The Canadian Engineer

Established 1893

A Weekly Paper for Civil Engineers and Contractors

Terms of Subscription, postpaid to any address:

One Year Six Months Three Months Single Copies

\$3.00 \$1.75 \$1.00 10c.

Published every Thursday by

The Monetary Times Printing Co. of Canada, Limited

President and General Manager JAMES J. SALMOND Assistant General Manager ALBERT E. JENNINGS

HEAD OFFICE: 62 CHURCH STREET, TORONTO, ONT. Telephone, Main 7404. Cable Address, "Engineer, Toronto." Western Canada Office: 1206 McArthur Bldg., Winnipeg. G. W. Goodall, Mgr.

PRINCIPAL CONTENTS Analysis of Concrete-Proportioning Theories, by Roderick B. Young 487 491 Letters to the Editor Economic Status of Guarantees for Pavements 492 on Roads and Streets Six Hundred Manitoba "Good Roadsters".... 493 Frost Heaves Street Railway Paving Slabs in 493 Edmonton, by C. L. DeVall Inland Waterways Conference Recovery of Valuable Constituents of Garbage, by S. A. Greeley No Room for Trade Unionism in Engineering Profession, Say Directors of American Association of Engineers Ontario Provincial Division, E. I. C. 500

AWARD HIGHWAY CONTRACTS EARLY!

I N a letter addressed to the heads of the State Highway Departments, Thomas H. MacDonald, chief of the Bureau of Public Roads, United States Department of Agriculture, urges the state departments to place under contract during December and January as great a mileage of roads as possible.

Mr. MacDonald estimates the amount of money available for road work in the United States during 1920 to be \$633,000,000, or more than four times as much as has been expended during any previous year for like purposes. He calls attention to the lack of open top cars for transporting road materials, and says that this deficiency must be made good by using these cars more efficiently and by awarding contracts sufficiently early to permit contractors to obtain their materials during the season when the open top cars are not in the greatest demand.

Last spring the number of open top cars that were idle in the United States was estimated at over 250 000, but as the season advanced and road contracts were actually under way, acute car shortage manifested itself generally through-

out the country.

Should the movement of coal demand the cars, or should there be any railroad labor trouble, highway work would be sadly interfered with in case the contracts are awarded too late, inasmuch as road materials are not perishable and are late, inasmuch as that would be moved on the rails.

What Mr. MacDonald says in regard to conditions in the United States applies with equal or greater force to Canada. The placing of materials in storage piles involves some expense, but this cost is small in comparison to the loss occasioned by the lack of materials when the contractor's organization is waiting. Contracts which are not awarded during the winter months may have little opportunity of being supplied with materials which require railway transportation.

Another good feature of the early award of highway contracts is that the contractors are encouraged to place their orders early, and material producers are given an opportunity to operate their plants during all seasonable weather. Not only does this help the car shortage, but it generally results in lower prices.

THE ASPHALT ASSOCIATION

THOSE who are interested in the movement for better roads and streets in Canada will note with pleasure the strong engineering staff which is being built up by the Asphalt Association. As is now undoubtedly well known by the readers of our paper, this association was formed a few months ago by a number of competing asphalt producers for the purpose of ensuring not only the widest possible use of their product, but also the most efficient use. In forming an association of this kind for general promotion and research work, the asphalt producers are merely getting into line with the service policy that is now rapidly being adopted by all industries that are conducted upon the best business principles.

Highway engineering in Canada will undoubtedly benefit by the formation of the Asphalt Association. The service which its engineers and laboratories can render will not be any the less appreciated for the fact that these engineers are at the same time promoting the sale and use of asphalt. All service has a raison d'être, and good service, whether in engineering or other fields, is always entitled to recognition and reward. The service which the Asphalt Association will render will undoubtedly be met with a marked increase in the use of that material.

The officers of the Asphalt Association indicate its high standing in point of responsibility for data published, and also its independence from a competitive standpoint. They are 25 follows:—

President, J. R. Draney, of the United States Asphalt Refining Co.; vice-president, W. W. McFarland, of the Warner-Cuinlan Asphalt Co.; treasurer, N. G. M. Lykx, of the Freeport Mexican Fuel Oil Co.; secretary, J. E. Pennybacker, formerly secretary of the U. S. Highways Council and formerly of the U. S. Bureau of Public Roads; chief of research department, Prevost Hubbard, former chief of tests and research of the U. S. Office of Public Roads.

The intimate relation which both Mr. Pennybacker and Mr. Hubbard have had with the good roads movement on this continent for the past fifteen or twenty years is too well known for them to need any introduction to Canadian engineers. Bruce Aldrich, the engineer who will be in charge of the affairs of the association in Canada, is not so we'll known in this country, but among engineers in the United States, particularly in the south, his experience and ability have long been recognized. His work in connection with street improvement and maintenance in Baltimore has well trained him for his new duties. Mr. Aldrich will not endeavor alone to solve the many paving and other prob-lems which may be placed before him, but will merely serve to a certain extent as a link between the Canadian territory and the authoritative laboratory and engineering facilities which the Asphalt Association is rapidly establishing.

AMERICAN ASSOCIATION OF ENGINEERS

REMARKABLY rapid has been the growth of the American Association of Engineers. Founded in 1915, this association had a membership of approximately 250 at the beginning of 1916, 750 at the beginning of 1917, 1,500 at the beginning of 1918 and 2,500 at the beginning of this year. The membership of the association last Thursday was 8,866, and the officers have arranged a membership drive, to be carried out the first two weeks of December, which will undoubtedly boost the number to five figures.

Compared with the growth of the four main engineering societies in the United States, the American Association of Engineers has had a record-breaking career. It now has about