

MUNICIPAL ENGINEERS, CONTRACTORS AND MATERIALS

plastering, John Kennedy, Nassagaweya; building will be 30x68 ft., pressed brick, with stone foundation. J. F. Brown, Toronto, architect.

EMBRO, ONT.—Improvements to Knox church:—Clarkson Bros., of Woodstock, carpentry; William McKay, Embro, plastering; Col. Lewis, London, painting; Valley City Seating Co., Dundas, seating.

SARNIA, ONT.—Tenders for granolithic pavements were received by the council as follows: Simpson & McDonald, 12½¢ per square foot; Wm. Ellis, 12¢ for all walks south of George street, 11½¢ for all north of George, and 15¢ for crossings; Joseph Ellison, 15¢. Name of successful contractor not learned.

TORONTO, ONT.—The Property Committee of the Public School Board on Monday last awarded the following tenders for galvanized iron and tinsmith work repairs:—Brant street, Phoebe street, and John street, H. Tucker, \$283; Church street and McCaul street, \$339; Cottingham street and Huron street, \$323, A. Matthews; Crawford street, Givens street and Orphans home, G. Duthie, \$260; Dovercourt and Perth ave., Douglas Bros., \$289; Duke street, George street, and Sackville street, A. Matthews, \$279; Gladstone avenue, Brock street and Shirley street, Douglas Bros., \$92; Hamilton street and Leslie street, A. B. Ormsby & Co., \$278.

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MUNICIPAL
DEPARTMENTNOTES ON SPECIFICATIONS FOR CAST
IRON AND GAS PIPES.*

C. A. MEISSNER, Londonderry, Nova Scotia.
(Concluded.)

And yet when a pipe breaks or shows defect, the statement is frequently made that it was not tested. To the uninitiated this may seem a correct conclusion, yet this very question of pipes that have stood the pressure and hammer tests, breaking or showing defects at a later period, is one that has attracted the attention of the best water engineers on this continent, and been discussed in the meetings of their societies without arriving at any definite conclusion as to its remedy. The tenacity of cast iron is very great and I consider the reason of subsequent breaking due to the handling the pipe receives in yard, on cars, and in trenches, which develops by fracture or concussion the weak spots that were able to resist the pressure and hammer test. The percentage of such breaks, however, is so small that if the citizens will look on it in honesty and fairness they will find no real cause for anxiety or complaint, for few pipe develop such weakness and have to

* Paper Read before Canadian Mining Association.

be replaced. It is like anything else—we cannot yet reach perfection in all work which we undertake.

In one respect the Admiralty specification differs from those used on this continent, and that is that it calls for 9 ft. lengths, while pipe made here are twelve feet lengths. The greater length saves a great deal of labor and extra lead in reducing the number of joints by one-fourth, and yet the pipe are as easy to handle and to lay in trench. I am not aware of the reason for this among Scotch and English makers.

There is one more feature that I would warn town officials against, and that is not to undertake a system without the services of an engineer, and, preferentially of an engineer who held some previous experience in waterworks construction, though his whole training will enable a capable engineer to master the details and difficulties of a smaller system. This is particularly the case where special classes of pipe are put in, such as flexible joint for crossing a river, etc. I have seen some very unfortunate and costly experiments made with this pipe because the towns begrudged the few dollars to an engineer. Yet the few dollars would have saved the town many hundreds. Such work must be studied out; it must be done right or it will invariably fail, and likely as not the blame laid on the pipe, when it is the method of "rule of thumb" and "penny wise and pound foolish" that is entirely to blame.

I trust some of these points will prove of interest and value, and that a little thought and money expended in investigating these matters will avoid many

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