LETTERS TO THE EDITOR

Municipal Consulting Engineers.

Sir,—In connection with your postscript of the 28th ult. re an editorial in your March 15th issue entitled "Municipal Consulting Engineers," we had read this editorial and were much surprised to learn its contents.

Our firm considered answering the editorial several times, but we did not do so, partly owing to the fact that Mr. Godfrey's deduced statements contained therein were so evidently erroneous that we did not think them worthy of consideration, and partly owing to the fact that we had been rather busy of late, and could not take time to discuss them.

We may say that in our experience in the West we have very seldom exceeded our estimates. In one town in which we were engaged as consulting engineers the town informed our firm that they were prepared to expend $200,000 on municipal improvements, and we were accordingly requested to prepare their improvements to accommodate this amount. When the contracts were awarded they totalled to $198,000.

In another town in which we were engaged as engineers we gave them an estimate of $130,000 on the proposed works, and the contracts were awarded at $125,000. In no case in our experience have we exceeded our estimates more than a very small percentage of the actual amount expended, and as you will know, conditions often arise which could not be provided against when making the estimates, but creep in during the progress of the work.

Of late years, or since the money market became so stringent, and particularly since war broke out, many of the municipalities in the West have been compelled to sell their debentures at a discount, the by-law having already been prepared and voted on before the war started; some of them sold as low as 20 per cent. discount. This, you can see, would create quite a deficit in, say, a $200,000 by-law. Also, in almost every case while the work is progressing the councils decide on further improvements or additions which makes it necessary for them to prepare a new by-law. The people often receive the impression that the amount of the new by-law should have been included in the original estimate, and it has been observed that when the actual cost exceeds the original estimate by a few thousand dollars, that some councillors, we must say, have made capital of this small amount as an excuse for having to go to the people again, rather than explain to them that they had approved of certain additions, as well as selling their debentures below par.

We were very pleased to learn that in your answer to Mr. Godfrey you did not consider that his statements should be taken seriously, and we feel certain that your remarks will be appreciated by many qualified engineers throughout the Dominion.

We are also disposed to consider that other consulting engineers acting throughout the West will have had much the same experience as that cited above, and in our opinion it would be quite preposterous that any reputable firm of consulting engineers should deliberately underestimate on any proposed improvements for the purpose of having the people carry a particular by-law, which they knew would not furnish the required amount to complete the work.

MURPHY & UNDERWOOD,
Per J. E. UNDERWOOD.

Saskatoon, Sask., April 2nd, 1917.

Sulphur in Road Oils.

Sir,—The clause regarding the sulphur and acid content of road oils, referred to in your editorial of the 29th inst., and the opinions of chemists on this clause as contained in the same article, once more raises the question of the desirability of more co-operation between engineers and chemists. Much has been wirtten in the past on this subject with evidently but little avail.

So long as the chemists are called upon to make examinations of materials used for engineering purposes it is only reasonable to expect that they should be consulted when the specifications for these materials are prepared, but at present this course is the exception rather than the rule. It occurs all too frequently that, owing to the nature of the specification, the value of the analysis is largely nullified and no redress can be had from the contractor. Specifications are too often made up in a patchwork manner from other specifications and put together without considering whether the parts are compatible with one another. As an example of this I might mention one specification that I came across some time ago. This was for asphalt, and one clause stated that Trinidad and other asphalts could be tendered upon, whilst another clause excluded Trinidad by specifying that the asphalt must contain at least 90 per cent. of bitumen, soluble in carbon bisulphide.

Some specifications merely state that the material shall be of the best quality, a statement that is delightfully vague and open to many (mis)interpretations. Others go to the other extreme, and contain a number of clauses defining with great minuteness the physical and chemical attributes of the material required. More often than not, no attempt is made to ascertain if the material is in accordance with the standards set forth, with the result that the contractor quickly develops contempt for these clauses and ultimately ignores them.

The obvious remedy for these difficulties is closer co-operation between engineers and chemists, and a step which, I think, is in the right direction was made last year by the Society of Chemical Industry by the appointment of a committee to study and recommend standard methods of analysis. When this matter was discussed in Montreal I was successful in having a resolution adopted asking for the co-operation of societies engaged in kindred work, and amongst those named was the Society of Civil Engineers. Standard methods of analysis are largely chemical matters, but when the material examined is used in engineering practice the engineers are vitally interested. This is especially so when chemical and physical constants are referred to in contracts and standard methods are specified. As an example of this I would cite the contract for the new filtration plant in Toronto. This, I believe, states that certain efficiencies are to be guaranteed when the tests are made in accordance with the standard methods of the American Public Health Association. The contract was let in 1914, and since that date the methods of analysis have changed very materially in some respects, and if the present standard methods were used it is possible that they might show very different results. It is, therefore, in the interest of engineers to endeavor to keep methods of analysis as stable as possible and to prevent yearly changes that are often evanescent and futile.

JOSEPH RACE,
City Bacteriologist and Chemist.

Ottawa, March 31st, 1917.