

the use of check valves. In using this connection, the wet return connects through the shortest possible horizontal pipe 2 in. below the normal boiler water line into the pipe which joins the boiler outlet and boiler inlet on the boiler side of the stop valves. By this arrangement, if a careless operator should close the boiler outlet valve and should forget to close the boiler inlet valve, no water below the level of the inlet con-

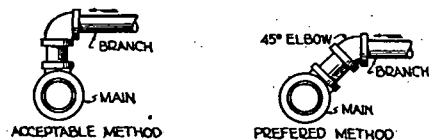


FIG. 8. ACCEPTABLE AND PREFERRED METHODS OF TAKING BRANCH FROM MAIN

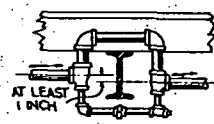


FIG. 9. LOOPING MAIN AROUND BEAM

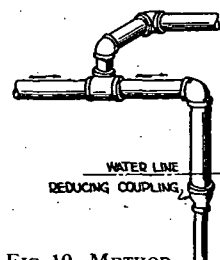


FIG. 10. METHOD OF DRIPPING MAIN WHERE IT RISES TO HIGHER LEVEL

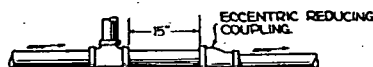


FIG. 11. METHOD OF REDUCING SIZE OF MAIN

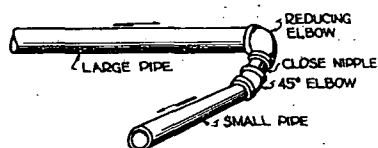


FIG. 12. REDUCING SIZE OF MAIN AT SWING CONNECTION

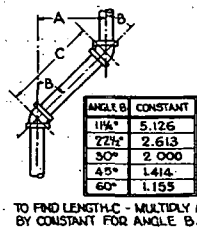


FIG. 13. CONSTANTS FOR DETERMINING PROPER LENGTH OF OFFSET PIPE

nection to the loop could leave the boiler. It is of value only when the boilers are used in gravity circulating systems.

Connections to Mains

Fig. 8 shows two methods of taking off branches from mains on one-pipe systems. They apply equally well, however, to other systems of up-feed piping. On one-pipe plants the branches are always made one pipe-size larger than the risers or the radiator connections which they serve. The method of carrying a main past an obstructing beam shown in Fig. 9 may be used advisedly with any system of piping.

Fig. 10 shows a detail of piping at the end of a single-pipe main or at any point where it becomes desirable to rise for a fresh start at a higher level, the steam rising off the top of the main and the water draining

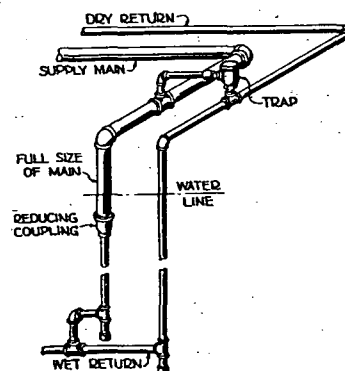


FIG. 14. DRIPPING ENDS OF SUPPLY AND DRY RETURN MAINS. (DRY RETURN TOO SMALL TO BE VENTED)

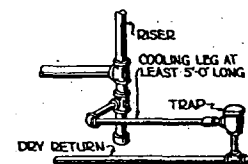


FIG. 15. DRIPPING HEEL OF RISER INTO DRY RETURN. (A GATE VALVE IS RECOMMENDED AT THE INLET SIDE OF THE TRAP)

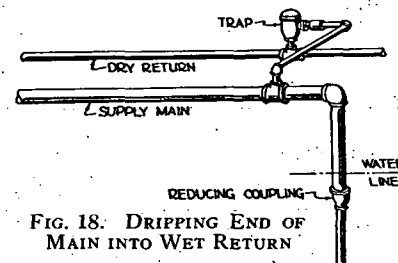


FIG. 18. DRIPPING END OF MAIN INTO WET RETURN

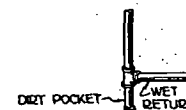


FIG. 16. DIRT POCKET CONNECTION

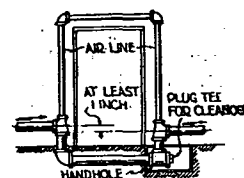


FIG. 17. LOOPING DRY RETURN MAIN AROUND OPENING

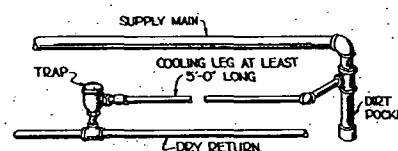


FIG. 19. DRIPPING END OF MAIN INTO DRY RETURN. (A GATE VALVE IS RECOMMENDED AT THE INLET SIDE OF THE TRAP)

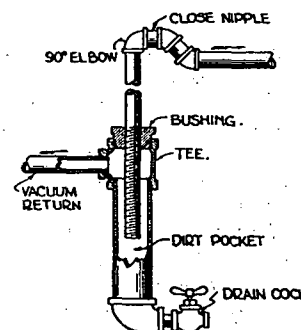


FIG. 20. DETAIL OF MAIN LIFT FITTING TO VACUUM PUMP

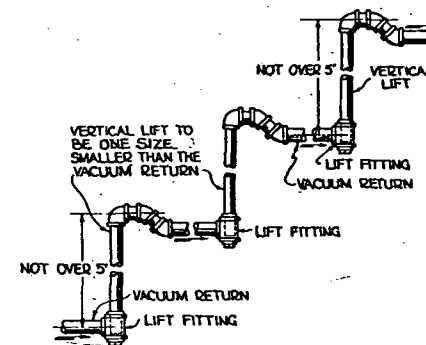


FIG. 21. SERIES OF LIFT FITTINGS WHERE LIFT IS MORE THAN 5 FT.