

# MUNICIPAL DEPARTMENT

## MODEL TENDERING.

THERE cannot be too little secrecy in tendering. In the first place, when full information is given it becomes evident whether dishonest or inadequate prices are accepted. It is constantly said that totals are far too low, and there is consequently a common opinion that the mean between the highest and lowest tenders is usually the fairest, and has the best right to be accepted. When some clue to details is given it can be inferred whether a contractor has special facilities for dealing with a particular class of work. The publication of ample information is also a boon to contractors as well as to architects and engineers. The following announcement of the tenders received by Messrs. Potter & Folwell, engineers, New York, on Dec. 20, for drainage work at West Pittston, Pa., is a model of above-board dealing:—

General conditions.—Character of digging:—Loam, average depth 6 feet, underlaid with gravel. No rock boulders or quicksand. Vitrified pipe, single strength, up to 20-inch, remainder double strength. Brick sewers 8-inch work, inner ring to springing line laid in Portland cement. Concrete bottom in egg-shaped sewers. Right reserved to omit construction of any portion of the work. Monthly payments 85 per cent. Time of completion, July 1, 1895. McGarry & McGowan, Akron O., \$36,459.72; Acock & Son, Trenton, N. J., \$39,266.17; Ryan & Avery, Watertown, N. Y., \$39,553.17; A. Emonson, Carlisle, Ark., \$39,602.61; Headley & Christie, Newark, N. J., \$42,320.11; T. H. Ryan, North Tonawanda, N. Y., \$42,376.65; Corcoran & Connell, Pittsburg, Pa., \$43,022.47; W. Franklin, Buffalo, N. Y., \$43,319.63; A. W. Bryne, West Medford, Mass., \$44,531.35; Henry M. Dowd & Co., Orange, N. J., \$45,481.50; P. J. Cleary, Shenandoah, Pa., \$45,780.3; James McCloud & Co., Williamsport, Pa., \$46,160.90; Coon, Mooney & Co., Kingston, Pa., \$46,268; Sanders & Houston, Pittsburg, Pa., \$46,462.74; Lindsay & Van Loon, Plymouth, Pa., \$47,672.94; Dunn Brothers, Scranton, Pa., \$47,915.79; Hart & Gibbons, Wilkesbarre, Pa., \$51,152.46; Batton & Van Bussum, New York City, \$51,372.57; Brodhead & McConville, Scranton, Pa., \$54,350.3; R. C. Mitchell, Plains, Pa., \$54,929.17; Fredenck Hurdler, Wilkesbarre, Pa., \$56,670.93; T. M. Lesher & Son, Easton, Pa., \$62,064.3; Sullivan Brothers, Philadelphia, Pa., \$68,999.9.

The lowest detail figures were:—

Lowest bidder for tile-sewer, Acock & Son, Trenton, N. J.—6,685 feet of 8-inch pipe in trench under 8 feet deep, 33 cents per foot; 3,992 feet of 8-inch pipe 8 to 10 feet deep, 38 cents per foot; 635 feet of

8-inch pipe, 10 to 12 feet deep, 43 cents per foot; 1,225 feet of 8-inch pipe, 12 to 14 feet deep, 48 cents per foot; 330 feet of 8-inch pipe, 14 to 16 feet deep, 53 cents per foot; 250 feet of 8-inch pipe, 16 to 18 feet deep, 58 cents per foot; 455 feet of 8-inch pipe, 18 to 20 feet deep, 63 cents per foot; 180 feet of 12-inch pipe, under 8 feet deep, 43 cents per foot; 750 feet of 12-inch pipe, 8 to 10 feet deep, 48 cents per foot; 4,332 feet of 15-inch pipe, 7 to 12 feet deep, 52½ cents per foot; 565 feet of 18-inch pipe, under 8 feet deep, 63 cts. per foot; 950 feet of 18-inch pipe, 8 to 12 feet deep, 68 cents per foot; 600 feet of 20-inch pipe under 8 feet deep, 75 cents per foot; 1,260 feet of 20-inch pipe, 8 to 12 feet deep, 80 cents per foot; 350 feet of 22-inch pipe, under 8 feet deep, 86 cents per foot; 1,000 feet of 22-inch pipe, 8 to 10 feet deep, 91 cents per foot; 1,230 feet of 24-inch pipe, under 8 feet deep, \$1.23 per foot; 500 feet of 24-inch pipe, 8 to 10 feet deep, \$1.28 per foot; 400 feet of 24-inch pipe, 12 to 14 feet deep, \$1.38 per foot; 540 feet of 30-inch pipe, under 8 feet deep, \$2.24 per foot; 940 feet of 30-inch pipe, 10 to 16 feet deep, \$2.40 per foot; 325 feet of 30-inch pipe, 20 feet deep, \$2.60 per foot; 406 8 by 6-inch Y's, 25 cents each; 30 12 by 6-inch Y's, 45 cents each; 139 15 by 6-inch Y's, 65 cents each; 48 18 by 6 inch Y's, 90 cents each; 58 20 by 12-inch Y's, \$1.20 each; 51 30 by 12-inch Y's, \$4.75 each; 40 22 by 12-inch Y's, \$1.50 each; 63 24 by 12-inch Y's, \$3 each; total \$19,598.16.

Lowest bidder for brick sewers, McGarry & McGowan, Akron, O.—260 feet of 2 feet 4 inches by 3 feet 6 inches, 12 to 16 feet deep, \$2.45 per foot; 410 feet of 2 feet 4 inches by 3 feet 6 inches, 16 to 20 feet deep, \$2.75; 1,205 feet of 2 feet 6 inches by 3 feet 9 inches, 10 to 16 feet deep, \$2.40; 485 feet of 2 feet 10 inches by 4 feet 3 inches, under 8 feet deep, \$2.50; 325 feet of 2 feet 10 inches by 4 feet 3 inches, 8 to 12 feet deep, \$2.60; 363 feet of 3 feet 4 inches by 5 feet under 8 feet deep, \$2.90; 375 feet of 3 feet 4 inches by 5 feet, 8 to 10 feet deep, \$2.95; 150 feet of 36 inches, 10 to 6 feet deep, \$2.50; 257 feet of 50 inches, 8 to 13 feet deep, \$3; total, \$10,018.95.

Lowest bidder for appurtenances, Acock & Son, Trenton, N. J.—Eight flush tanks, \$30 each; 37 manholes under 10 feet deep, \$25 each; manholes over 10 feet deep, per foot extra, \$3 each; 18 intersecting manholes, \$30 each; drop manholes, per foot of drop, \$3; 85 deep-cut connections, 400 feet, at 25 cents per foot; two lamp-holes, \$12 each; 44 catch-basins, \$50 each; 38,600 lbs. cast-iron covers for man-holes, &c., 2 cents per lb.; 1,000 feet, hoard measure, oak timber in foundations, \$30 per M.; 5,000 feet, board measure, hemlock sheathing, \$15 per M.—total \$4,906.

The city water commissioner of Victoria, B. C., reports 178,371 feet of pipe, 4 inches in diameter and upwards, in the city distribution system. The strict enforcement of the by-law requiring a separate service for each tenancy is urged.

## THE ABRASION TEST FOR PAVING BRICK.

The ordinary process of putting brick into a foundry rattler and revolving the same with castings for the purpose of determining the comparative qualities of the different brick for resistance to wear, writes, A. Humphreys, in the Clay Worker is far from satisfactory.

It introduces elements which are entirely foreign to the purpose, because the brick are thus subjected to influences which are never present in their actual use as paving material. While the brick withstands a shock of hundreds or thousands of pounds while occupying its place in a well-laid street, where all its strokes and shocks are upon the plain, smooth upper surface, it is well known that a slight stroke or shock from even a light hammer, when applied at a certain angle, and especially upon the flat side of even the best paving brick, may break off a considerable piece from the corner thereof.

Now this latter is just what happens in the ordinary rattler test, as, at present conducted, and the writer knows of instances in which the test of pavers, receiving just this kind of shock from a piece of casting, or even an inferior brick, have emerged from a test with a grade far below what they deserved.

What is wanted for this test is something as nearly as possible like the wear the brick gets when laid on the street, and the writer would suggest the following method: Take a rude cylindrical crate, the length and diameter of which shall equal that of the foundry rattle. Inside of this construct a cylinder of brick, among which are the specimens you desire to test, and place therein the necessary foundry castings. With the ends inclosed, place this brick cylinder within the rattler and revolve it as long and rapidly as is desirable.

By this method the brick all have an equal chance, are subjected to the same kind and amount of wear, and very much more like the ordinary street wear than in the old process.

A trial of a new contrivance for scraping water supply pipes was made in the presence of the Chief Engineer of Water Supply, Victoria, at Geelong recently, when seven chains of 3 in. pipe, considerably corroded, were cleared in three hours by a gang of five men. The instruments consist of a spiral cutter made of spring steel, and acting upon a steel shaft, so that its diameter can be expanded or contracted by operating a screw. The cost of scraping by this efficient means is not more than 6d. per chain.

Interested persons at Mannheim, Germany, have been investigating gas and water meters, with results not at all favorable to the meters themselves. Many of them registered far more than was consumed and, as a rule, they were neither accurate nor regular. The vibrations due to bad plumbing and other causes accounted for some of the waste, and a check-valve and air-chamber were recommended in order to equalize the pressure. It is said that very sudden shutting off of either gas or water will cause the meter to over-register.