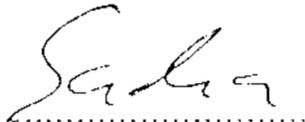
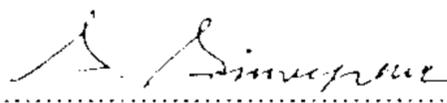


THESIS TITLE : STUDY OF MINIMUM COST IN LOOP PIPE NETWORKS - A CASE STUDY

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:

ABSTRACT

This study reports the behavior of minimum cost (C_{min}) against pipe sizes for a loop pipe network comprising five pipes forming two loops with one supply node and three demand nodes. The pipe network is shown in Figure 1.

It is found that C_{min} occurs when minimum number of pipes (three pipes) are used to convey water from supply node to demand nodes as shown in Figure 2.

However, two more ways to convey water from supply node to demand nodes using three pipes are possible as shown in Figures 3 and 4. Out of all these three possibilities, the one in Figure 2 yields the minimum cost.

In addition to the above findings, this study also reports computation steps required in the determination of C_{min} and associated pipe diameters.

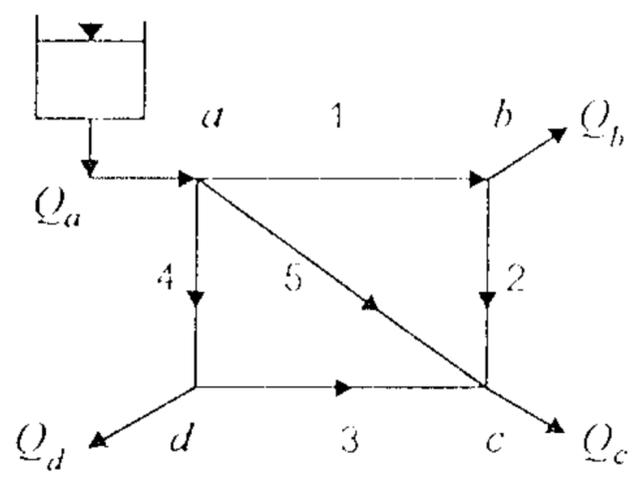
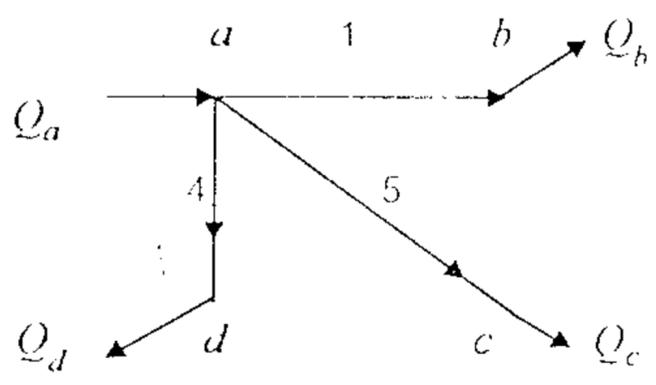
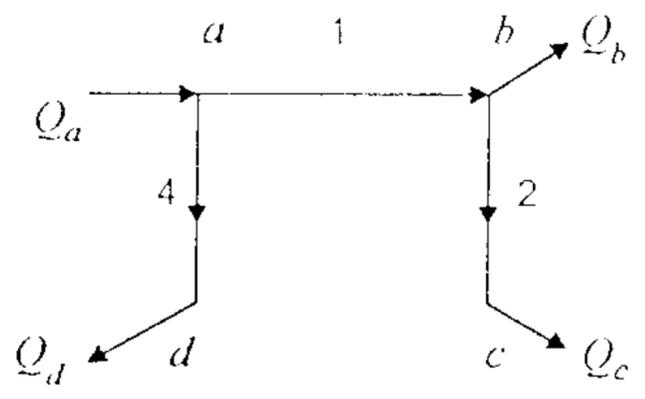


Figure 1



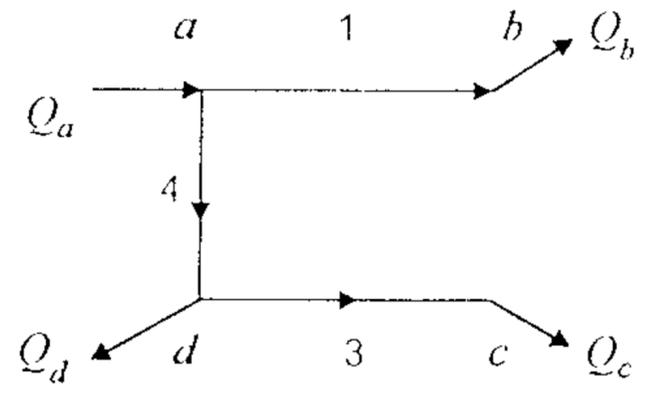
COST = 2,931.21 baht

Figure 2



COST = 3,276.69 baht

Figure 3



COST = 3,683.18 baht

Figure 4