

obtaining a uniform sand specification. While steps in this direction have been taken, insufficient progress has been made to enable the committee to offer a revised specification. It is anticipated that during the coming year a satisfactory specification for concrete sand will be evolved.

"Progress is being made in the preparation of further specifications for materials, but they are not sufficiently advanced to submit to the society. The attention of the society should be drawn to the fact that those submitted in the last annual report of this committee were of the nature of a progress report only, and were not put forward for use by the membership, but for discussion only.

"Progress has been made with regard to the collecting of information concerning the construction of pavements. During the early part of the year blank forms were sent to the engineers of sixty of the cities and large towns of the Dominion with a request that pavements constructed under their supervision be reported on. The number of reports received, including those summarized in the last annual report of the committee, makes a total of 122 pavements, which number will be increased considerably before the end of the year. This means that your committee has under observation, through the co-operation of the municipal engineers throughout the Dominion, the aforementioned number of pavements."

Walter J. Francis moved that the meeting receive the report and recommend to council that the committee be continued. Sir John Kennedy enquired whether the committee was not getting perilously near teaching municipalities how to build roads. He thought the tendency dangerous if carried too far.

Electro-Technical Commission

Secretary Keith read the following report of the Electro-Technical Commission:—

"The committee begs to report that during 1917, as in the two years previous, the commission's activities have, of course, been considerably curtailed, though the central office in London has done all that was possible under the circumstances to keep the organization together and to forward the work.

"To this end, and because of the importance of the subject, a conference on the rating of electrical machinery was held in London in September, the meetings being attended by delegates from the British and United States committees, and by A. P. Trotter, consulting engineer, of London, who very kindly accepted our chairman's invitation to represent the Canadian committee.

"When the work of this conference is finished, and all details settled, another great step will have been made towards world-wide electrical standardization, with all its attendant advantages. For instance, to mention just one, all tenders, whether from manufacturers of the same or different nationalities, will then be comparable on a uniform basis as to performance claims, guarantees, etc.—a condition that has not always obtained in the past, although obviously most desirable."

Walter J. Francis moved that the report be received and the committee continued. Carried.

Steel Highway Bridge Specifications

P. B. Motley, chairman of the committee on steel bridge specifications, presented the following report:—

"I beg herewith to transmit a specification for steel highway bridges, including movable bridges, as recommended by your committee on steel bridge specifications.

"This committee has had eight general meetings, as well as numerous sub-committee meetings, during the year, attended by most of the Montreal members, and the results of the meetings have been communicated to the branch members for their information and remarks.

"After considering all discussions sent in, draft specifications for highway bridges have been respectfully submitted to the society. The committee has also given some attention to the existing specification for fixed steel bridges, and is of the opinion that it be corrected and revised as regards sequence, etc., generally in accordance with the highway bridge specification now presented. It was, however, found impossible to deal with the matter during this season.

"The specifications resulting from the work of this committee are intended to be recommended practice for use of public bodies, such as the federal and provincial governments, commissions and municipalities. They are not intended to take the place of a duly qualified consulting engineer, but to form a basis for specifications drawn up to meet the requirements of the case in hand.

"It was thought by some members of the committee that it would be proper to recommend a series of suitable loadings for given widths and classes of highways. These are put in the form of a short preamble, and are capable of variation and interchange by the user.

"A schedule of information to be provided bidders is also attached.

"It is recognized that there are a number of clauses that are open to discussion, such as impact, unit stresses, column formula, lattice bars, etc. All these controversial points have received careful attention, and, while they are still in a more or less inconclusive stage, it is thought that the specification represents the best and most recent practice, and it is hoped that public bodies will be inclined to use it as extensively as possible, so that uniformity, and, therefore, economy may be secured in the bridge construction of this country.

"While the earlier drafts of the report have been sent to the branch members of the committee, it has been impossible to send them the final draft, because the work of revision has continued to the present time.

"As the work of the committee is continuous in its nature, it is recommended that it be continued to include the revision of the present railway fixed bridge specification and reinforced concrete bridges."

R. F. Uniacke said that the Ottawa branch thought that the specification was not so full as that in use by the Ontario Department of Highways and the Ontario Railway and Municipal Board, but that as the specification had already been printed, he moved that it be received.

W. Chase Thomson said there are some errors in the tables which should be corrected before the final specification is printed. Mr. Motley replied that there are no typographical errors, but that possibly the arrangement of some of the tables could be altered so as to make them clearer.

Prof. Mackay said that there are some formulæ and requirements in the specification which might be criticized, but that, as the specification is still tentative and in draft state, that there was no need to take up the time of the meeting by discussing these technical points, as no doubt the committee would gladly give earnest consideration to all suggestions anyone might make tending toward the improvement of the specification, and that these suggestions could be brought before the committee from time to time during the coming year.