an air vent passing through a thermostatic trap into the dry return line as shown in Fig. 35. On vacuum systems the ends of the steam mains are dripped and vented into the return through thermostatic drip traps opening into the return line. The same method may be used in atmospheric systems. The cooling leg (Fig. 36) is for cooling the condensation