

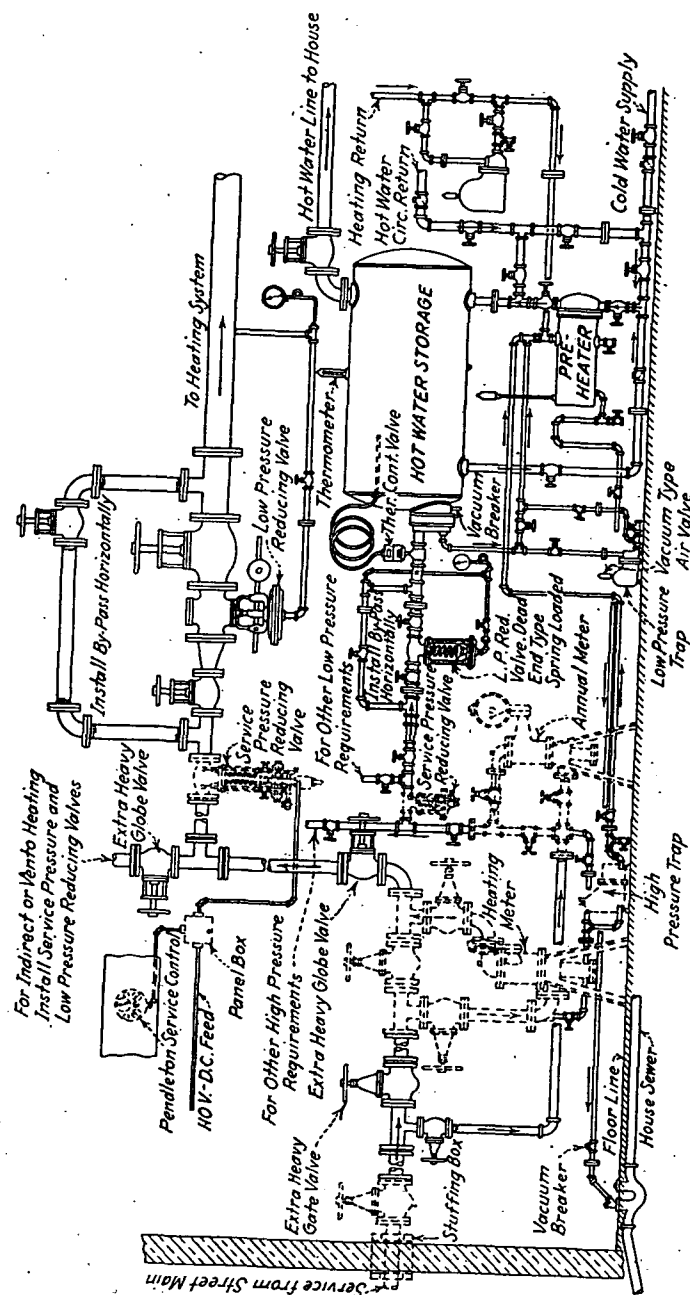


FIG. 3. TYPICAL SERVICE INSTALLATION

## CHAPTER 25—DISTRICT HEATING

TABLE 3. CAPACITY OF RETURNS FOR UNDERGROUND DISTRIBUTION SYSTEMS IN POUNDS OF CONDENSATE PER HOUR

| SIZE OF PIPE IN. | PITCH OF PIPE PER 100 FT. |        |         |         |         |        |        |
|------------------|---------------------------|--------|---------|---------|---------|--------|--------|
|                  | 6"                        | 1'     | 2'      | 3'      | 5'      | 10'    | 20'    |
| 1                | 448                       | 998    | 1890    | 2240    | 3490    | 5490   | 7490   |
| 1 1/4            | 1740                      | 2490   | 3990    | 4880    | 6480    | 9480   | 13500  |
| 1 1/2            | 2700                      | 4190   | 5740    | 7480    | 9480    | 14500  | 20900  |
| 2                | 4980                      | 7380   | 10700   | 13900   | 16900   | 24900  | 36900  |
| 3                | 13900                     | 22500  | 30900   | 37400   | 50400   | 74800  | 105000 |
| 4                | 30900                     | 44800  | 64800   | 79700   | 105000  | 154000 | 229000 |
| 5                | 54800                     | 79800  | 120000  | 144800  | 195000  | 294000 | 418000 |
| 6                | 90000                     | 138000 | 187000  | 237000  | 312000  | 449000 | -----  |
| 8                | 190000                    | 277000 | 404000  | 508000  | 660000  | 938000 | -----  |
| 10               | 344000                    | 498000 | 724000  | 900000  | 1190000 | -----  | -----  |
| 12               | 555000                    | 798000 | 1148000 | 1499000 | 1990000 | -----  | -----  |

\*Size of pipe should be increased if same carries any steam.

TABLE 4. STEAM REQUIREMENTS OF BUILDINGS FROM OUTSIDE MAINS IN POUNDS OF STEAM PER HOUR

| SQ. FT. RADIATION | STEAM PRESSURE OF SERVICE MAIN LB. GAGE |       |       |       |       |       |       |       |
|-------------------|-----------------------------------------|-------|-------|-------|-------|-------|-------|-------|
|                   | 0                                       | 10    | 20    | 60    | 100   | 140   | 180   | 200   |
| 200               | 61.8                                    | 61.2  | 60.8  | 59.8  | 59.4  | 59.2  | 59.0  | 58.8  |
| 400               | 123.6                                   | 122.5 | 121.6 | 119.6 | 118.8 | 118.4 | 118.0 | 118.0 |
| 500               | 154.5                                   | 153   | 152   | 149.5 | 148.4 | 148   | 147.5 | 147   |
| 750               | 232                                     | 230   | 228   | 224   | 223   | 222   | 221   | 220   |
| 1000              | 309                                     | 306   | 304   | 299   | 297   | 296   | 295   | 294   |
| 2500              | 774                                     | 765   | 760   | 747   | 743   | 740   | 737   | 735   |
| 5000              | 1545                                    | 1530  | 1520  | 1495  | 1485  | 1480  | 1475  | 1470  |
| 7500              | 2320                                    | 2300  | 2280  | 2240  | 2230  | 2220  | 2210  | 2200  |
| 10000             | 3090                                    | 3060  | 3040  | 2990  | 2970  | 2960  | 2950  | 2940  |
| 12500             | 3865                                    | 3820  | 3800  | 3740  | 3720  | 3700  | 3690  | 3680  |
| 15000             | 4640                                    | 4590  | 4560  | 4480  | 4460  | 4440  | 4420  | 4410  |
| 20000             | 6180                                    | 6120  | 6080  | 5980  | 5940  | 5920  | 5900  | 5880  |
| 25000             | 7740                                    | 7650  | 7600  | 7470  | 7430  | 7400  | 7375  | 7350  |
| 30000             | 9290                                    | 9180  | 9120  | 8970  | 8910  | 8890  | 8850  | 8830  |
| 40000             | 12380                                   | 12250 | 12160 | 11960 | 11880 | 11840 | 11800 | 11780 |
| 50000             | 15450                                   | 15300 | 15200 | 14950 | 14850 | 14800 | 14740 | 14700 |
| 75000             | 23200                                   | 22800 | 22800 | 22400 | 22300 | 22200 | 22100 | 22000 |
| 100000            | 30900                                   | 30600 | 30400 | 29900 | 29700 | 29600 | 29500 | 29400 |
| 125000            | 38650                                   | 38300 | 38000 | 37400 | 37200 | 37000 | 36900 | 36800 |
| 150000            | 46400                                   | 45900 | 45600 | 44800 | 44600 | 44400 | 44250 | 44100 |
| 175000            | 54200                                   | 53600 | 53200 | 52300 | 52000 | 51800 | 51600 | 51400 |
| 200000            | 61800                                   | 61200 | 60800 | 59800 | 59400 | 59200 | 59000 | 58900 |

Each square foot of radiation transmits 250 B.t.u. per hour.

Table for steam entering buildings at stated pressures then reduced to required amount and condensed in radiator to water at 212 deg. Fahr. 0 pressure. The above table also allows 20 per cent for piping loss in the building.

The offset lengths which are required for expansion in the case of wrought iron pipe may also be used for brass pipes, using in each case the actual amount of expansion in the piping.