

CANADIAN Contract Record

*A Weekly Journal of Public Works, Tenders,
Advance Information and Municipal Progress*

This Paper Reaches Every Week the Town and City Clerks, Town and City Engineers, County Clerks and County Engineers, Purchasers of Municipal Debentures and Leading Contractors in All Lines Throughout Canada

VOL. 17.

TORONTO, MONTREAL — MARCH 14, 1906 — WINNIPEG, VANCOUVER.

No. 1

THE CANADIAN CONTRACT RECORD
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To Contractors

Sealed tenders (marked "Tenders for House of Refuge"), will be received up to 12 o'clock noon, SATURDAY, MARCH 17TH, 1906, for the several trades works required in the erection and completion of a House of Refuge Building in the Village of L'Original, Prescott County, Ontario.

Plans and specifications may be seen and all other information obtained at my office and at the office of J. G. Higginson, Esq., Chairman of Building Committee, Hawkesbury, Ont. Tenders to be addressed to J. G. Higginson, Esq., Hawkesbury, Ont. Lowest or any tender not necessarily accepted.

WM. NEWLANDS, Architect,
Kingston, Ont.

CITY OF BRANDON

Tenders for Cement

Sealed tenders, addressed to "The Chairman of the Board of Works, Brandon, Man.," and endorsed "Tender for Cement," will be received by the undersigned until 5 o'clock p.m. on THURSDAY, APRIL 12TH, 1906, for supplying from 1,000 to 2,000 bbls. Portland cement. Specifications and form of tender may be obtained on application to W. H. Shillinglaw, City Engineer, Brandon, Man.

The City Council does not bind itself to accept the lowest or any tender.
GEO. F. SYKES,
Sec'y Treas.
Brandon, February 15th, 1906.

TOWN OF OWEN SOUND DEBENTURES.

Sealed tenders, addressed to the undersigned, will be received up to 5 o'clock p.m. on FRIDAY, 23RD MARCH, 1906, for the following debentures:
\$5,642.56. Twenty years 4 per cent. issued for sewer purposes, dated 6th December, 1905.
\$12,931.80. Twenty years 4 per cent. issued for permanent walk purposes, dated 6th December, 1905.
\$25,000. Fifteen years 4 per cent. issued for loan to factory, dated 22nd January, 1906.
Said debentures, principal and interest, payable at Traders Bank, Owen Sound.
A. J. SPENCER,
Town Treasurer.
Owen Sound, 6th February, 1906.

CANADIAN PACIFIC RAILWAY

Tenders for the work required in connection with grading, bridging, track-laying, surfacing and ballasting that portion of the Toronto-Sudbury branch between Byng Inlet and Perry Sound, a distance of forty (40) miles, will be received by the undersigned up to noon on WEDNESDAY, 21ST MARCH, 1906.
Plans and specifications can be seen at the office of the Division Engineer of Construction, 112-118 King Street West, Toronto. Lowest or any tender not necessarily accepted.
J. W. LEONARD,
Manager of Construction.

TENDERS

Sealed tenders, addressed to the undersigned, will be received until noon on THURSDAY, THE 23RD INST., for the construction of the necessary artificial stone sidewalks, curb and gutter to be constructed in St. Thomas during the current year. Plans and specifications to be seen at the office of the undersigned. A certified cheque payable to the City Treasurer for the sum of One Hundred Dollars (\$100.00) must accompany each tender; this to be returned when the successful tenderer enters into a contract with the city. The Committee reserve the right to reject any or all tenders.
JAS. A. BELL, City Engineer,
St. Thomas, Ont.

CITY OF EDMONTON, ALTA.

Tenders For Supplying Cast Iron Water Pipes, Valves and Hydrants.

Tenders are requested for about 500 tons of water pipe and specials. Also for a quantity of gate valves and hydrants.
Specifications and forms of tender supplied on application to J. H. Hargreaves, City Engineer, Edmonton.
Sealed tenders addressed "City Commissioners," Edmonton, Alta., to be delivered to the undersigned not later than TUESDAY, THE 30TH MARCH PROXIMO.
Lowest or any tender not necessarily accepted.
GEO. J. KINNAIRD,
Secretary-Treasurer.
Edmonton, Alta., February 26, 1906.

TENDERS FOR GAOL and HOUSE OF REFUGE.

Separate sealed tenders, marked "Tenders for Gaol" and "Tenders for House of Refuge," will be received by the undersigned up to noon on MONDAY, MARCH 17TH, 1906. Bids tenders will be received for each building or for each of the several trades as follows:
For GAOL.—1. Mason, brick and plaster; 2. Carpenter and joiner; 3. Plumbing, heating and metal works; 4. Painting and glazing; 5. Cells and other steel work, including plumbing connected therewith.
For HOUSE OF REFUGE.—1. Mason, brick and plaster; 2. Heating, plumbing and metal works; 3. Carpenter and joiner; 4. Painting and glazing.
Specifications may be seen at the office of the Comptroller, Cobourg, or at the office of Power & Son, architects, Kingston.
A marked cheque must accompany each tender, for an amount equal to 5 per cent. of the total amount of the tender, which will be forfeited should the contractor fail to enter into a satisfactory contract when notified to do so.
Bonds or approved security for satisfactory completion of the work will be required.
The lowest or any tender not necessarily accepted.

NEIL F. MACNAUGHTAN,
Comptroller's Clerk,
Cobourg, March 7th, 1906.

CITY OF MOOSE JAW TENDERS FOR BORING WELL for GAS, WATER or OIL.

The Corporation of the City of Moose Jaw will receive sealed tenders, marked "Tenders for Gas Well," up till MONDAY, THE 16TH DAY OF MARCH, at 5 o'clock p.m., for the boring of a well on the following conditions, viz:
The City to supply the site, water, and all pipe and casing necessary for the construction of the said well. The contractor to supply the entire plant together with fuel necessary for said construction, and to oblige himself to carry a six inch drive pipe to a depth of not less than 1000 feet.
The tenders to be at a given price for the following depths: 1000 feet; 1200 feet; 1400 feet; 1600 feet; 1800 feet and 2000 feet.
The City reserves the right to stop the work of drilling should a supply of gas be found in quantities to satisfy the City before the depth contracted for has been reached.
Each tender must be accompanied by a certified cheque drawn upon any chartered bank of Canada, payable to the order of the City of Moose Jaw, for the amount of \$500, which shall be forfeited should the Contractor fail to enter into a satisfactory contract when notified to do so.
The Council reserve the right to reject any or all tenders. For full particulars as to above, as well as terms of contract, apply to
JOHN D. SIMPSON,
Secretary-Treasurer.
Moose Jaw, 23rd February, 1906.

Bevelled Plates for Sale

Two bevelled plates about 7' x 8', special price to anyone able to use them. LUXPER PRISM CO., Limited, 100 King St. West, Toronto.

To Excavators

Sealed tenders addressed to the undersigned will be received up to THURSDAY, MARCH THE 15TH, 1906, for the excavating required for a residence on the west side of Walmer Road, for Edward Gurney, Esq.

The lowest or any tender not necessarily accepted.

Geo. W. Gouinlock, Architect, 118 Temple Building, Toronto.

TOWN OF WATERLOO

DEBENTURES

Tenders addressed to the undersigned will be received up to five o'clock p.m. on the 23RD OF MARCH, 1906, for the following local improvement debentures:

\$800,50 30 years 4 1/2 per cent. dated the 5th of March, 1906.

\$125,50 30 years 4 1/2 per cent. dated the 5th of March, 1906.

A. B. McBRIDE, Town Clerk.

CONCRETE BRIDGE

Tenders will be received by the undersigned up till 10 o'clock a.m. on MONDAY, MARCH 26TH, 1906, for the Construction of a Concrete Arch Bridge for the Municipality of a County of Wellington in the Town of Harrison, Ont. Plans and specifications may be seen and forms of tender obtained at the office of Mr. James McMurchie, Mayor, Harrison, or of James McEwing, Warden, Drayton P.O.

A five per cent. deposit must accompany each tender.

The lowest or any tender not necessarily accepted.

J. HUTCHEON, Engineer, Guelph, Ont.

March 14th, 1906.

CONTRACTS OPEN.

KINGSTON, ONT.—The construction of six miles of concrete walks, at cost of about \$25,000, will be undertaken this year by day labor.

TILSONBURG, ONT.—N. R. Darrach, architect, St. Thomas, is to prepare estimates on the cost of an addition to the High school here.

COBOURG, ONT.—The Town Council have authorized the issuing of \$20,000 of debentures for building a new school on George street.

TORONTO JUNCTION, ONT.—T. Fleming & Sons intend building a brick store and dwelling corner of Laws and Louisa street this spring.

L'ORIGINAL, ONT.—The Ontario Government have approved of a site in this town for the erection of the Prescott County House of Refuge.

BELLEVILLE, ONT.—The County is preparing to erect a House of Refuge. —A Baptist church and several fine residences are to be built this season.

ELORA, ONT.—The following buildings are proposed: Two story and attic pressed brick residence for William Power; similar residence for Alex. Hunter; stone residence for Alex. Moir; small brick residence for John Godfrey; factory addition for J. C. Mundell & Company.

LACOMBE, ALTA.—N. LeBlanc, of the Adelphi Hotel, will build a three-story brick hotel corner Allan and Railway streets, to cost \$20,000.—The Western Canada Land & Brokerage Company will build a new brick office on Allan street this spring.

BERLIN, ONT.—The McGregor-Gourlay Company, of Galt, have been negotiating with the Council with a view to locating here.—V. F. Weber will receive tenders up to March 15th for construction of cement walks. Specifications at the office of the Town Clerk.

BRANDON, MAN.—The Brandon Electric Light Company will erect a new brick station for proposed extensions of their plant.—The Great Western Power & Machinery Company, represented by C. B. McAllister, is seeking a franchise for electric light and power. They agree to expend \$300,000.

PORT ARTHUR, ONT.—George Clavet will build a two-storey residence here this spring.—Thomas Hanley, architect, has taken tenders for a stone and frame addition to the Queens Hotel, also for an addition to the Canadian Northern Hotel.

CAMPBELLFORD, ONT.—Reeve Dorse, of this place, and John S. Fielding, C. E., of Toronto, formed a deputation to the Minister at Ottawa recently to secure permission to build a dam across the River Trent at Crow Bay for power purposes. They report favorable reception by the authorities.

ST. STEPHEN, N.B.—The ratepayers voted almost unanimously in favor of installing a waterworks system. The supply will be obtained from near Maxwell's Crossing, about three and a half miles distant, and the cost will be \$146,000, which will include a new distribution system for the town. Barbour & Snow, of Boston, are the engineers.

DARTMOUTH, N.S.—Bids will be received by A. Elliott, Town Clerk, up to April 2nd, for pipe and special castings required for waterworks extension. The town has purchased Lake Loon, 3 1/2 miles distant, and the ratepayers have voted \$33,000 for an additional 16-inch main from the lake to the town and \$30,000 for waterworks and sewerage extensions.

TRURO, N.S.—The following public and private works will be undertaken this year: Improvements to pumping station, cost \$10,000; new bank building for Bank of Nova Scotia, cost \$30,000; new store for Fraser & Company, cost \$20,000; new factory and warehouses for Stansfields, Limited, cost \$25,000 to \$50,000.

STRATHCONA, ALTA.—The Presbyterian congregation of this place have definitely decided to build a large church this spring, corner Main street and Lumsden avenue. — Mr. Beauchamp, proprietor of the Strathcona Hotel, is planning improvements in that building estimated to cost \$8,000.—Tenders will be received by Geo. F. Downes, up to March 15th, for \$88,000 4 1/2 per cent. town debentures.

KENORA, ONT.—The Corporation proposes to develop a water power on the east branch of the Winnipeg river, from 5,000 to 7,000 h.p., and to supply electric power to the Maple Leaf Flour Mills Company, who intend building a 2000 barrel flour mill this season. The power development and electric plant will cost about \$150,000, and it is expected that tenders for the work will be invited about April 1st. T. Pringle & Son, Montreal, are the consulting engineers.

MONTREAL, QUE.—Plans have been completed for the new Windsor Hotel. A. C. Hutchison is the local architect.—Ross & Macfarlane, architects, have prepared plans for a sandstone building to be built by the Dominion Guarantee Company on corner of St. James street and St. Michael's lane, to be three stories, 39 x 81 feet.—The

members of the church of the Messiah have decided to erect a new church to cost \$50,000. Rev. W.S. Barnes, pastor.

VICTORIA, B. C.—L. Goodacre & Sons have purchased property, corner Government and Johnson streets. It is understood that they intend erecting a modern building on the Johnson street front to replace the premises now occupied by Peter Brown.—Peter Metro will soon erect a residence on corner of Michigan street and Birdcage walk.—Burt Bros. have purchased property at 27 and 29 Kane street on which they will erect a new brick and stone building.

HALIFAX, N.S.—The Parish of St. Luke's and the Episcopal Church are preparing for the erection of a cathedral for this diocese, estimated to cost about \$100,000.—The City will this year expend \$100,000 in the construction of new sewers; \$150,000 for laying permanent sidewalks, curbs and gutters, and about \$75,000 for paving the most important streets.—The Provincial Exhibition Commission will erect several new buildings this year.

HAMILTON, ONT.—E. Brown & Sons are having plans prepared for erection of new warehouse at foot of Macnab street.—William Tout has sold the property, corner of William and Barton streets, on which a restaurant building is to be erected.—Stewart & Witton, architects, are preparing plans for the enlargement of St. Andrews' church, at estimated cost of \$17,000.—The Board of Education have decided to add eight rooms to Wentworth street school. Stewart & Witton are preparing plans.

BRANTFORD, ONT.—A by-law will be submitted to the ratepayers on March 22nd to raise \$140,000 for the construction of storm sewers and extension of the sanitary sewer system to the low lying areas. Length of storm sewers proposed, seven miles; size of pipe, 12 to 45 inches in diameter. Length of sanitary sewers, two miles; size of pipe, 9 to 15 inches. The work will include a pumping station and iron pipes under the canal and across the river.

NEW WESTMINSTER, B.C.—Grant & Henderson are architects for a large brick and stone block on Columbia street on site of old Douglas Elliott block, to be two stories high on Columbia street and four stories on Front street, also for frame residences for J. R. Gilley and for Dr. Rowthel.—Tenders will be received by the Secretary of Militia, Ottawa, up to April 15th for the construction of a rifle range here. Plans with District Officer Commanding, Victoria, B. C.; Lieut-Col. J.C. Whyte, Vancouver, B.C., and Director of Engineer Services, Militia Headquarters, Ottawa.

TORONTO, ONT.—Currie, Sproatt & Rolph, architects, have taken tenders for the Metropolitan Methodist parsonage to be built at corner of Shuter and Bond streets.—Geo. W. Gouinlock, architect, is preparing plans of residence to be erected on Charles street, estimated cost \$8,000; also preparing plans for Press Bureau estimated to cost \$20,000, and a Horticultural Building to cost \$70,000, for the Canadian National Exhibition Association, also plans and designs of extensive improvements to Union Trust Company's offices, to cost \$12,000. Above works ready for tender in a short time.—J. Francis Brown, archi-

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tect, is asking for tenders for the erection of brick houses on Hawthorne avenue and Barton street. Mr. Brown is also preparing plans for brick houses to be built on Huron street, corner of Dale and Maple avenue, Nanton crescent, College street and Jamieson avenue.—S. F. Baker, architect, is preparing plans for the new Traders' Bank building, corner Bloor and Yonge streets; also two brick houses on Dovercourt Road and a stone house on Russell Hill road.—The store building at corner of Charles and Yonge streets is to be remodelled for a Standard Bank building. A. C. Barrett, architect, is preparing plans.—The old building at north-east corner of Victoria Lane and Queen street is to be replaced by a modern salesroom and office building for the Pease Furnace Company.—The property at Nos. 55 to 61 Queen street west has been purchased by A. W. Austin, who intends erecting thereon a new hotel and several stores.—E. J. Lennox, architect, is receiving tenders this week for the erection of a residence in Rosedale.—Again there is talk of a new theatre to be built on the Baldwin estate, Nos. 77 to 84 King street west, at a probable cost of \$100,000.—The Board of Control have selected a site for the new Press building east of the Manufacturers' building on the Exhibition grounds.—Tenders will be received by the Board of Control up to March 20th for fredding slips, supply of cast iron water pipe and laying of water mains. Specifications at office of the City Engineer.—It is rumored that a ten-storey hotel will be built on the north-west corner of Front and Bay streets in conjunction with the Union station, to cost \$1,500,000.—A new morgue is to be erected on Lombard street and City Architect McCallum is visiting American cities before preparing plans for the building.—The G.T.P.R. purpose erecting a building on the Exhibition grounds, to cost \$50,000.—Tenders will be invited immediately for an addition to the Jameson avenue Collegiate Institute.—Building permits have been granted as follows: H. H. Beck, 2 storey and attic brick dwelling, Schiller avenue, near Poplar Plain road, cost \$10,000; R. J. Cliff & Co., 4 storey brick warehouse, 23 Lombard street, cost \$35,000; R. M. Case, 2 storey wood and brick dwelling, Ossington avenue, near Northumberland street, cost \$19,000; Imperial Bank, 3 storey brick bank and dwelling, King street west, near Spadina avenue, cost \$12,500; Miller Nash, 2½ storey brick and stone dwelling, 58 Lowther avenue, cost \$20,000; M. Flanagan, 2½ storey brick dwelling, Springhurst avenue, near King street, cost \$5,000.

WINNIPEG, MAN.—J. H. G. Russell, architect, has taken tenders for a brick residence on Wellington Crescent for H. H. Bradburn.—Herbert B. Rugh has taken tenders for a brick residence in Crescentwood.—A. M. Fraser is preparing to build a business block corner of Main street and Logan avenue.—Darling & Pearson, architects, will receive tenders up to March 17th for the erection of Canadian Bank of Commerce buildings at Winnipeg, Carman, Treherne and Moose Jaw.—The City Engineer has submitted a report on the water supply, in which he recommends the use of storage tanks.—James Chisholm, architect, has just taken tenders on alterations and additions to a residence on Dagmar street.—The City Clerk is asking for tenders up to 14th inst. for supply of two ten-ton scales, combination beam.—Contracts will be awarded this week for construction of a number of sewers and pavements.—The Winnipeg Grain & Produce Exchange are seeking legislation to enable them to erect a 7-storey building, corner Rorie and Lombard streets.

VANCOUVER, B. C.—The following buildings to be built this year are in the hands of Parr & Fee, architects: The Grey block on Hastings street, brick and stone, three and a half stories above ground, on concrete basement; McLennan & McFeeley Co's. new warehouse, brick and stone, 122 x 175 feet, four stories and basement; frame house for Wm. Clubb; Martin & Nichol's new block on corner of Pender and Seymour streets, brick and stone, 120 x 122 feet; four storey brick hotel on Water street for Mr. McDonald; three storey brick block on Hastings street for Thos. Hunter; new Sunnyside Hotel on Water and Alexander streets, brick and stone, three stories above basement, 66 x 132 feet, cost about \$45,000; extension to Empire Hotel on Hastings street east.—W. T. Whiteaway has plans out for a four storey stone and brick hotel on corner of Hastings and Carrall streets for J. S. Wood, to have 60 bedrooms and cost about \$30,000, also for a frame residence for Col. L. Edwin Dudley on Seaton and Bute streets costing \$5,000 and a frame residence for A. C. Sturteet on Robson street costing \$3,500.—J. J. Honeyman is the architect for a new frame edifice for St. John's church, seating capacity 1,100, cost about \$30,000.—Grant & Henderson are architects for the following: Frame residence for E. S. Lee on Burnaby street; frame residence for A. S. Cross on Nelson street; residence for John West on Burnaby street; remodelling of Bank of Hamilton, corner of Hastings and Hamilton streets; brick and stone block for Wm. Walsh on corner Pender and Richards streets, three stories and basement.

CONTRACTS AWARDED.

WINNIPEG, MAN.—Supply of sewer pipe: E. H. Bissett, successful tenderer.

WOODSTOCK, ONT.—Highway bridge: Hamilton Bridge Works Company, contractors.

EDMONTON, ALTA.—Brick office on Jasper street for Herbert Bowen: Purell & Foote, contractors.

SPRINGFIELD, N. S.—Twelve houses for Davidson Lumber Co.: A. W. Allan & Son, of Middleton, contractors.

WELLAND, ONT.—Structural steel for Beatty & Sons' new plant: Hamilton Bridge Works Company, contractors.

DUNDALK, ONT.—G. A. Stimson & Company have purchased \$13,500 4½ per cent. Union school debentures.

SUMMERSIDE, P. E. I.—Construction of breakerwork: Haney & Smith, successful tenderers, price about \$140,000.

ALVINSTON, ONT.—Bridge for the County of Lambton: Hamilton Bridge Works Company, successful tenderers.

HAMILTON, ONT.—The contract for supply of cement has been given to Stinson Reeb Company, Montreal, at \$1.78 per barrel.

EGANVILLE, ONT.—B. Michael, of Pembroke, has received the contract for building an addition to the Eganville convent.

PETERBORO, ONT.—Purdy, Mansell & Company, of Toronto, have been given the contract for plumbing in the Oriental Hotel.

PORT ARTHUR, ONT.—Grier Bros. have been given the contract for supplying 2,000,000 ties for the new Transcontinental Railway.

ST. THOMAS, ONT.—Residence for A. S. Axford, Curtis street: Plumbing and gas fitting, Potticary & Dickson; carpenter work, Alfred Morris.

EAST TORONTO, ONT.—W. C. Charters, of the Kingston road, has been given the contract for the erection of the new High school, Lyall avenue and Charles street.

MONTREAL, QUE.—The Dominion Bridge Company have secured a contract from the C. P. R. to rebuild the two

bridges over the Ottawa river at St. Annes, and also to widen all the bridges between there and Smith's Falls.

NFLSON, B. C.—W. P. Tierney has been given the contract for the excavation for the British Columbia Copper Company's new smelter at the Boundary.—A. G. Creelman, Rossland, has secured the contract to build the smelter, cost \$350,000.

OTTAWA, ONT.—Successful tenderers for waterworks supplies: Hydrants and valves, Kerr Engine Co., Walkerville, \$7,779; cast iron pipes, T. S. Kirby, \$14,381; castings, Thomas Lawson, \$3.25 per hundred weight; brass work, Martel & Langelier, \$820; oils and grease, Queen City Oil Company, \$359; lead pipe and pig lead, Blyth & Watt, \$1,714.

VANCOUVER, B. C.—McQuarrie & Company are the lowest tenderers for the Fourth street sewer, \$10,241.47.—Smith & Sherburne, contractors, have been given the contract for the construction of the second wing of the C. P. R. freight sheds, to cost approximately \$20,000.—J. M. McLuckie has secured the contract for erection of J. S. Wood's brick block, Hastings and Carrall streets.—E. Cook has received the contract for G. S. McConnell's hotel, Ponnall street, to cost \$17,000.—Supply of hydrants: Burns & Co., contractors, as follows: Fifty Ludlow hydrants, \$42.15 each, ten flush hydrants, 3 feet 6 inches, \$31.20, and ten flush hydrants, 3 feet, \$30.50.

TORONTO, ONT.—Dairy buildings for S. Price & Sons, Queen street east: Masonry, Dancy Bros.; carpenter work, Brown & Cooper. J. Francis Brown, architect.—Home Bank, Bathurst and Queen streets: Young & Son, contractors. A. R. Denison, architect.—Bank and residence, Centre avenue and Edward street: Masonry, Teagle & Son; carpenter work, A. M. Torgiss; roofing, R. Rennie & Son; plastering, Beaver & Co.; painting, F. E. Phillips; plumbing, Keith & Fitzsimmons; wiring, W. J. Maguire; heating, Pease Furnace Co. S. F. Baker, architect.—Addition to Havergall College: Carpenter work, S. Hughes; brick work and masonry, J. J. Thompson; plastering, Beaver & Co.; roofing, A. Matthews. G. M. Miller, architect.—Alterations to Pines Hotel, Bloor and Dundas streets: Brick work, M. Manly; carpenter work, T. W. Westlake. H. Simpson, architect.—Contracts for the sewage disposal system for the Woodbine district have been accepted as follows: Sewers and pumping station, Toronto Contracting & Paving Co., \$30,422; septic tanks and bacteria beds, F. G. Mortimer, Chicago, \$13,000.—The Board of Control have awarded the following contracts for sewers and pavements: Sewers: Roncesvalles avenue, Contracting & Paving Co., \$28,904; Poplar Plains road, from 450 feet north of Cottingham to St. Clair avenue, Contracting & Paving Co., \$5,500; Poplar Plains road, Dupont street to north of Macpherson avenue, City Engineer, \$1,805; Avenue road, St. Clair avenue to Lonsdale avenue, John Maguire, \$3,636. Asphalt roadways: Broadview avenue, from Queen to Gerrard, Barber Asphalt Co., \$16,048; Birtle avenue, from Dundas street to 430 feet west, Barber Asphalt Co., \$1,666; from this point to west end of street, same contractors, \$1,057; Alexander street, Yonge to Church, Barber Asphalt Co., \$4,675. Bituminous macadam: St. Clarens avenue, from Wyndham street to Dundas street, Godson Contracting Co., \$4,675. Bitulithic pavements: Dufferin street, from King street to 1,758 feet south, Warren Bituminous Paving Co., \$12,645; Farnham street, from Avenue road to east city limit, the City Engineer, \$3,682. Tar macadam: Grace street, from 494 feet north of College to 500 feet further north, Contracting & Paving Co., \$1,857; Farley avenue, from Spadina to Bathurst, Canadian Construction Co., \$8,889. Cedar block pavements: St. Clarens avenue, from College street to Dundas street, Contracting & Paving Co., \$1,070; Shirley street, from Brock street to St. Clarens avenue, Contracting & Paving Co., \$1,600.

THE OUTLOOK.

The construction season into which we have now entered promises to break all previous records, despite the fact that last year was one of unprecedented activity. As a result of the prosperous conditions which have prevailed in both Canada and the United States for the past few years, the general public have plenty of money for building purposes, and barring labor troubles, of which there are no indications at the present time, a large volume of construction work of all kinds will be placed under contract.

A vast amount of railway construction is under way and in contemplation. The most important work, of course, will be the Transcontinental Railway, for two sections of which contracts will be awarded this month. These sections comprise 245 miles eastward from the city of Winnipeg and 150 miles between the city of Quebec and La Tuque. The contract will also be awarded at the same time for a steel viaduct about 3,000 feet long across the Cap Rouge Valley near Quebec. The aggregate value of the contracts above mentioned will be between twelve and fourteen million dollars.

The situation in the building trades is exceptionally bright, a large number of buildings having already been arranged for. The value of building permits issued in Toronto and Montreal during the first two months of this year is greater than for the corresponding period of 1905. There is no cessation of building in Winnipeg, where last year the value of new structures reached almost \$11,000,000. The Western Canada Contractor has published a list showing over ten million dollars worth of buildings proposed to be erected in Winnipeg this year, and while some of these may not materialize, the total promises to be increased by the new projects that will develop during the year.

Among the most important works to be undertaken in Toronto is the new Union station, which will no doubt be commenced this spring. The erection of a palatial hotel on the corner of Front and Yonge streets may also be commenced this year. Architects are preparing plans for several other important buildings which will be proceeded with very shortly.

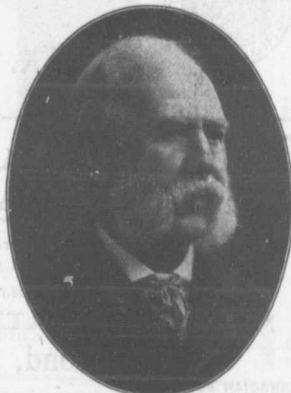
Municipal improvements will receive much attention this year. The installation of waterworks and sewerage systems by the smaller towns and villages is particularly noticeable in the municipalities in Manitoba, Alberta and Saskatchewan. The city of Calgary, for instance, pro-

poses to remove the waterworks pumping station about a mile out of the town, to extend the water mains and sewers and construct a trunk sewer to supply the western portion of the town, at a total approximate cost of \$233,000. Electric lighting plants will also be installed by a number of municipalities.

Taken altogether, architects, builders and railroad contractors are likely to experience a busy and prosperous season.

FIFTY YEARS AS CITY CLERK.

Mr. Thomas Beasley, who has recently resigned the position of City Clerk of Hamilton, completed his 51st year of



MR. THOMAS BEASLEY,
For Fifty Years City Clerk of Hamilton, Ont.
office on the 12th of September last. He was the oldest civic official in Canada in regard to service. He was born in the City of Hamilton on 18th December, 1829. His father was Henry Beasley, whose

farm extended over what is now the extreme west end of Hamilton. At first he attended the old log school house on the Dundas Road; from there he went to Doctor Tassie's school in Hamilton, then to college at Cobourg. On leaving college he resided with his uncle, Richard Beasley, senior partner in the leading legal firm of Beasley & Garton. The junior member of that firm afterwards was appointed judge. Thomas studied law and in October, 1854, was appointed City Clerk of Hamilton and in the same year received the appointment of Secretary of the Hamilton Board of Education, which latter position he resigned last month.

Mr. Beasley has seen his native city grow from a small town to a large and prosperous city, and retires from active life with the good will of all with whom he came in contact. Starting with a legal training, his long period of civic life made him one of the best posted officials on municipal work. As he was necessarily brought in contact with all manner of men during his half century of service, he must have possessed tact in an uncommon degree to retire with the good wishes of all.

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ADDITIONAL CONTRACTS OPEN.

OTTAWA, ONT.—The Fire & Light Committee will request the Dominion Government to erect a fire station for the protection of the Parliament Buildings.

MOOSE JAW, SASK.—James Chisholm, architect, is preparing plans for the new Methodist church, to be 76 x 114 feet, brick and stone, cost about \$50,000.

PORT CREDIT, ONT.—Tenders will be received up to 25th inst. for the erection of a brick house for the Presbyterian congregation. Plans with A. Weir.

FAIRVIEW, B.C.—Emil Guenther, architect, has prepared plans for a large three-story business block, to be built on corner Granville street and Seventh avenue.

ALAMEDA, SASK.—The Alameda Farmers' Elevator & Trading Company will build this spring, on First avenue, a two-storey brick warehouse 43 by 110 feet.

GUELPH, ONT.—J. A. McHardy is preparing to build dwellings corner of Glasgow and Ken's streets.—A new residence will be built for Mrs. Pa's on Green street this spring.

CRANBROOK, B.C.—N. Hanson, of Wasa, is completing plans for a three-storey hotel here, 80 x 122 feet.—Extensive street and sidewalk improvements are proposed this year.

ARNPRIOR, ONT.—Plans have been prepared by Pringle & Sons, of Montreal, for the new shirt factory to be erected here. It will be four stories, brick, and cost about \$35,000.

GRAYSVILLE, MAN.—The Orange Society purpose building a hall here this season.—It is understood that sufficient funds have been subscribed for the erection of an Anglican church here.

STRATFORD, ONT.—The Board Carriage Company will enlarge their plant to twice its present size.—The members of the Pastime Gun Club will erect a new club house this spring.

ST. THOMAS, ONT.—The Dominion Bank are making preparations to enlarge their present building on Talbot street.—George Midgley will build a residence on Hincks street this summer.

DUNNVILLE, ONT.—W. J. Aitkens is about to erect a three story hotel, 50 x 150 ft.—Additions will be made to the High school building and the town hall and a new Presbyterian church erected.

WINGHAM, ONT.—The Town proposes building a new High school during the coming summer to cost about \$15,000. The School Board are now examining buildings in other towns for plans and designs.

JACQUET RIVER, N.B.—Tenders will be received up to April 16th, at the Department of Public Works, Fredericton, N.B., for constructing a metal bridge 116 feet long. Plans at the above mentioned office.

FORT FRANCIS, ONT.—A new railway 140 miles long is proposed, to run from this town north to the Grand Trunk Pacific near Blackface Rapids, to be known as the Fort Francis, Manitou & Northern Railway.

AMHERST, N.S.—At a meeting of ratepayers it was decided to spend \$80,000 for improvements to the waterworks system and \$10,000 for extension to sewerage system.—The Marine Winter Fair building will be enlarged, at cost of about \$4,500.

MIDLAND, ONT.—Fred Gelinas, Department of Public Works, Ottawa, will receive tenders up to March 23rd for dredging the harbor here. Plans with J. G. Sing, Confederation Life Building, Toronto, Postmaster at Midland, and Department of Public Works, Ottawa.

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Cobalt Silver & Copper Mining Company, Limited, Sault Ste. Marie, Ont., capital \$500,000. Directors, F. E. Keitchem, G. P. McCallum, C. W. Baldwin, and others.

Queen City Mining & Development Company, Limited, Toronto, incorporated, capital \$150,000. Directors, J. B. Leroy, J. R. Humphreys and Thomas Mitchell.

Savage Mine of Cobalt, Limited, Toronto, incorporated, capital \$500,000. Directors, Gordon Taylor, G. W. Spence, and others.

Cobalt North Ontario Mining Company, Limited, Hailebury, Ont., incorporated, capital \$40,000. Directors, J. E. Meyers, W. H. Altman, Chicago, and G. A. Mason, Highland Park, Ill.

Williamson Marks Mines, Limited, Toronto, incorporated, capital \$300,000. Directors, H. W. Williamson, Ira Marks and James Playfair.

Galt Electric Gas Fixtures, Limited, Galt, Ont., incorporated, capital \$40,000. Directors, Henry Dakin, R. G. Struthers and M. A. Secord.

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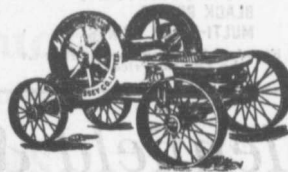
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There is an old saying that if one wishes to make an enemy of one's friends the quickest way to reach that result is to loan him money. This is often the truth. There is an equal truth, and one that reaches still deeper, in the habit some men have of asking friends to go on their bonds for the faithful discharge of their duties and their continued integrity.

There was a time when the only way in which men could give bonds was by securing the assistance of their friends; but there no longer exists the least occasion for asking favors of this sort or of granting them.

The friend who asks you to go on his bond takes a mean advantage of your friendship. He knows that you will not investigate his character, or if it will bear investigation, you are put in an awkward and embarrassing position if you refuse his request. He knows that your refusal to aid him may be construed as a lack of confidence in his integrity, however earnestly you may profess unbounded confidence in both his honesty and ability.

In no case is it wise to obligate one's self by giving bonds. It is far safer to advance the money necessary to secure the guarantee of a regular surety company, thus knowing the exact liability incurred and having it off one's mind. The guarantee companies are in the business of verifying character. They have excellent facilities for locating weak spots in their prospective clients, and their willingness to say that a man will be honest for a term of years, or else they will forfeit so many dollars and cents, immediately eliminates every element of friendship or sentiment and puts the whole transaction on a cold, calculating business basis.

The growth of surety companies shows the great confidence the public has in them. Seldom indeed do they fail to pay for misplaced confidence and unsuspected rascality in the hard metallic coin of the realm; and God help the rascal who has proved himself to be a thief. Thus they serve a double need.

They make whole the employer, public or private, and they put the dishonest employee where he will have time to reflect and repent.—The Adjuster.

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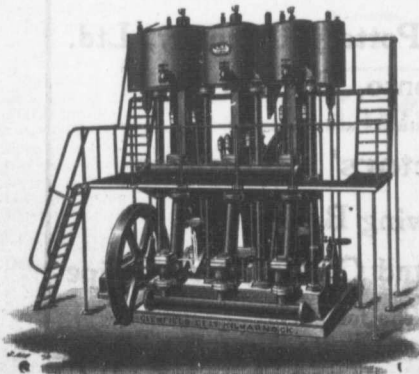
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PUBLIC WATER SUPPLY

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The question of Water Supply is, from every standpoint, one of the greatest public concerns of the day, and from an engineering standpoint particularly, the problem is always exceptionally interesting, as the solutions are in but very few cases exactly alike.

In these days of rapid travel and change, the general public cannot afford, in the interests of health, comfort and safety, to be indifferent to the lack of a thing so necessary to life and health, in all centres of population, whether great or small, as a good water supply for both domestic and fire service.

Although public water supplies were established in the larger and more important cities of Europe and North America over one hundred years ago, it is only within the last fifty years that rapid development has taken place. This development has been such that it is fast becoming the exception for any good sized village or town of 1,000 inhabitants to be without a public supply.

It will be interesting to note the following table, giving approximately the total number of waterworks in existence in Canada and the United States at the end of various periods:

Year.	Number of Works.
1850.....	100
1860.....	150
1870.....	300
1880.....	700
1890.....	2,000
1900.....	6,000

The phenomenal growth and development of the last few years is due in a large measure to the existence of a higher standard of civilization. The manner of living of the present is so very different from that of former generations that it is no wonder an intelligent and progressive people so fully appreciates the vast importance of public water supply.

The two most important uses of a public water supply, whether in a city, town or village, are, firstly, the furnishing of suitable water for domestic use, and, secondly, the furnishing of the necessary carriage for disposing of sewage by means of a sanitary system of drainage. Another very important use is for the extinguishing of fires.

The economic value of good fire protection is directly shown in the reduced rates of insurance which follow its introduction, and its commercial importance is recognized when one considers that the existence of a water supply often determines the location of industries; indeed, all the benefits accruing from it tend to increase the desirability of a town for many purposes, and to enhance the value of the property therein.

SOURCE OF SUPPLY.

The first thing to be considered when contemplating the installation of a waterworks system is the source from which the water is to be obtained. If the water is to be used for domestic purposes, it must be satisfactory from a chemical and sanitary standpoint and, above all, free from any suspicion of possible contamination, including that most dangerous one from animal and human wastes, generally known as sewage. The supply should be sufficient in quantity, not only for present, but also for future probably greatly increased requirements.

As regards these requisites, namely, quality and quantity, statistics prove conclusively that the introduction of a wholesome and abundant public supply of water has not only lowered the death rate but has improved the general health of the community, the one being of course an index of the other. When it is known that a water is contaminated by sewage, no further test is required to prove that it is in that condition totally unfit for human consumption.

The question of securing an abundant and uncontaminated source of supply is frequently very difficult of solu-

tion, especially in thickly settled districts, and sometimes vast sums of money have to be expended in bringing the water for long distances or treating it specially by filtration and other methods.

Rainfall is the primary source of all water supply which is obtained from the earth's surface or from under ground. Surface waters are usually obtained from streams, rivers and lakes, ground waters from flowing springs or wells. These two classes of water often differ very considerably in their chemical characteristics. Surface water is usually softer than ground water, but ground water is likely to be of better quality, from a sanitary standpoint. Surface water is naturally much more liable to contamination, because it absorbs and becomes mixed with the surface waste and general drainage of the area over which it flows.

Rivers being the natural outlets for the drainage of towns located upon their banks, are in consequence very frequently, especially in settled districts, unfit for use. Great efforts are at present being made to lessen or do away with the pollution of lakes and rivers by compelling the partial or complete purification of sewage and other wastes before discharging them into these rivers or lakes.

There is an opinion prevalent that all flowing streams possess the power of self-purification by the oxidation of all organic substances, due in some way to the free exposure to the atmosphere, combined with mechanical admixture, and that contamination practically disappears a very few miles below the point of pollution. This is a dangerous fallacy, because, while there is a certain amount of natural purification apparent, it is almost entirely due to the dilution by the admixture of a large volume of good water and sedimentation, which takes place under favorable conditions on the bottom of rivers. A similar fallacy, although not so prevalent, exists with regard to the pollution in practically slack bodies of water such as lakes.

The chief diseases met with as a result of contaminated water supply are fevers of the typhoid and typho-malarial kind. Nothing has been more clearly established in sanitary science in late years than the fact that typhoid fever is caused by the direct inoculation and contact of a certain germ, which attacks the intestines and poisons the system. These germs can only find entrance through the liquid we drink, or the food we eat.

It is in the water we drink that the greatest danger of taking in these germs lies, and this is proved clearly by the fact that general epidemics of typhoid fever have in 99 cases out of 100 been directly traceable to a contaminated water supply, and that while this disease is not, strictly speaking, contagious, like many other diseases, it can be transmitted and spread in a community by lack of care and cleanliness in handling all substances and materials of any description, which may come into contact with the germs. The public mind is very often confused and led to attribute typhoid to other causes, such as foul air, including sewer and other noxious gases, which of themselves can only produce diseases of the respiratory order, such as tonsillitis, scarlet fever and diphtheria.

The experience of many large towns and cities has been that with the growth of population the danger of typhoid epidemics has increased. This has been strikingly so in places situated near rivers or lakes, where the surface waters serve the dual purpose of public water supply and sewage disposal.

With the natural growth of population the area of pollution is constantly increasing, and hence supplies, which at one period may have been quite safe and satisfactory, are becoming more and more endangered.

There is an immense evaporation, which is everywhere taking place from the earth's surface. The amount of evaporation differs in different localities on account of

difference in altitude and in atmospheric conditions. This question of evaporation is one of the many which must always be taken into consideration in calculating the amount of water available from the rainfall on a given area of watershed. As a general rule, the amount of evaporation on ponds and lakes will balance the total amount of precipitation of snow and rain on them. Take for example the case of Lake Superior. The average rainfall upon this lake is 22 inches. The evaporation would appear to be even greater than this, namely, 24 inches, so that more water is raised from than falls upon it. Its level is maintained only from the surplus which flows into it from streams, which drain its enormous watershed.

GENERAL COST.

While the questions of quantity and quality are always of first importance in the selection of a source of supply, the question of cost bulks very largely in the solution of a waterworks problem. With two or more sources at hand, equally suitable as to quantity and quality, the question as to which shall be adopted depends on the cost. Speaking generally, the first or initial cost plus the capitalized cost of maintenance and operation will determine the matter.

In supplying water to communities, there are only two systems, natural gravitation and pumping. Sometimes, however, a combination of these two systems is necessary to give not only the supply, but also the requisite pressure for purposes of domestic distribution and fire service. The simplest and most economical system is by far that by natural gravitation, especially where the source of supply is not far distant and is located at a sufficient elevation to give the desired capacity and pressure for all purposes.

The cost depends, of course, entirely on local conditions, but when it is considered that many of even the very small systems, in Canada for example, have been designed as gravitation works, bringing water from a distance of several miles for profitable distribution, proves conclusively the preference which should always be given to a gravitation system over a pumping system.

WATER METERING.

The question of installing meters on all the consumers' service connections is one which does not receive the attention and consideration which its importance deserves. In this respect Canadian practice is far behind that of Europe and even of the United States.

The first effect of metering is to materially lessen the useless and inordinate waste of water, and to confine the amount used to that required for legitimate uses only. The charging for all water used at a fixed rate per

thousand gallons, that is, paying for what you get and getting what you pay for, would appear to be the proper policy, but, for one reason or another, it has not as yet made much headway in Canada.

There are many other advantages, both direct and indirect, which follow the metering of the water supplied: for example, in the case of a system which has to pump every drop of water used, the direct saving in machinery and cost of operating is very great, because ordinarily the amount requiring to be pumped is reduced by about one-half.

The capacity of all mains and distribution pipes with regard to fire service is, when the limiting maximum is required, indirectly increased on account of the flow for domestic purposes being decreased. This latter advantage is not only the case in a pumping system, but also in the case of a gravitation system. It follows also that where there is a difficulty in obtaining a sufficient water supply, the installation of meters will put off the date at which steps must eventually be taken to spend more money to obtain a more bountiful supply so as to meet the demands of increased consumption.

There are perhaps some few cases and conditions in which the advantages of a meter system are not so apparent: for example, a system which has an abundant supply by gravitation and is designed on a fairly large scale for carrying and distributing capacity to meet the future possibilities of a large growth in population. In this case, the flat rate would be found quite suitable for some years to come, and thus to this extent be slightly more simple and economical in saving the cost of and trouble in maintaining meters.

For some reason there appears to be a natural aversion, on the part of consumers, to paying for water by measurement, but if the consumers would take the time to intelligently consider the question, a very different opinion would prevail, because it means not only cheaper water to the consumer, who should pay for the cost of operating, but also a saving to the taxpayer whose property is mortgaged for the debenture debt which covers the initial cost of the waterworks.

The new additions to the Dominion Gas Meter Works, London, Ont., are now almost completed. These comprise a 20 x 24 ft. addition each to the testing department and the shipping department. They have also purchased three large lots adjoining, which gives them the entire block from Garfield Ave. to West Ave. It is their intention to build another addition to their works this spring.

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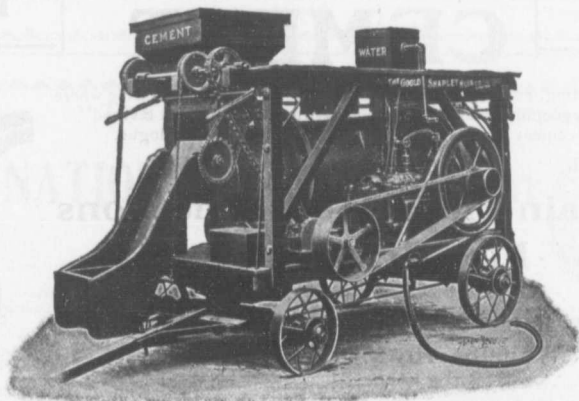
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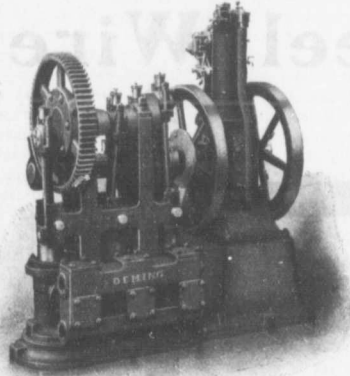
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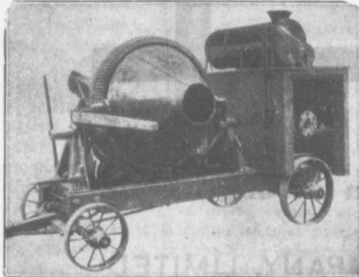
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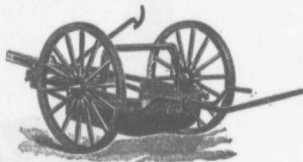
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					Initial	Final	Neat.					3 (Sand) to 1 (Cement)				
							1 dy.	7 d.	28 d.	3 mos.	1 yr.	1 dy.	7 d.	28 d.	3 mos.	1 yr.
1903	20	O.K.	3.135	2.1	162	345	307	701	783	827	*	74	214	299	367	*
1904	44	O.K.	3.150	2.0	132	342	300	744	848	914	938	86	262	354	401	427

* Tests for 1 year were not completed when records closed. 1905 report not yet issued.

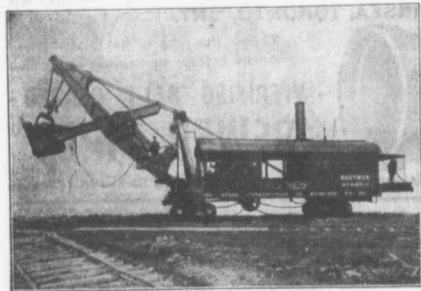
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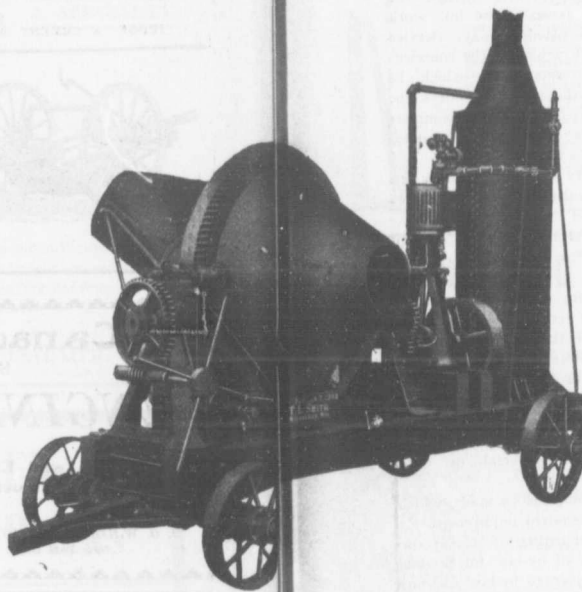
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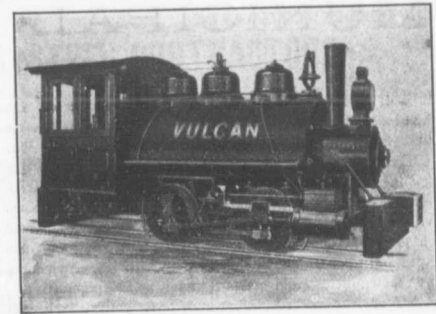


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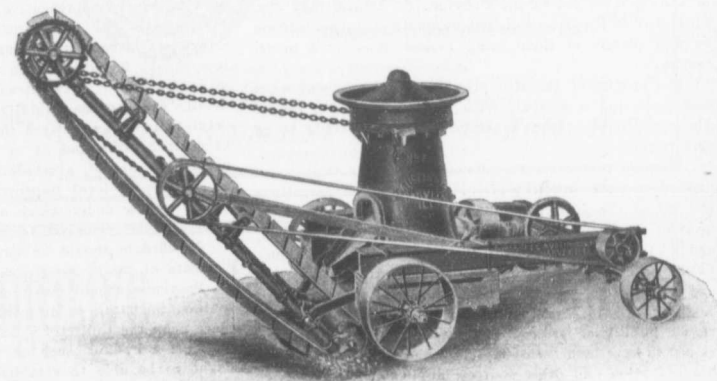
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MUNICIPAL ACCOUNTING

By F. H. MACPHERSON, F. C. A.

It will doubtless be of interest to readers of the "Contract Record" to learn that the province of Ontario was the first of the provinces of the Dominion, and was years ahead of any of the United States, in its endeavor, though in most simple form, to introduce legislation with the object of keeping municipal accounts upon a uniform basis. In 1897 an act (Chap. 228, R.S.O.) was passed which provided for the maintaining and keeping of Cash Receipts and Cash Disbursements of all villages, townships, towns and counties, and cities (under 15,000 population), in a uniform way. True, this was only a first step, but it was nevertheless a step in the right direction, coupled as it was with the appointment of an official known as the Provincial Municipal Auditor, included in whose duties was the constant visiting of municipalities, explaining changes in method, checking up cash balances, etc. The actual as well as the moral effect has been good.

The further provision for investigations by independent and competent municipal accountants, upon petition of a reasonable number of ratepayers, has been most beneficial. In almost all the petitions so filed, charges of a general and sometimes of a specific character were made. The investigations have usually shown that very few of the specific charges ever stood the test of a critical examination under oath, and consequently these fell to the ground. The audits have, however, almost invariably produced results by showing either embezzlement, errors, omissions or other wrongdoings, of the existence of which the petitioners and ratepayers generally never dreamed.

Upon general principles, therefore (although upon the surface there may not appear to be the slightest justification for the circulation of a petition), the granting of the prayer of the petitioners for an audit is justifiable. If the audit and examination be properly conducted, by a competent person, in whom the government and people have confidence, his report will have the effect of removing suspicion, where suspicion has unjustly existed, of clearing up matters which have been the "bone of contention" at municipal elections for years; of locating and pointing out errors and wrongdoing, if they do exist, and of clearing the municipal atmosphere generally.

While the legislation thus far introduced has proven of great value, it yet falls very short of what ought to be accomplished before the Province of Ontario may consider that it has its municipal accounts in such condition as will permit of their being looked upon as a model system.

The provincial statutes provide for the keeping of a cash book and a journal, with no reference to a ledger. The situation is about as crude as it well could be in this respect.

A complete system of municipal accounts requires a method or means whereby all of the financial transactions and all of the data pertaining to the financial management of the municipality is (1) collected, (2) classified, and (3) finally summed up in the form of a Balance Sheet, which represents, on the one side, all of the assets, and on the other side all of the liabilities.

The accounts of an individual year should include all known liabilities, irrespective of whether or not warrants or orders have been issued therefor, and the whole revenue from taxation and other sources, applicable to the year, irrespective of whether or not it has been actually collected. By such a system only, of reporting expenses and revenues, can accurate information be had as to the relation of service rendered and to expenses incurred. Mere statements of Cash Receipts and Cash Disbursements have no reference to service rendered, unless every bill has been paid, and every dollar of revenue has been collected.

I venture the statement that in not a half-dozen municipalities (including our cities) are their accounts kept upon the Balance Sheet system. The most that is

found is a simple statement of Cash Receipts and Cash Disbursements, supplemented by statistics and statements which will show possible assets and liabilities, these being generally gathered from sources altogether outside of the books of account.

Within the limits of a short article such as this, it would not be possible to discuss the broad question of Municipal Accounting in such a way as to impart detailed information which would prove of much benefit. Under these circumstances it were better, perhaps, to content oneself with pointing out some of the weaknesses in present methods, and suggesting improvements therefor.

It is well understood that the ordinary annual audit of municipal accounts is merely a perfunctory operation and amounts to very little. The auditor will reply that the service rendered is worth as much or more than the price paid. That is true, but it is no excuse for work poorly done to say that the work fitted the pay. Service should never be rendered upon such a basis. The conscientious auditor, who realizes the responsibility which he assumes, will decline to accept the position, unless the fee be made sufficiently liberal to cover a full, complete and searching investigation of the affairs of the corporation.

Not the most important duty of the auditor is to detect fraud and wrongdoing; he should find these if they exist, but his whole duty is to see

(a) That the monies or sums to which the municipality is entitled are accounted for, either as a receipt, or as an asset;

(b) That the funds on account of which monies are collected have received the proper credit;

(c) That all expenditures of the municipality have been made according to the statute, by-law or resolution authorizing them, and out of the proper fund;

(d) That no improper and illegal expenditures have been made, or if so that they be reported;

(e) That the accounts of the corporation are being so kept as to properly exhibit the financial or other condition of the municipality;

(f) And if not, that recommendations be made, which, if enforced, will bring about the required improvements.

A serious weakness in all municipalities is the absence of a full and comprehensive form of by-law for striking the rates. The details in the average by-law as now drawn are altogether too meagre. A properly drawn by-law should include (as an appendix or otherwise) the estimates which it is intended to provide for, in fullest detail. Further than this, the by-law should include in detail, divided as between the proportion to be raised out of general taxes and as a charge against the several properties affected, a schedule of all rates to be collected on account of local improvements, including the number of the by-law under which authorized, the number of the levy, and the levies yet to be made.

A schedule should be included showing in detail the "arrears of taxes" to go on the roll.

Provision should also be made for the including in the by-law, in detail, of all other items which should find a place upon the Collector's Roll.

With a by-law such as this before him, the auditor ought to be able to establish the accuracy or otherwise of the Collector's Roll. It would surprise the readers of the Contract Record if they could only know the amount of money lost to municipalities through inefficiency in the matter of imposing these special rates.

The interests of municipalities would be further safeguarded if at the date of settlement and transfer of the Collector's Roll with the Treasurer, a joint report be made in the form of a statement showing

(a) The total amount of taxes on roll (including interest added);

(b) The total amount of taxes collected in cash;

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(c) The amount (in detail) written off or allowed by Council; and

(d) The amount of uncollectable taxes returned to the Treasurer as per the "return of uncollected taxes." The sum of these (b, c and d) should exactly equal the total of the roll (a).

The statement should recite that the Collector had paid over or returned to the Treasurer the above mentioned sums, and that the Treasurer had received and entered in his accounts the cash he received, and had credited the Collector with the other items (c and d). Right in this particular exists one of the most serious weaknesses of present municipal accounting methods.

Another source of trouble is the permitting of two or more rolls in the hands of a collector of taxes at one and the same time. A serious temptation is thus placed in the way of a weak or dishonest official, and where trouble follows, the members of council who have allowed such a condition to arise should be held personally and individually responsible.

Arrears of taxes are, under present methods, less susceptible of proof than almost any other form of receipts. In the majority of municipalities, no record or ledger account of such arrears is kept, and in this particular department of municipal accounts exist one of the most prolific and frequent sources of speculation, for the reason

condition available and fixed assets upon the one hand and floating and bonded liabilities upon the other.

A properly constructed Balance Sheet should be divided into two parts: the first section should show the financial position of the municipality, having regard to current assets upon the one hand, and to the liabilities, which are a charge upon these assets, upon the other. If the current assets exceed the liabilities (with proper provision for loss upon realization), then the remaining balance may, and should properly, be taken to account in the preparation of the estimates of the succeeding year, and would make for a reduction in the rate of taxation.

Upon the other hand, if the current and floating liabilities requiring to be met out of the available assets exceed the amount of such collectible assets, then the excess of liability becomes a deficiency, which should be included in the estimates of the succeeding year, as a sum to be provided for, with a resultant increase in the tax rate.

As is well known, however, and, unfortunately, members of council are prone to omit from their estimates the liabilities of their predecessors in office, and these are allowed to accumulate until such time as they become unbearable, when recourse is had to special legislation for permission to consolidate the floating indebtedness and provide for it by a special debenture issue.

Revenues and Disbursements.		Assets and Liabilities.	
<p>Revenue.....</p> <p>ORDINARY: Cash on hand and in Bank Taxes, divided as to years Licenses Schools, divided as to Public, High and Separate Water Rates Electric Lights Fees Fines and Fees Rents Interest Other sources</p> <p>EXTRAORDINARY: Loans, Current Annual Debtors, General Sinking Fund, Local Improvement Sinking Fund, Interest Other sources</p> <p>Expenditure.....</p> <p>ORDINARY: Salaries Waterworks Electric Lights Grants and Charities Board of Works Fire Administration of Justice Police Department Baths Jury Markets Liquor Schools, divided as to Public, High and Separate Interest Printing, Advertising and Stationery Sinking Fund Sinking Fund, Interest Other sources</p> <p>EXTRAORDINARY: Loans, Current Debtors, General Debtors, Local Improvement Interest—General Debtors Interest—Local Improvement Debtors Sinking Fund Public Works in progress Local Improvements in progress Other sources</p>	<p>Assets.....</p> <p>ACTIVE.....</p> <p>RESERVE.....</p> <p>FIXED.....</p> <p>PASSIVE.....</p> <p>BONDED.....</p> <p>Liabilities</p> <p>FLOATING.....</p> <p>CAPITAL.....</p>	<p>Cash on hand Cash in Bank Taxes - Current Taxes - Arrears Water Rates Light Rates Sinking Fund Advances, Public Works in progress Advances, Local Improvement in progress Other Advances</p> <p>Sinking Fund, General Sinking Fund, Local Improvement Special Trust Funds</p> <p>NECESSARY INVESTMENTS. Sewerage System Electric Light System Fire Hall and Apparatus Market School Buildings and Equipments City Hall and Furniture Public Park Real Estate Hospital Public Works Equipment Other necessary investments</p> <p>SPECULATIVE INVESTMENTS. Stock in Railways Stock in Gravel Road Companies Other Speculative Investments</p> <p>Bridges Sewers Pavements Buses Local Improvements</p> <p>Debtors, General Debtors, Local Improvement</p> <p>Debtors, due and unpaid Loans, Current Loans, Local Improvement, in progress Arrears payable Other Indebtedness</p> <p>Surplus of Assets over Liabilities</p>	<p>Designed by P. H. Macpherson, C. A.</p>

that there is absolutely no means of check upon the dishonestly disposed official.

In these and other matters relating to municipal accounting methods there is room for much improvement, and very much could be done toward remedying the existing weaknesses by the introduction into the Municipal and Assessment Acts of such amendments and schedules as would provide a simple system of report as between urban, local and county municipal officials, and as between these officials and their councils. These very necessary changes cannot be brought about by the introduction of fragmentary amendments to the several Acts. The legislation should, instead, submit those portions of the several Acts having to do with the accounting methods of municipalities, to a commission of Chartered Accountants, men of known and undoubted experience in the matter of Municipal Accounts, who would prepare for submission to the Municipal Committee such amendments, changes and additions to the Acts as would, if made law, go far toward rendering more difficult, if not impossible, the possibility of speculation and wrongdoing by municipal officials.

The Balance Sheet or Asset and Liability Statement as ordinarily found includes in a more or less mixed con-

of instances the financial statements prepared for the guidance of the estimators are absolutely unintelligible upon this point, and councils have the ready excuse that the true position was not pointed out to them.

I furnish herewith a model form of Balance Sheet, which can be recommended as fulfilling the requirements suggested in the foregoing remarks.

Windsor, Ont., February 10, 1906.

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An architect in a Western Canada city who inserted a transient advertisement in the CONTRACT RECORD writes us as follows: "There were upwards of thirty-five replies from the Atlantic to the Pacific, and from some of the most out-of-the-way places, which shows conclusively that your paper has the circulation."

The B. C. General Contract Company, Vancouver, B.C., are busy with the completion of the Pitt River bridge foundation, which will be finished, it is expected, in June. The same company also have the contract for the erection of three steel spans near Glacier for the C.P.R. and for the concrete foundation for the Pacific Coast Lumber Company's new burner.

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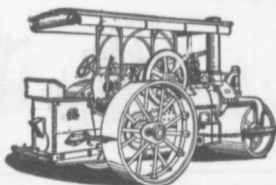


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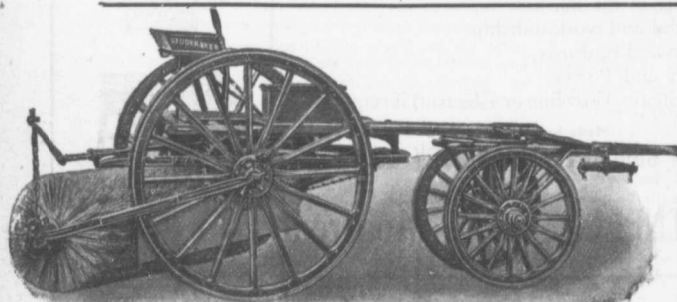
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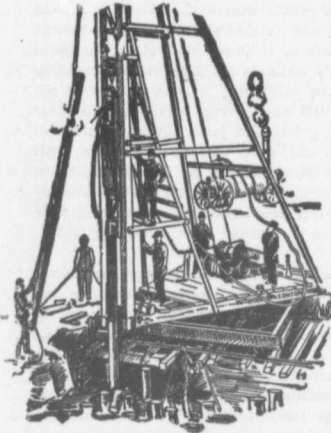
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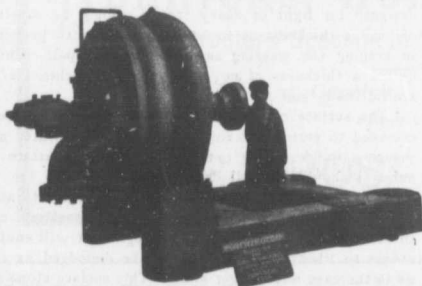
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ROADWAYS AND PAVEMENTS

BY C. W. DILL, A. M. CAN. SOC. C. E.

When a town or city first begins to think of street improvement and paving work, naturally certain matters present themselves for consideration, and as these are of much importance in the solving of problems presented, it is well that they should be thought out carefully before committing any corporation to a hap-hazard scheme which would not be in harmony with the future growth or requirements of that corporation.

The first requirement is the preparation of a suitable by-law under which local improvements may be carried out. This by-law should determine the rights of the corporation as well as those of the individual ratepayers on any street to be improved, should state the proportion of the cost of the improvement to be borne by the corporation at large, should deal clearly with the methods of securing needed improvements whether by petition of the ratepayers or on recommendation of the proper civic authority, and should give in detail everything relative to annual payments and other matters dealing with the relations between the corporation and the individual ratepayer.

The second requirement is the selection of proper engineering advice to guide the corporation in laying out some comprehensive scheme of street improvement, especially in advising as to the most suitable classes of pavements for streets under different and varying conditions of traffic, influences of weather, width of street to be paved to suit traffic conditions, grades, etc.

The present tendency is to permit agents of certain classes of pavements to circulate petitions which dictate the class of pavement, the width of roadway, the cost to be charged, etc., and a town or city unless properly advised finds itself going ahead under this system with nothing to guide it except the interested motives of those circulating petitions for this or that special form of pavement, and finds out the mistake when too late to apply a remedy except at a heavy cost.

CLASS OF PAVEMENT.

Small cities and towns are of necessity restricted in the selection of the kind of pavement to be used. Pavements requiring the use of expensive plant if laid at all are laid at a proportionately high cost, due to the high charges of moving plant, etc., and the question of repairs is one of serious moment. This restricts the selection to some material which is obtained locally and can be constructed at a reasonable cost, or to the use of paving materials which may be laid without the use of a costly plant and which may be repaired without trouble or undue cost. Pavements of this class are ordinary macadam, tar macadam, brick, treated wood blocks and asphalt blocks, the class of pavement to be used depending on the cost, the nature of the traffic, percentage of grades on the street and other local conditions to be decided upon and which may have a bearing on the future condition of the corporation if marked changes in growth and traffic conditions may be expected.

PLANS AND SPECIFICATIONS.

Having decided upon the class of pavement for a certain street and this pavement having been recommended in the proper way and the favorable verdict of the interested ratepayers been given, proper detailed plans and specifications, having relation to local conditions, should be prepared before tenders are asked for. Frequently a corporation, to save expense or to avoid injuring the feelings of an inexperienced official, will advertise for tenders on a specification copied in its entirety from some neighboring city, and with no data given by plan or otherwise which will enable a contractor to tender in an intelligent manner. The result is usually that someone relying on his ability to interpret things in his own way secures the contract and the work is done in a manner not intended, but which could have been avoided by a proper regard to details at the proper time.

The plan, with accompanying profile, should indicate clearly the extent of the work to be done, give all lengths, widths, extent of street intersections in plain figures, and the location of all manhole and street gully tops and other matters necessary to a full knowledge of what is required. The profile should denote the existing ground surface with the proposed finished surface of the pavement with elevations of each at frequent intervals to enable a "bidder" to accurately estimate the amount of excavation to the sub-grade of the pavement. A cross-section of the pavement should be shown, giving details of the construction of the curb, gutter and pavement, the amount of crown of the surface and other matters of value. All these should be made supplementary to the specifications, so that no conflict of opinion may arise in the carrying out of the work whether the tender be a lump sum price for the whole work or unit prices for various portions of the work.

Many specifications carry a clause stating that intending bidders must satisfy the corporation that they are competent by previous experience, and in other ways, to carry out the contract if awarded to them. In many cases this clause, though of much importance, is of no value whatever, as local influences frequently prevail and an entirely inexperienced contractor is given work involving the expenditures of large sums, and the result is constant worry and friction for the engineer, and if the progress be slow or the contractor find he has not tendered intelligently and because of losing money throws up the contract, there is nothing to be done but to let him down easily, because the corporation has nothing to realize on. This adds to the expense to the ratepayers and many times proves that the lowest tender is not cheaper than an intelligent tender from an experienced contractor who has built up a reputation for good work and who will carry out his obligations after entering into a contract.

Many cases may be cited where an engineer's estimate of work has been thought to be much too high because of irresponsible tenders, and it is well to be careful before entering into such contracts which may alter all be detrimental to the interests of the corporation, for if the work be done without a loss to the contractor, it is at the expense of good lasting work by an attempted use of inferior materials and impoverished concrete, etc.

MACADAM ROADWAYS.

Naturally, with so much suitable rock within reasonable distance of our towns and cities, macadam roadways are common, and when properly constructed meet the demands of ordinary traffic where cleanliness and the absence of dust are not too essential. These roadways, whether designed for light or heavy traffic, should be constructed of such a thickness as to be permanent, with proper care in keeping the wearing surface in good repair. This requires a thickness of not less than 10 inches for light traffic roads and 14 inches for heavy.

The surface of the completed roadway should be well crowned to permit the rapid carrying off of water and to insure a quick drying out of the travelled surface. The sub-soil should be well drained so as to keep the pavement dry, as a soggy roadway will cut into ruts and get out of repair quickly. The wearing surface should consist of stone broken to a size small enough that will enable the stones to "bed" properly and not be dislodged as readily as is the case with larger stone. This surface stone should be "blinded," preferably with small stone chippings and stone dust rather than with gravel or sand, as is usual. These roadways are naturally very dusty, and unless repeatedly sprinkled are most objectionable on business streets or on streets leading to business streets. Attempts have been made to get over this difficulty by the use of oil for sprinkling instead of water, and under certain conditions has been fairly successful. The cost, however, is too great, and a much preferable method is to overcome

the difficulty by the use of tar macadam roads. These are constructed with the same kind of base, etc., as for ordinary macadam, but the surface or wearing coats or layers have a tar and paving pitch cement mixed in certain proportions and under certain variable conditions to meet the special case being dealt with. Much greater care is needed in grading the stone as to secure a mixture with the minimum of voids so as to form as nearly as possible a perfectly cemented mixture. This when properly rolled makes a smooth waterproof surface which can be readily cleaned and thus remove to a certain extent the objection because of dust. These roads have not, however, been a success on business streets or on streets subjected to any degree of heavy traffic, which streets require a surface which combines smoothness, cleanliness, a good foothold for traction purposes, a moderately permanent wearing surface, and of such material as will admit of easy and economical repair. In cities this is best met by using sheet asphalt, but in smaller cities and towns which have no permanent paving plants the preferable materials are brick, treated wood blocks and asphalt blocks. These all have similar foundations and differ only in the treatment of the wearing surface material.

BRICK PAVEMENTS.

A good brick must be tough enough to resist wearing, but not brittle enough to chip under the concussion of horseshoes or grind under heavy traffic. It must also be close grained and compact and sufficiently annealed to prevent any appreciable absorption of water, an excess of which would rapidly disintegrate the brick in the process of freezing and thawing and also in making the brick soft and liable to crush under traffic. These brick should be of the largest size which will permit of the proper burning and annealing in the making so as to not leave unburnt centres which will absorb too much water. They should be made with proper contrivances to ensure a uniform spacing in laying so as to permit sufficient grouting to be used to make a united surface and should be true and even on the surface to ensure as noiseless a pavement as possible. A brick pavement has many advantages in being sanitary, easily cleaned, affording a good hold for traffic purposes, being readily repaired and being moderately cheap. It is, however, noisy and, unless properly laid and grouted, the bricks "cobble," and the wear and noise increase very rapidly and the pavement is soon destroyed.

WOODEN BLOCKS.

Treated wood blocks are used very generally in many English and European cities, but, curiously, not here, mainly because of the lack of suitable wood near at hand and also because of the lack of experience with reference

to this special class of pavement. When properly selected, treated with a good preservative and laid with care, this is almost an ideal pavement, as it combines most of the good features of the brick without the objectionable ones. The great drawback is the unsanitary conditions liable to arise if not properly kept clean, and this is no fault whatever of the pavement, but of its treatment. At present the cost is rather high, but it seems strange that some suitable Canadian wood cannot be secured to answer the requirements necessary for this class of roadway.

ASPHALT BLOCKS.

Asphalt blocks have had a varied experience, due entirely to the imperfect methods of making the blocks. These are made of a mechanical mixture of small stone chips, sand, dust and an asphalt cement, the block being moulded and subjected to a very strong pressure while the materials are hot, similar to the rolling process of a sheet asphalt pavement, one being done at a factory and the other on the street. There is no reason why the blocks should not be satisfactory if properly and carefully made, and the resulting pavement has many good features and combines practically all those of the brick and treated wood blocks. The only drawback is the liability to rot under conditions of undue moisture, which difficulty can, however, be easily removed by seeing that the surface is even and has a proper amount of "crown" and "grade" to quickly drain off the water and prevent any trouble from moisture.

All of these three pavement surfaces are not laid directly on the concrete foundation, a cushion coat being supplied for the purpose of permitting the blocks to be rolled to a true, even surface, and also to prevent any sudden concussion or heavy concentrated load from crushing individual bricks or blocks resting on the hard, uneven concrete surface.

The spaces between the bricks are filled with a cement grout to prevent water causing trouble and to keep the blocks tight in place to prevent chipping and undue wear.

With wood blocks and asphalt blocks a sand filler seems to be preferable because the traffic hammers or beats down the surface of the blocks and a more uniform homogeneous surface is secured than when a cement filler is used which would isolate each block from those surrounding it.

All of these pavements described are suitable for business or residential streets under all conditions of traffic, the only difference being the treatment of the foundation to bear heavy or light loads as the case might be.

But no pavement will be a success unless it be constructed on sound engineering lines and principles and is properly cared for after its completion. A proper attention to cleanliness and repairs will aid in maintaining a roadway in good condition which would rapidly fail with neglect.

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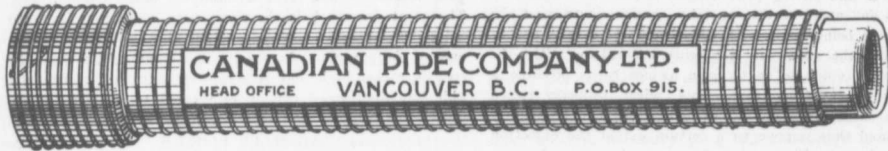
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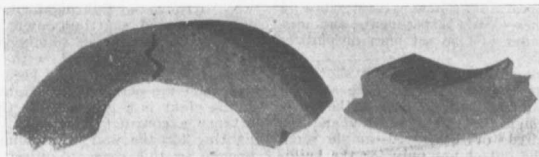
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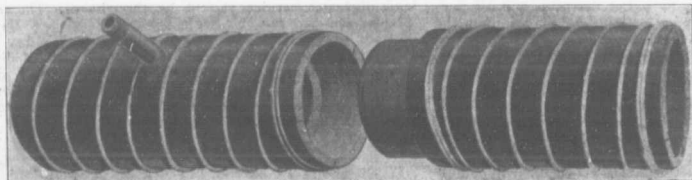
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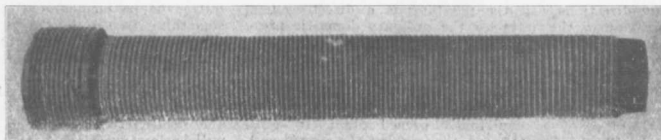
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ELECTRIC LIGHTING OF A SMALL CITY OR TOWN

By F. A. CAMBRIDGE, City Electrician, Winnipeg.

The lighting service of a small city or town is often a more difficult problem than that of a larger one, partly for the reason that usually the business or "load" of the plant is very scattered; the amount to be expended on street lighting is limited, and there appears little prospect of a satisfactory day load being forthcoming. For these reasons the standing charges of the plant are apt to be higher in proportion to the connected load than in the case of the larger city.

At the outset the writer would affirm that whether the plant is to be a municipally owned, or privately controlled, one, the services of a thoroughly competent and disinterested consulting engineer should be retained, and his advice acted upon—not simply in the first layout, but also in subsequent extensions or enlargements of any moment. It rarely comes about that the powers that be, whether municipal councils or boards of directors, will, in a plant of this size, engage and retain the services of a man as manager or superintendent, thoroughly competent to deal with all problems of both a business and mechanical or electrical nature—consequently through false economy a "cheaper" man is placed in charge, and in too many cases the plant appears in a few years' time a thing of shreds and patches—costly experiments and mistakes having been carried out and no set plan or purpose followed.

The design of the plant in a growing town should be such that it can be enlarged from time to time and yet retain evidences of more forethought than afterthought—the building of such a design that its symmetry and usefulness will not be impaired or destroyed—ample room having been obtained at the outset not only for the building and its inevitable enlargement but also for storage and other purposes. The type of apparatus to be installed, also the size of the units, the voltage to be carried, these should all be considered from the standpoint of future growth as well as present efficiency. In a plant of this size with the amount of money and business available "scrapping" is apt to be a more serious consideration than in the larger city.

It will in the long run be found desirable for all parties that as steady a load as possible be placed upon the plant—with this in view the matter of furnishing power for pumping the town water supply is well worth considering. The success of motor driven centrifugal or multi-stage rotary pumps is established, so that the operation of the pumping system from electric power will usually be found advantageous. In the case of a privately owned plant the town should not only be able to contract for power at a favorable rate but should also be able to make better terms for street lighting. The furnishing of a day load is not only of advantage to the plant but is a convenience to the citizens, and if the merits of electric power for numerous industries are duly set before the public, manufacturing is encouraged and growth assured in many directions. If the pumping is a direct system the operation of the units for the ordinary domestic pressure can be operated and their consumption of current measured. For a fire pressure a centrifugal "booster" driven by a separate motor can be applied, the current for which can be separately metered. Or, a rate per million gallons pumped could form the basis of charge.

In the case of a municipally owned plant it will usually be found advantageous to combine the water and light plants in the one building, particularly if a steam plant is installed. In this case the building should be fireproof throughout, the boiler, engine and dynamo rooms separated by suitable division walls, and the dynamos and switch-boards and other electrical apparatus installed on a higher level than the water plant, so that in case of any accidental flooding no damage would be likely to be caused to the former.

Should the town favor the granting of a franchise to a company or individual, the contract for power and street lighting should be for not less than a term of five years. No one should expect as favorable a rate under a short term contract as one having reasonable duration. Street lighting apparatus is special and cannot be used for any other purpose after the contract is taken away. A clause should be inserted, however, that "in case the maximum number of lights is increased at the expiration of years beyond the number now contracted for, the town should be entitled to a reduction in the price per lamp per night." In this way one of the benefits of decreased cost of operation as the load increased would accrue to the town, and in this way would stimulate the installation of additional lamps and a more liberal appropriation for street lighting.

As to the system of illumination for street lighting—

the business streets should be lighted by arc lamps, also any bridges, railroad crossings and the like. For residence streets and infrequently travelled roads 32 c. p. or 50 c. p. series incandescent lamps will be found to be a satisfactory illuminant. By their use a given appropriation can be made to give reasonably good lighting over a larger area than if arcs only are used. The lamps spoken of should not be confounded with the ordinary incandescents so often seen and so seldom giving effective results. The writer has had in operation a number of the above lamps for a considerable period and has found their use most satisfactory.

The installation of the constant current transformer fed from the constant potential alternating generators will usually be found to furnish a satisfactory medium for arc lighting—the closeness of their regulation enables the plant to operate both series enclosed arcs and series incandescents on the same circuits with excellent results.

Regarding a schedule for street lighting—in a town of this size a Moonlight Schedule is usually ample. If the town is operating the plant considerable economy can be arrived at by operating in this way; shutting down for an increasing number of hours as the moon nears "full," with little or no lighting for a night or two each side of full moon and shutting down after that when moon is well up for a number of nights, will furnish very fair service (if administered with discretion). The station operators, however, should keep a lookout for heavy clouds and start up, otherwise constant complaints will come in. If the plant is a private one, the town might with profit arrange a contract on the basis, of, say, 3000 hours of lighting for the year, following a schedule similar to above. In this case an officer of the council should be empowered to order lights on at any time. The hours run could be checked by Bristol recording ampere meters in each circuit and any deductions or extras allowed at the year's end. With other suitable provisions as to outages, etc., the above should form a satisfactory form of schedule.

Whether the plant is municipally owned or not, nothing but a meter system as a basis of charge for commercial and domestic service should be thought of. The smaller plants are too apt to begin operating with a flat rate system of charges, and when the inevitable day comes when the meters have to be used a great deal of dissatisfaction is brought about which would have been avoided by adopting a more sane method at the start. Considerable study should be given to the matter of rates and discounts, as all business is not of the same value to the plant.

If the plant is to be operated by the town, the entire system should be placed in charge of a competent man—not only from an electrical standpoint but also from the business point of view. He should be given an absolutely free hand in the employment of his help and their discharge, and whether he is responsible to a board or committee or to members of a commission, he should have something to say in the awarding of all contracts. All suggestion of politics should be rigidly excluded and every encouragement given to men who show a disposition to perform a little more than their duty. Complete and reliable records and account should be kept of all details of operation and expenditure, and every item rightly chargeable debited to the lighting system. If this is done there will be less question as to actual cost of operation.

In reference to the much discussed matter of depreciation, the writer would prefer, in the case of municipal plants, to have a fixed percentage set aside each year and placed to the credit of the plant, out of which repairs and replacements could be cared for. If there is a bond issue with sinking fund set aside annually, this will usually take care of any reasonable depreciation through obsolescence. The above is, it is believed, more satisfactory than taking care of repairs and replacements as they arise—spasmodically—which is apt to throw an undue burden on the plant at intervals—possibly little at the beginning and inevitably more later on. In some municipally owned systems this percentage is added yearly to the actual cost, in others it is not shown at all, but repairs and maintenance charged up to the operating account. In others due provision is made for sinking fund payments, while in others the capital expenditure is not raised by debentures but is provided out of current revenues. The writer believes the method suggested would prove a satisfactory way of dealing with the question, but in many instances the financial arrangements of towns or cities do not allow of any credits being carried over from year to year, making it necessary for those in charge to smooth out the peaks of the financial load by endeavoring to meet these expenditures in as systematic a manner as possible.

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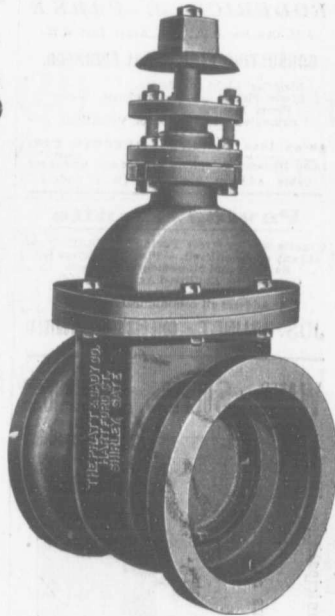
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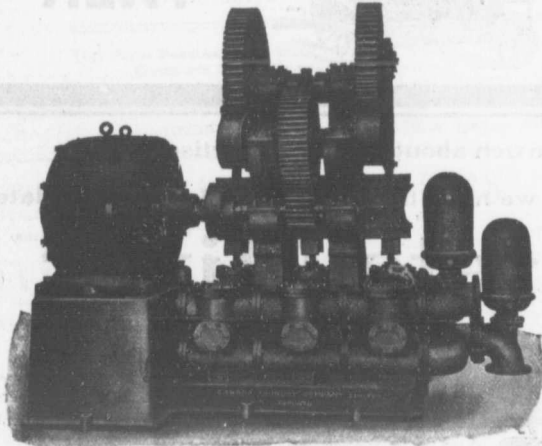
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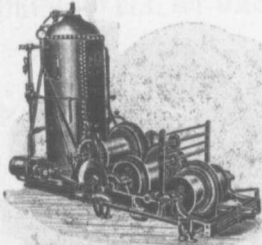
District Offices: MONTREAL HALIFAX OTTAWA WINNIPEG VANCOUVER ROSSLAND

M. BEATTY & SONS, Limited

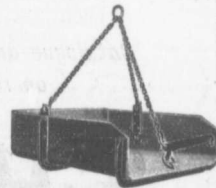
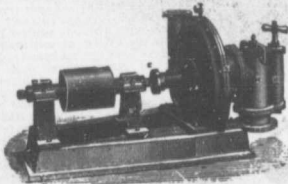
WELLAND, ONTARIO

Manufacturers of

DREDGES, DITCHERS, DERRICKS AND STEAM SHOVELS



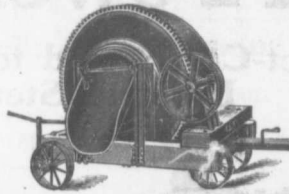
MINE HOISTS.
HOISTING ENGINES.
SUBMARINE ROCK DRILLING MACHINERY.
STONE DERRICKS.
CLAM SHELL BUCKETS,
STEEL SKIPS.
COAL AND
CONCRETE TUBS.



CENTRIFUGAL PUMPS for water and sand.

AGENTS: E. LEONARD & SONS, MONTREAL, QUEBEC, ST. JOHN, N. B., AND CALGARY, ALTA.
THE STUART MACHINE CO., WINNIPEG, MAN.; THE WM. HAMILTON MFG. CO., VANCOUVER, B. C.

PLAIN

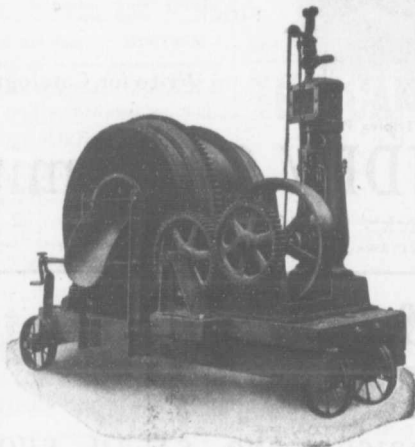


TALK

—We don't know much about writing advertisements—

But we **DO KNOW** that we have the simplest and most up-to-date

Concrete Mixer on the Market



1906 Model Ransome Mixer. Note Heavy Gears.

We Know that our machine is easy to operate and the discharge arrangement is perfect.

We Know you can save the labor of three extra men by installing a Ransome Mixer.

We Know the concrete turned out is unexcelled for strength and uniformity.

We Know that you can save money on the original cost.

We Know our machine and we are ready to guarantee it to be perfect in workmanship and action.

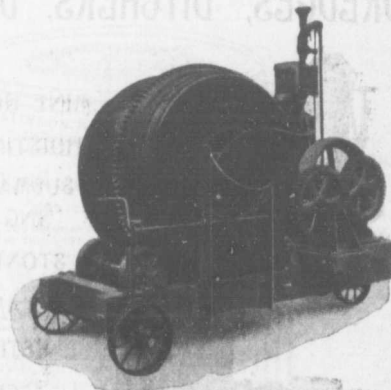
You Run No Risk

MIXERS SUPPLIED

With or without power.
All capacities.
On skids or trucks.

LET US HAVE YOUR ENQUIRY

*Catalogue and particulars
on request*



F. H. Hopkins & Co.

Successors to the Late James Cooper
MONTREAL

Dunn Bros. & Company, Winnipeg Agents