

The necessary information for this book is sketched in pencil when the installation is made. A complete sketch is made showing the street lines; location of pipe with reference to these lines and proper measurements; location of valves, hydrants, branches and specials is also indicated; dead ends; kind of material used; name of foreman making the installation; character of the digging; and depth to which pipe is laid.

There also appears on this page a symbol which shows, when checked, that the information given here has been recorded in its proper place; for example:—

G. C. means gate card, and when checked that the information has been placed on the proper card and filed.

D. E. means dead end, that the proper record has been made of the dead end on cards kept for this purpose.

H. means hydrant, and that it has been recorded in the proper hydrant book.

M. 1, M. 2, M. 3, M. 4, and M. 5 indicate that the information on this page has been recorded on Maps 1, 2, 3, 4, and 5. These maps are large maps on a scale of 400 ft. to the inch, which show the entire distribution system, with location of hydrants, valves and street mains indicated according to the nomenclature adopted. Maps of this kind are kept in various convenient places for reference, as in the working office and in the office of the superintendent and engineering department.

The book is indexed by streets with reference to the book number and page number on which the original sketch appears, and kept properly filed. No other detail record of main locations is kept. It has been found that all the records necessary or desirable can be kept in this way. As much or as little detail as desired can be entered in this book.

None of the records, either in the books or on cards, is drawn to scale.

Maps showing the distribution system as a whole, are usually made with the width of the streets exaggerated so that the piping system stands out as the main feature on the map. It does not take an expert draftsman to do any of this work. Anybody who is a fairly good letterer and can use a straight line pen and is neat, can do the work satisfactorily.

### "BREAD AND CIRCUSES"\*

BY HON. FRANKLIN K. LANE  
*Secretary of the Interior, U.S. Government*

ONE can judge the civilization of a nation, or of any part of a nation, by the character of its highways. Those who are engaged in the business of developing the highways of America, and putting them to greater use, may properly conceive themselves as engaged in a very far-sighted, important bit of statesmanship,—work that does not have its only concern as to the farmer or the helping of freight movement during winter, but that may have consequences extending throughout the centuries.

I have thought of the men who will come back from the war.

Every nation has had a problem to deal with in the returning soldier. One of the chief reasons why the republic of Rome went out of existence, and the empire of Rome came into existence, was because of the returned soldiers. They looked to their general to take care of them on their return, and their general found that the way to take care of them was to give them, as they said in those days, "bread and circuses."

So they reached over into Egypt, got the great wheat supply of that country, and provided the great circuses that are historical, for the amusement of the people.

Now that our men are beginning to come back, we ought to be able to say to these men:—

"Here is something that you can do at once. If your old position is not vacant, if you cannot go home to the old place and take up the work that you were in, then the government, in its wisdom, has provided something which you can do at wages upon which you can live well."

\*Abstract of article in the "Highway Magazine."

### CONTRACT FOR "HYDRO" TURBINES

Awarded to Wellman-Seaver-Morgan Co., of Cleveland, Ohio—Two Units in Initial Installation—Most Powerful Water Turbines Ever Built

ANNOUNCEMENT is made by F. A. Gaby, chief engineer of the Hydro-Electric Power Commission of Ontario, of the award to the Wellman-Seaver-Morgan Co., of Cleveland, Ohio, of contract for the construction of two vertical water turbines (each capable of delivering 52,500 h.p. at the generator coupling) and their erection in the proposed powerhouse at Queenston.

Two other tenders are known to have been received by the "Hydro," namely those from the Allis-Chalmers Co. and I. P. Morris Co., of Philadelphia. It is rumored that the Allis-Chalmers tender was high, but that both the Wellman-Seaver-Morgan tender and that of the I. P. Morris Co. were in the neighborhood of \$250,000 per machine, and the final decision was made entirely upon relative advantages in design.

Exclusive announcement was made in last week's issue of *The Canadian Engineer* that the Canadian Westinghouse Co. had secured the contract for the two generators for these units, and that the turbine contract would soon be awarded to either Wellman-Seaver-Morgan Co. or I. P. Morris Co.

A resumé of the turbine specifications appeared in *The Canadian Engineer* for September 26th, 1918.

While the initial installation consists of only two units, it is thought that tenders for another two of like size will soon be called for, or else for one 100,000 h.p. unit. The capacity of the powerhouse, head gates, etc., that will be built will be over 300,000 h.p.

These two water turbines will probably be the most powerful ever constructed, although not necessarily the largest in physical dimensions, on account of the high head under which they will operate. Steam-turbine-driven units of more than 50,000 h.p. have been built previously; but, so far as is known, the "Hydro" machines at Queenston will generate the greatest horse-power per machine of any water-turbine-driven units yet constructed.

New Brunswick sold \$450,000 bonds last week, the money to be spent in connection with the construction of the Valley Railway.

The construction of the dry dock at St. John, N.B., is being pushed by the St. John Dry Dock and Shipbuilding Co., who took over the contract of Norton, Griffiths & Co., Ltd. It is expected that the government will soon take up the completion of the piers on the west side of the harbor, upon which work was suspended during the war. The government has promised to proceed with the extension of the breakwater to Partridge Island.

The R. E. Cleaton Co., of Montreal, has been reorganized as Cleaton Company (Canada) Ltd., with R. Ewart Cleaton as president and F. W. Pennock, general manager. The firm will have a construction equipment department and mechanical equipment department, the latter department representing Diamond soot blowers, American steam ash conveyors, Precision boiler-room instruments and Ideal commutator resurfacers. The construction equipment department represents the Wyoming Shovel Works, of Wyoming, Pa., and the Cement-Gun Co., Inc., of Allentown, Pa.

Dick, Kerr & Co. Ltd., London, Eng., have recently secured a contract for the supply of a 3,000 k.w., 3,000 r.p.m. turbo-alternator set, together with condensing plant, to Cammell Laird & Co. Ltd. The turbine will be of the William-Zoelly type, to operate on steam at 160 lbs. pressure, superheated to 650° F., and the condensing plant of the surface type, with the Williams rotary system of air extraction, the circulating, ejector and extraction pumps being driven by an auxiliary turbine which will exhaust into a feed heater. The turbo alternator will supply three-phase current at 3,300 volts, 50 cycles, and will be fitted with an overhung exciter.