

# CANADIAN CONTRACT RECORD

A WEEKLY JOURNAL

**PUBLIC WORKS • TENDERS •**  
**ADVANCE INFORMATION •**  
**AND MUNICIPAL PROGRESS**

EVERY WEDNESDAY

*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. 14.

JANUARY 13, 1904

No. 48.

## THE CANADIAN CONTRACT RECORD,

PUBLISHED EVERY WEDNESDAY

As an Intermediate Edition of the Canadian Architect and Builder.

Subscription Price \$6 per annum, payable in advance.

## THE G. H. MORTIMER PUBLISHING COMPANY

of Toronto, Limited,  
 CONFEDERATION LIFE BUILDING, TORONTO.  
 Telephone Main 3762.

Branch Offices:

Imperial Building, Montreal,

Telephone Main 2299.

22 Great St. Helen's, London, England.

Advertising Rates on application.

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## TO BUILDERS

Tenders will be received by the undersigned till TUESDAY, 19TH INST., for the erection of a cottage in Toronto Island.

The lowest or any tender not necessarily accepted.

BURKE & HORWOOD, Architects,  
 28 Toronto st., Toronto.

## TENDERS FOR

### Stone Paving Blocks

Tenders, sealed and endorsed "Tender" addressed to the undersigned will be received up to 12 o'clock noon on MONDAY, THIR 19 FEBRUARY, 1904, for

### Stone Paving Blocks

Specifications and blank tenders may be obtained upon application to Mr. John Kennedy, Chief Engineer, at this office. The Commissioners reserve the right to reject any or all of the tenders received.

DAVID SEATH,

Secretary-Treasurer.

57 Common Street, Montreal, 30th Dec., 1903.

## TENDERS

Sealed tenders addressed to the County Clerk, R. F. Miller, Rainham Centre, Ont., and endorsed "Tender for Oswego Creek Bridge," will be received until SATURDAY, THE 23RD OF JANUARY, 1904, for the construction of a bridge across the Oswego Creek on the township line between the townships of Canboro and Moulton, six miles north of Dunnville, Ont. To be built in accordance with plans and specifications prepared by the County Engineer, W. H. Fairchild. Said plans and specifications may be seen at the office of the Engineer at Simcoe, Ont., or with the undersigned near the site of the proposed bridge.

Tenders must be made separate for the steel superstructure, in two spans 60 feet each, with bottom for concrete floor and for the substructure, two abutments and one pier to be stone masonry.

Tenders will also be received up to TUESDAY, MARCH 1ST, 1904, for the laying of a concrete floor upon the said bridge, work to be done according to plans and specifications of the County Engineer, and under his supervision. The lowest or any tender not necessarily accepted.

GEORGE VAN KEURN,  
 Chairman Road and Bridge Committee,  
 Haldimand County Council,  
 Dunnville, Dec. 22, 1903.

## TENDERS

For the BRICK WORK, CUT STONE WORK, CARPENTRY, Etc.,

Of the amended plans for the completion of TOWER and the construction of SPIRE for the Church of St. Mary, Bathurst Street, Toronto, Ont., will be received till 3 P.M. TUESDAY, 19TH INST., by the Very Rev. J. J. McCann, P.P., V.G., St. Mary's Presbytery, Macdonnell Square, Bathurst Street, Toronto, Ont., where the plans and specifications may be seen.

N.B.—The lowest or any tender will not necessarily be accepted.

## TENDERS

Sealed tenders for the purchase of \$3,754.65 19 per cent. Local Improvement Debentures of the Village of Chesley will be received by the undersigned up to 7:30 o'clock p.m. of MONDAY, JANUARY 19TH, 1904.

A marked cheque payable to the order of the Treasurer of the Village of Chesley for \$100, as a guarantee of good faith, to accompany each tender.

The highest or any tender not necessarily accepted.

JOS. McNEILL,  
 Village Clerk.

## BRIDGE TENDERS

Will be received by the undersigned on behalf of the County of Huron, at Wingham P.O., Ont., until 5 o'clock p.m. on SATURDAY, THE 23RD DAY OF JANUARY, 1904, for the erection of the superstructures of four bridges, three to be in the County of Huron and one on the boundary of Huron and Perth, as follows:

First one to be erected over the Maitland River on the boundary line between East and West watersheds, to be two clear spans of 120 feet each between pier and abutments. Trusses to be 20 feet high, of 8 panels; roadway 16 feet wide, steel joists at 4 feet centres, floor of rock elm or tamarack 3 inches thick, wheel guards 535 inches, of pine or cedar; railing 4 feet high, of 4 tiers of 1 1/2-inch gas pipe; strength required, 100 lbs. per square foot of floor surface, and large safety factor; about 25 feet from bed of stream to floor; rock bottom and little water. Completion the 15th of September next, 1904. Seven miles from R. R. station at White Church.

Second Bridge to be erected over a branch of the Maitland River, on the boundary line between the townships of Howick and Grey, of one clear span of 70 feet between the abutments, 16 feet roadway; trusses 8 feet high, 3 panels; wheel joists 1 feet; floor 3 inches thick, of rock elm or tamarack; wheel guards 535 inches; railing 4 feet high, of 3 tiers of 1 1/2-inch gas pipe; about 13 feet from bed of stream to floor; strength 100 lbs. to square foot of floor. To be completed on or before the 15th day of August next.

The third bridge is to be erected at the town of Wingham and is to be of the same size and strength and structure as Bridge No. 2. To be completed the 1st September next, 1904.

Bridge No. 4 is to be erected over a creek on the boundary line between Usborn and Blanchard Townships, at the village of Kirkon. To be 20 feet long clear between the abutments, 16 feet roadway. The joists, floor and railing to be of the same style and make as Nos. 2 and 3. About 8 feet from bed of stream to floor; hard bottom to stream. Bridge to be completed the 1st of August next. Tender for each bridge separately.

Tenders must be accompanied by a marked cheque payable to the County Treasurer equal to 5 per cent. of amount of tender. Should any party whose tender is accepted fail to execute the necessary contract and bonds, and give satisfactory security for the due fulfilment of the contract, the deposit accompanying the tender will be forfeited to the County of Huron. The deposits of unsuccessful tenders will be returned.

The lowest or any tender not necessarily accepted.

JOHN ANSLBY,  
 County Commissioner for County Huron.  
 Wingham, December 28, 1903.

## TENDERS FOR DEBENTURES

Sealed tenders will be received by the undersigned up to 5 o'clock p.m. of JANUARY 25TH, 1904, for the purchase of \$12,000 Debentures of the Village of Iroquois, bearing interest at 4 per cent., and repayable in twenty equal annual instalments. The highest or any tender not necessarily accepted.

JAS. FLANAGAN,  
 Village Clerk.

## CONTRACTS OPEN.

PORT DOVER, ONT.—There is talk of building a new town hall.

AMHERST, N.S.—The Intercolonial Railway will enlarge the freight shed here.

ELGIN, ONT.—Mrs. O. Lambson has purchased a lot on which to build a residence.

COLEBROOK, ONT.—James Middleton intends building a new brick residence in the spring.

BLIND RIVER, ONT.—Eddy Bros. & Co. will build several dwellings for their employees.

WATERLOO, ONT.—The Evangelical church congregation are considering the building of a new edifice.

BRANDON, MAN.—H. E. Hills has purchased property on N 1/2 street on which he intends building a fine hotel.

ALMONTE, ONT.—The by-law to raise \$10,000 for permanent sidewalks was carried by a large majority last week.

CHICOUTIMI, QUE.—The Quebec & Lake St. John Railway Co. will make extensive improvements to the station here.

SPRINGHILL, N.S.—R. H. Cooper will receive tenders up to February 17th for the erection of a Y.M.C.A. building here.

BELLEVEILLE, ONT.—The Militia Department have accepted the city's offer of the hospital lot as a site for new drill shed.

CLYDE FORKS, ONT.—Thompson, Avery & Gray, whose saw mill was burned last week, will rebuild immediately.

BILLINGS BRIDGE, ONT.—The Methodists have an option on property corner of Bank and Dufferin streets on which to build a new church.

MARKHAM, ONT.—Ernest Crosby purchased property on Main street on which he will build a fine residence during the coming summer.

PEMBROKE, ONT.—The by-law authorizing the town to loan \$50,000 to the National Mfg. Co. has been withdrawn at the request of the company.

NORTH BAY, ONT.—The town wants to raise \$50,000 to meet floating debt, build a town hall, and extend the water-works.—Plans are on foot to erect brick blocks facing the C.P.R. station.

ORILLIA, ONT.—The town will apply to the Legislature for permission to raise \$100,000 for extension of its electrical power transmission plant.

PORT ARTHUR, ONT.—W. H. McWilliams, manager of the Canadian Elevator Co., states a company will build at this place an immense grain elevator.

ST. JOHN, N.B.—The Dominion Government will be petitioned to at once do the necessary dredging for the new berths on the west side of the harbor.

TORONTO JUNCTION, ONT.—It is reported that the Union Stock Yards Co. intend building a first class temperance hotel, work to be commenced in the spring.

SYDNEY, N.S.—The Dominion Government is taking tenders up to 14th inst. for alterations to the post office here. Plans at post office and at office of C. E. W. Dodwell, resident engineer, Halifax.

CORNWALL, ONT.—The Cornwall Paper Mfg. Co. want tenders by 6 p.m., Wednesday, 20th inst., for erection of a stone and brick building and other works at Mille Roches, near this town. Plans at office of E. H. Brown.

LONDON, ONT.—Matthews & Murray, architects, are preparing plans for residences to be erected on St. James and Oxford streets, also for alterations and additions to house on Park avenue for Thomas McCormick.

NIAGARA FALLS, ONT.—The Monastery of Mount Carmel, near this town, is about to undergo extensive alterations and additions involving an expenditure of \$50,000, and Geo. W. Gounlock, architect, of Toronto, has been instructed to close contracts to that amount.

KINGSTON, ONT.—The Sanganee Electric Co., of Springfield, Ohio, are reported to have decided to establish a factory here for the manufacture of electric motors.—A number of Pittsburg capitalists have purchased one of the largest islands in Mud Lake and intend building thereon a \$25,000 club house.

VICTORIA, B.C.—The management purpose making extensive improvements to the interior of the Dawson Hotel building on Yates street.—The Consolidated Cariboo Hydraulic Mining Co. have decided to provide an improved water supply, at a cost of \$200,000. The water will be brought a distance of seventeen miles.

CHATHAM, ONT.—The township of Chatham is about to build a new iron bridge across the Sydenham river at Tupperville.—The by-law to loan \$50,000 to the Chatham, Wallaceburg & Lake Erie Railway Co. has been carried by a large majority. The company will build an electric railway from Chatham to Wallaceburg, and in the other direction to Rondeau, on Lake Erie.

OWEN SOUND, ONT.—R. T. Butchart, of Shallow Lake, is interested in the proposed establishment of cement works near Vancouver, B.C., and will shortly leave for that city. In the meantime J. C. Forster, architect, of this place, is preparing plans for a bungalow to be erected in Vancouver for Mr. Butchart.—A new pipe organ will be installed in the First Methodist church.

HALIFAX, N.S.—Fitzpatrick & Co. report that financial arrangements have been made for the construction of 250 miles of the Nova Scotia Eastern Railway and that construction will begin early in the spring. H. H. Fitzpatrick, of New Glasgow, is interested.—The city engineer has reported that sewers costing \$74,000 should be constructed this year.

MONTREAL, QUE.—The time for receiving tenders for supply of granite paving blocks has been extended by the

harbor commissioners to February 1st.—It is proposed that the waterworks reservoirs on Mount Royal shall be remodelled so as to provide increased capacity.—The Mount Royal Club have sent a cablegram to Lord Strathcona in London asking if he will allow his representative to rent the Thomas Workman residence to the club for temporary quarters. The building is situated at the corner of Sherbrooke and University streets and would require an expenditure of considerable money for new plumbing and other improvements.

WINNIPEG, MAN.—H. S. Griffith, architect, is asking for tenders by January 16th for a three-storey brick addition to the Occidental Hotel for D. Ristein.—Among the contemplated improvements this year is an additional storey to John Leslie's block on Main street and two storeys to Sutherland & Campbell's premises, corner Princess street and Bannatyne avenue, now occupied by the Kigour, Rhymer Co.

HAMILTON, ONT.—J. A. C. Harris, Royal Hotel, desires to communicate with corporations with a view to securing a site for a factory to manufacture table and floor oil cloth.—It is said that \$1,000,000 will be spent on improvements to buildings in the heart of the city during the coming season. The C.P.R. Telegraph Co., Dominion Express, Fred Claringbowl, J. G. Cloke and J. Y. Osborne, whose stores join the main office of the Bank of Hamilton, have received notices that their premises may be needed when the leases expire.—The Toronto, Hamilton & Buffalo Railway have submitted plans to the city engineer for the strengthening of the Aberdeen avenue bridge.

VANCOUVER, B.C.—The Stave Lake Power Company has been purchased by foreign capitalists, represented by Thomas Wilson, of this city. The intention of the new owners is to develop the property immediately and to furnish light and power to Vancouver.—L. M. Baum, of the Pacific Coast Wooden Pipe Company, of Seattle, contemplates the establishment of a branch factory in this city.—Parr & Fee, architects, have taken tenders on the erection of an apartment house on the corner of Georgia and Hornby streets for John A. Chase, a former resident of Moodyville. It will be three storeys and basement, 120x50 feet, frame on stone foundation, cement walls, cost \$30,000.

OTTAWA, ONT.—The Dominion Government has just taken tenders on an addition to the printing bureau.—It is learned that the Government has under consideration a scheme for the construction of a large and more modern building on the site of the burned post office.—Parliament will be asked at its next session to incorporate a company to construct a line of railway from White Horse westerly to the international boundary, and thence northerly by way of the White River Valley to Dawson.—It is probable that St. Matthew's church congregation will build a rectory this year.—A petition is in circulation asking for the paving with asphalt of Albert street, from Concession to Bank street.—The Department of Railways and Canals will receive tenders up to February 20th for supply of British Columbia Douglas fir timber required for the Rideau canal during the year 1904.—The Canada Atlantic Railway Co. have decided not to build their proposed elevator at Depot Harbor this winter.

FREDERICTON, N.B.—The Commissioner of Public Works is calling for tenders for rebuilding Weldon bridge, Albert county.—James P. Geddes, of New York, representing the Canadian Coal Mining Co., has asked the New Brunswick Government to grant a charter for the construction of a railway from Coal

Branch, Kent county, to the company's mines, with power to extend to Richibucto Harbor, sixteen miles, and westerly to connect with the New Brunswick Coal & Railway Company's line at Chipman. It is proposed to commence railway building the coming spring.—F. B. Carvell, of Woodstock, has asked the Government to approve of the building of a dam across the Meduxnakeag river, for which purpose a company was incorporated some time ago.—Gilman Bros. & Burden, of Pokiok, and H. W. Shaw, of the Shaw-Cassells Co., Hawkeshaw, are promoting a scheme to construct an electric railway from Fredericton to Woodstock, utilizing the Pokiok Falls for power. It is said that the Shaw-Cassells Co. are willing to put \$100,000 into the scheme.

TORONTO, ONT.—Burke & Horwood, architects, are taking tenders up to 19th inst. for erection of cottage on Toronto Island.—The Toronto Suburban Railway Company give notice that they will apply to the Legislature for power to construct branch lines to the village of Woodbridge and the town of Brampton and through the city of Hamilton, passing through the counties of Wentworth, Lincoln and Welland, to Niagara Falls.—The Kemp Manufacturing Co. have, it is understood, secured a block of land extending south of their present building on River street with a view to making another important addition to their factory.—The property at the north-west corner of Queen street and Spadina avenue is said to have passed into the hands of a party who intends building a new store on the site.—Samuel May & Co., manufacturers of billiard tables, etc., have purchased the buildings and land at 102 and 104 Adelaide street west. The buildings will be remodelled to meet the requirements of the new owners.—The Board of Control desires tenders by January 19th for supply of a 30-ton suspension stock scale and appurtenances for the sheep barn of the cattle market.—The Consumers Gas Co. will apply to the Ontario Legislature for permission to increase its capital by \$3,000,000, the money to be expended on the construction of new plant and mains.—Plans are being prepared for the reconstruction of the Hamilton street school.—The city engineer is preparing a general plan for enlarging the city's water mains, the suggestion being that payment be extended over a number of years. The work recommended for immediate construction is a 24-inch main on Front street, from Church to Sumach street, and a 16-inch main on Queen street, from the Don to Broadview avenue.—Building permits have been granted as follows: L. Baker, one-storey workshop and stable, west side Pape avenue, near Gerrard street, cost \$1,000; McBean & Verrall, one-storey office building, east side Bathurst street, near Esplanade, cost \$1,000; William Pudifin, two pairs two-storey brick dwellings, east side Dufferin street, between Dundas and College streets, cost \$5,600, also three pairs two-storey rough-cast dwellings, brick fronts, west side Gladstone avenue, near Dundas street, cost \$6,600.—The council has given notice of its intention to construct the following works: Asphalt pavement, St. Vincent street, from Grenville to St. Joseph, cost \$9,524; track allowance on Bathurst street, from College to Bloor, cost \$23,525, also from Bloor street to north city limits, cost \$23,860; Markham street, from Harbord to Herrick, cost \$3,400; tar macadam roadway on Salisbury avenue, from Sackville street west, cost \$641; 12-inch tile pipe sewer on Summerhill avenue, from 730 feet east of Yonge street to 322 feet further east, cost \$603; a number of concrete sidewalks, including Grace street, east side, from Henderson avenue to

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Arthur street, cost \$1,691; Seaton street, west side, from Queen street to Wilton avenue, cost \$2,307; Margueretta street, west side, from Bloor street to 960 feet north, cost \$1,466; Markham street, west side, from Robinson to Arthur, cost \$1,269; Anderson street, north side, from Simcoe to McCaul, cost \$838.—J. W. Siddall, architect, James Bldg., is now taking tenders on the erection of a factory at Gravenhurst for the Clark Mfg. Co.—The Canada Cycle & Motor Co. have leased for a term of years the building on the north-east corner of Temperance and Bay street and will erect a building on the lot adjoining the present warehouse.—The following notices of motion were given at the inaugural meeting of the city council: That the Fire and Light Committee be requested to report on the advisability of erecting a fire hall in the vicinity of Kew Beach; that the City Engineer be requested to report upon the advisability of extending the water mains on the island; that a by-law be submitted to the electors to provide funds for the construction of the Lansdowne avenue subway other than the amount imposed on the railways, according to plans prepared by the City Engineer; that a sufficient sum be placed in the estimate to purchase an asphalt plant; that funds be provided for enlargement of Cowan avenue fire hall, and that the city architect be instructed to prepare plans for the addition also that a book and ladder truck be purchased for said hall; that the City Engineer prepare plans and specifications for broad level bridge over the Don river and ravine to connect Wilton Avenue and Elliott street; that the Chief of the Fire Brigade report on the necessity of building a fire hall east of the Don.

**FIRES.**

Saw mill of the Clyde Forks Lumber Company, at Clyde Forks, Ont., on the Kingston and Pembroke Railway, loss \$10,000. Thompson & Avery, of Sharbot Lake, are interested. — Brinkworth's general store and Frank Williamson's implement warehouse at Belmont, Man., totally destroyed; loss \$9,000.—Patents storage building of the Laurie Engine Company, Montreal, damaged to extent of \$10,000.—Residence of George Noyes at Burlington, Ont.—Saw mill of Edmond Maranda at Ste. Tite des Caps, Que., totally destroyed. — Indian Industrial School building at Qu'Appelle, Assiniboine. — Residence of Mrs. William Boomer, Windsor, Ont., damaged to extent of \$2,000.—Saw mill of William Powers at Midway, B. C., totally destroyed.—Marcel Beullac's decorating

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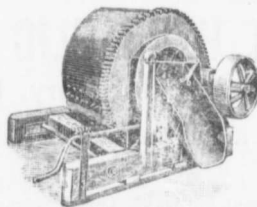
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establishment and Favre & Gravel's stationery store, Montreal, partially destroyed; loss \$25,000.—Shoe factory of Stirling Bros., London, Ont., loss \$60,000.—Diamond Hotel at Scotia Junction, Ont., owned by Frank Montgomery.—Flour mill of R. J. Matheson at Dartmouth, N.S.; loss \$8,000.—Mount Royal Club building, corner Sherbrooke and Stanley streets, Montreal, almost totally destroyed; loss \$150,000.—Building at Campbellford, Ont., owned by P. W. Reynolds, of Norwood, damage \$2,000.

#### CONTRACTS AWARDED.

**QUEBEC, QUE.**—The council has decided to purchase 1,000 feet of Red Cross hose, at 75 cents a foot.

**HAMILTON, ONT.**—E. A. Depew has secured a contract to build 100 houses in the north-eastern part of the city, the estimated cost being \$100,000.

**OTTAWA, ONT.**—Thomas McLaughlin has been awarded the contract for iron work on new bridge over the canal at Concession street, price about \$7,000.

**TORONTO, ONT.**—It is stated that Mackenzie & Mann have given a contract of 25,000 tons for standard rails for the Canadian Northern Railway to the Illinois Steel Co., at \$26 delivered at Port Arthur.

**FREDERICTON, N.B.**—The contract for steel superstructure of the French Fort Cove bridge in Newcastle parish, Northumberland county, has been awarded to the Ruddock Foundry, of Chatham, N.B. The following additional bridge contracts have been awarded by the Provincial Government: Germanton bridge, Albert county, to Whitman Brewer, St. Marys; Herring Cove bridge, Albert county, to W. J. McKenzie, Elgin, Albert county; Leslie Brooke bridge, Victoria county, to Wm. DeMerchant, Perth; Boat Loading bridge, Victoria county, to Henry Boone, Rowens, Victoria county; Basil Martin bridge, Madawaska county, to Whitman Brewer

St. Marys; Baker Lake bridge, Madawaska county, to Whitman Brewer; O'Regan Brooke bridge, Victoria county, to Wm. DeMerchant, Perth; Little Sal-

mon River bridge, Victoria county, to George Hanson, of Victoria county; Calhoun's Mill bridge, Westmorland county, to John M. Brown, Moncton.

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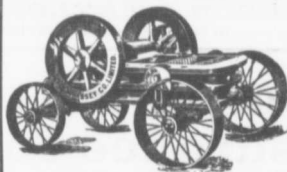
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**COST OF DREDGING WITH DIFFERENT CLASSES OF PLANT.**

(Concluded).

The excavation made by the dipper dredgers and delivered into scows at side of dredgers amounts to 525,306 cubic yards. One of these dredgers has a dipper with a capacity of 2½ cubic yards. The dipper has three steel teeth, about 6x5 inches. The hull is 85 feet long, 28 feet wide and 10 feet deep. There are three anchoring and supporting spuds, each 20 inches square. The dipper arm is 28 feet long, of wood sheathed with steel. The material was delivered into scows, each having a dropping pocket with a capacity of 140 cubic yards. A tugboat took these scows in turn into the St. Lawrence river, dropping the excavated material in a bay near the mouth of the canal. The distance to which the scows were towed averaged about 5,500 feet.

The dipper dredger worked ten hours per day. The tug and scows could not be operated at night. This dredger excavated to a depth of 20 feet below water surface.

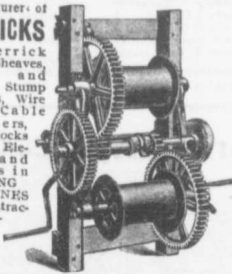
The cost of operating this dredger, including the crew of dredger, tug and scows, coal, supplies, etc., was for each day of ten hours \$30.56.

The cost of dredger, tug, and two scows is \$43,000. Interest at 4 per cent. is \$1,720 per annum. One tenth cost for repairs and renewals is \$4,300 per annum. These distributed over actual working days would be \$28.80 per working day. Care during winter months, distributed over working days, \$1.00 per day. The total cost per actual working day of ten hours is thus:

Labor, supervision, coal and supplies.....	\$30.56
Interest, repairs and renewals.....	28.80
Care during winter.....	1.00
<b>Total.....</b>	<b>\$60.36</b>

This dredger excavated, delivered into scows, and deposited in the river 138,001 cubic yards in 183 days of 10 hours, thus giving an average of 754.1 cubic yards per day of 10 hours. The average cost was thus, with allowance for repairs, renewals, care in winter, coal, supplies,

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Chains, Stump  
Pullers, Wire  
and Cable  
Stretchers,  
Tackle Blocks,  
Material Elevators,  
and Dealers in  
HOISTING  
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and Contractors'  
Supplies.



National Hoist & Machine Co.  
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and labor, both for dredger, scows, and towing tugs, 8.04 cents per cubic yard.

This excavation was in indurated material, as described above. Neither the centrifugal pump dredgers nor the orange peel bucket dredgers referred to below could excavate this material.

The attempt to use vacuum orange-peel dredgers for this excavation was abandoned, and one of them was rebuilt as the centrifugal pump dredger with 18-inch discharge pipe, described above. The other vacuum dredger was sent to the vicinity of New York, and is working in material quite different from any encountered in the canal.

The following summary of the results of the work has been made:

The total amount excavated by dredgers in this canal was 1,436,000 cubic yards. There were in addition excavated by other means 4,433,000 cubic yards.

The vacuum pump dredgers with orange peel buckets and pipe transmission lines were not serviceable in excavating and transmitting either the indurated or the softer material.

The centrifugal pump dredger excavating by revolving cutter to depths under water not exceeding 22 feet, lifting the material to a height of 30 feet above water and depositing it through a pipe of 12 inches diameter, 1,200 feet distant from the canal, could not excavate the indurated material but worked with success in the softer material. It excavated and deposited in three seasons 459,800 cubic yards of this material at an average cost of 8.507 cents per cubic yard, this cost including labor, supplies, coal, repairs, re

newals and care during the winter seasons.

The centrifugal pump dredger, generally similar to the one last mentioned but with a discharge pipe 18 inches in diameter, working in the softer material, excavated and deposited in two seasons 290,780 cubic yards at an average cost of 9.399 cents per cubic yard. The centrifugal pump dredgers worked 22 hours of each 24 hours.

The dipper dredgers excavated during three seasons 525,306 cubic yards. This was indurated material. It was deposited in scows and towed by tugs and deposited in water about 5,500 feet from the dredgers. One of these dredgers with a dipper of 2½ yards capacity, working 10 hours each day and excavating to a depth of 20 feet below the water surface, lifted and delivered 1,800 cubic yards in 183 working days of 10 hours, at an average cost of 8.04 cents per cubic yard, this cost including labor, supplies, coal, repairs, renewals and care in winter, for the dredger, scows and tug for towing.

Coal is included in these statements at a cost of \$3.00 per ton; the modification for a different price of coal can be readily found.

In latitudes where dredging can be done during all seasons of the year the modification required can be easily made from the data above given; the cost per unit will be reduced provided also there is continuous work for the dredger throughout the year.

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## BUSINESS NOTES.

The planing mill of Davis & Eizerman, Mitchell, Ont., has been sold to W. Eizerman.

A. W. Atkinson, of Advocate, N. S., is offering for sale his brick and tile plant.

C. Destrempe, tinsmiths and plumbers, St. Cuthbert, Que., recently suffered loss by fire.

McAdam Bros., stone cutters, Hillsboro, N. B., are reported to have made an assignment.

May, Thomas & Company, manufacturers mantles, etc., Montreal, are said to be asking for an extension.

The Manitoba Composite Brick Manufacturing Company has been incorporated at Winnipeg, Man.

J. M. Marcette has been appointed curator of the Estate of Philias Sicard, plumber, Montreal.

Eugene X. Fardival has registered proprietor of the business of J. M. Fardival, painter, Quebec, Que.

A meeting of the creditors of G. T. Browning, builder, Aurora, Ont., has been called for January 15th.

The Lac du Bonnet Brick Company are supplying the brick for the new Union Bank building in Winnipeg.

The creditors of F. A. Carpenter & Company, wholesale steamfitters' supplies, Hamilton, will meet on the 15th inst.

The annual general meeting of L'anneprairie Brick Company will be held in the city of Montreal on January 18th.

Nicholas Swan and Kenne D. Church have registered as proprietors of the business of Swan, Church & Company, contractors, Montreal.

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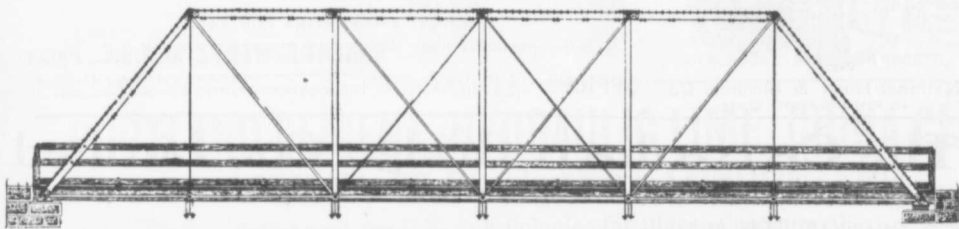
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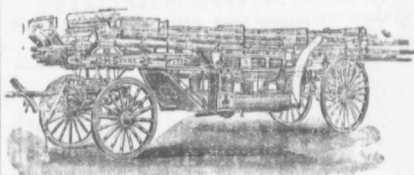
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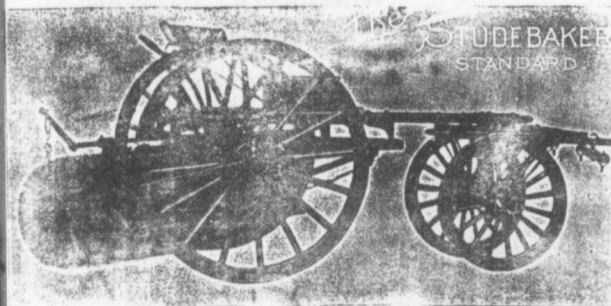
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Company has been incorporated under the laws of Manitoba, with head office in Winnipeg.

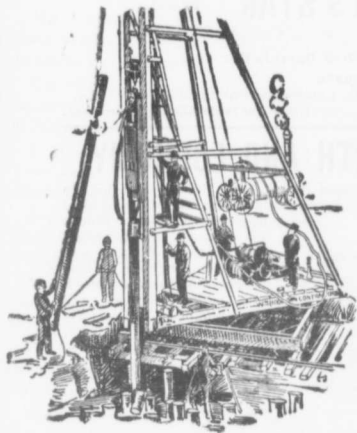
Mr. Rogers, building inspector of Winnipeg, states that indications warrant the conclusion that building operations this year will exceed those of 1903.

R. E. Dunn has accepted the position of manager for the real estate department of the Canada Brokerage Company,

Limited, Winnipeg. The company also deals in the supply of machinery for the manufacture of artificial stone and brick.

Hiram Donkin has resigned the presidency of the Cape Breton Silicate Brick Company and the Cape Breton Red Granite Company, of Sydney, N.S. C. M. Odell, of Glace Bay, N.S., has been elected president of the Silicate Brick Company.

L. M. Baum, of the Pacific Coast Wooden Pipe Company, of Seattle, Wash., contemplates the establishment in Vancouver, B.C., of a branch of his manufactory. There is a considerable demand for a cheap pipe for waterworks purposes particularly, and it has been found that those manufactured from the excellent timber of British Columbia are a good substitute for iron.



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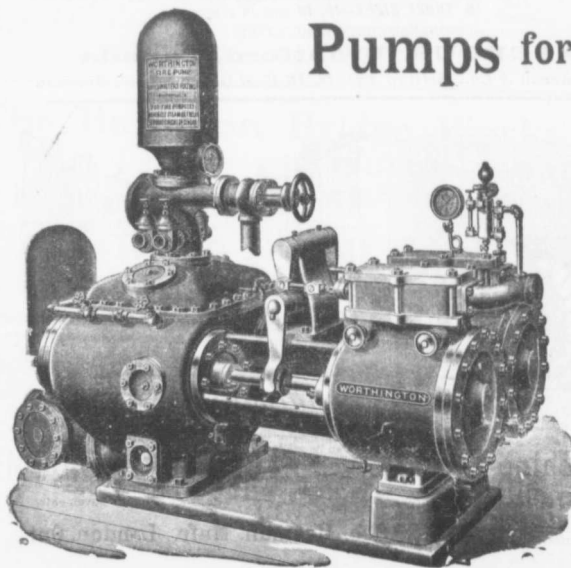
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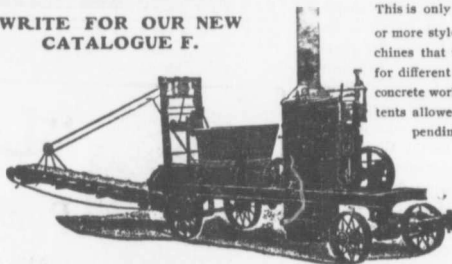
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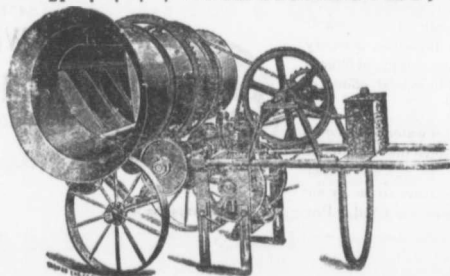
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### COVERED RESERVOIRS.

Concrete grained arch covers for reservoirs built to hold filtered water are connected in such a marked manner with the filtration of water in modern public water supply practice that they are considered wholly as a modern construction, says the Engineering Record. This view is not to be criticized as a matter of substantial accuracy and yet there are some reservoirs with masonry covers that are at least as old as Spanish-American masonry in Port Rico, if not Central and South America. Obviously such masonry designs were matters of convenience or for the purpose of securing a necessary water supply in fortresses or other similar locations, the matter of the preservation of water in good sanitary condition with light and air excluded not having been recognized at the time.

The introduction of filtration for the improvement of municipal water supplies has rendered absolutely necessary, in many locations at least, its preservation under conditions more or less similar to that of deep under-ground storage. It is not intended by this observation to imply that filtered water may not sometimes be properly stored in open reservoirs, for that has been done and is being done without materially prejudicial consequences under favoring conditions. As a broad and general principle, however, it may be stated that where the filtration of water supplies is contemplated, covered reservoirs must also be considered as an essential part of a properly designed system. The pressing need of proper storage of filtered water is forcibly illustrated by the report recently made by the Commission on Additional Water Supply for the City of New York, in which the distributing or equalizing reservoir for receiving filtered water at the northern limit of the city is recommended to be covered in the usual manner with concrete masonry arches, although the full capacity of the reservoir is over 2,000,000 gallons. Again, concurrently with the strong recommendation of immediate filtration of the present or Croton supply is the recognition of the advisability of covering not only the new Jerome Park reservoir, still uncompleted, but also those now in use in Central Park. These expressions of opinion by experienced engineers, based upon the best practice of the present time, show unmistakably that, as a general proposition, any public body devising plans for a supply of pure water should incorporate in them the masonry covered reservoir for the storage of filtered water to preserve the beneficial effects of filtration.

This particular field of water-works construction does not involve the formidable expense which a few years ago was associated with it, nor are there so many unknown elements as were supposed. Pro-

bably not less than twenty reservoirs covered with grained arches have been built in the United States within the last six or eight years, or are now being built, and the experience gained from these structures shows that under proper design and supervision of construction the grained arch covering above the springing line of the arches need not cost over about 50 cents per square foot of area, unless unusually heavy loads are to be carried. A

considerable number of instances of less cost are on record. With further improvement in methods and materials it is practically certain that the present cost will be sensibly reduced.

(To be continued.)

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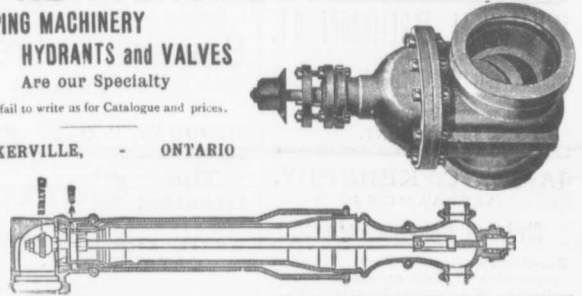
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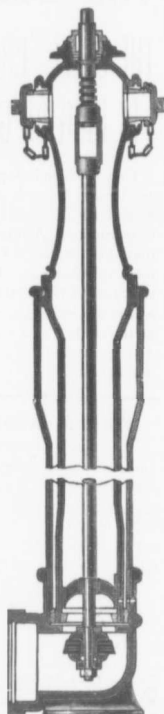
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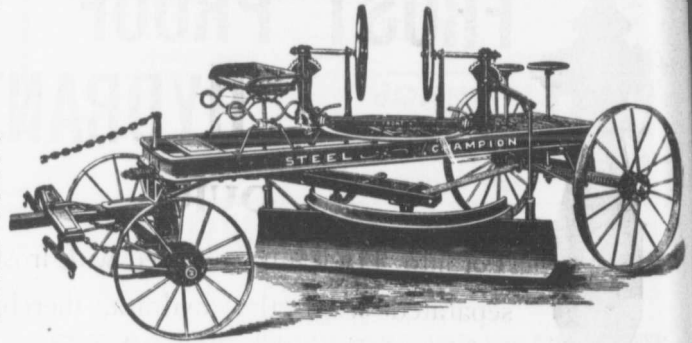
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3	20 00	21 00
Buff No. 1	18 50	19 50
2	25 50	26 50
Brown	30 50	31 50
Roman Red	40 50	41 50
Buff	12 00	13 00
Brown	13 50	14 50
Hard Building	12 00	13 00
Sewers	11 50	12 50
Backing	11 50	12 50

Don Valley PRESSED BRICK WORKS.

Nos. 1, 2 and 3, Red PRESSED BRICKS	15 00	16 00
Nos. 1 and 2 Buff PRESSED BRICK	18 50	19 50
No. 1 Brown PRESSED BRICK	25 50	26 50
Fornepian Red, Buff and Brown PRESSED BRICKS	30 50	31 50
Ornamental Bricks of all kinds for Mantel purposes	40 50	41 50
Porous Terra Cotta Fireproofing of all Descriptions	5 00	5 50
Vitrified Street-Paving Bricks	8 50	9 00
Semi-Vitrified Foundation Bricks	10 00	10 50
Common Stock Red and Grey Bricks	12 00	12 50
Sewer Bricks	13 00	13 50
Stone for Macadamized Roadways	15 00	15 50

TORONTO PRESSED BRICK AND TERRA COTTA WORKS

Red No.	F.O.B. Milton, Ont.	F.O.B. Montreal
1	12 50	13 50
2	12 50	13 50
3	8 50	9 00
Buff No. 1	15 00	16 00
2	13 00	14 00
Brown	20 00	21 00
Roman Red	30 00	31 00
Buff	30 00	31 00
Brown	35 00	36 00
Hard Building	5 50	6 00
Sewers	6 50	7 00
Backing	6 00	6 50
Moulded and Ornamental Bricks from \$2.00 to \$5.00 per 100		
Terra Cotta String Courses and Friezes, from 50c. to \$2.00 per ft. run		
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Red Peerless Facing	F.O.B. Beamsville	F.O.B. Montreal
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No. 2	11 00	12 00
No. 3	8 50	9 00
Brown Peerless Facing	20 00	21 00
No. 1	18 00	19 00
Buff Peerless	20 00	21 00
No. 1	18 00	19 00
No. 2	15 00	16 00
Moulded and Ornamental Bricks from \$3.00 to \$10.00 per Ct.		
Roman Red (Size 12 x 4 x 3 1/4 in.)	28 10	33 50
Buff	28 00	33 50
Brown	34 00	39 50
Vitrified Pavin Brick No. 1	18 00	23 50
" " No. 2	19 00	24 50
Sewer	6 00	12 00
Roofing Tile	22 10	26 00

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Car lots	F. O. B. Toronto	Less
Boyd	21 00 M.	26 00 M.
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Common Rubble, per ton delivered at building	Toronto	Montreal
	3 50	11 00
Large flat Rubble, per ton delivered	14 00	18 00
Foundation Blocks, per c. ft.	4	50
Granite (Stanstead) Ashlar, 6 in. to 12 in., rise 3 in., per ft.		25

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	Toronto	Montreal		Toronto	Montreal
Verberst Red Sandstone	85	70	SLATE.		
Amherst N.S., per cu. ft.			Ro 6x2 (W 1/2x3/4)		
5 kvill-N.R. brown stone			red	20 00	20 00
f. o. b. Quarries	35	45	purple	9 00	10 00
Stanstead granite paving	30 00		unfading green	10 00	11 00
blocks, 8 in. to 12 x 6 in.			black	9 00	9 00
12 1/2 in. per M.		50 00	Ferra Cotta Tile, per sq.	15 00	16 00
Granite curbing stone, 6x			Ornamental Black Slate Roofing		77 50
36 in. per lineal foot		71			
Buctouche Olive Freestone	85	65	PORTLAND CEMENT.		
Olive Sandstone (Indian-	80	70	English—	Toronto	Montreal
town, N. B.)			Brook's Shoobridge Anchor	2 35	2 40
Brown Sandstone (Sack-	80	70	Excelsior Brand	2 00	2 10
ville, N. B.)			Belgian—		
Mont red sandstone, per	80	70	"Castle" Brand		2 10
cu. ft.			"Jossou" Brand	2 60	2 70
Black Pasture buff stone	50	60	"North's" Condor	2 40	2 50
per cu. ft.			Cathedral	2 35	2 50
Nova Scotia blue grey, per cu. ft.	65	65	"White Cross"	2 15	2 20
Coursers, 6 to 8 in. bed, f. o. b.			Atlas	2 25	2 35
St. Mary's, per cord	7 00	7 00	Hammer	2 25	2 35
Footings, 6 to 10 in. wide, per			Fed Cross Brand	1 80	1 90
cubic foot	15	15	Waterloo		2 20
Dimension Stone, f. o. b. St.			Raevel's 395 lb. bbl.		2 55
Mary's, per cubic foot	35	35	Leite Bros.		1 90
Granite (Laurentian Pink) Ash-			White Star	2 25	2 35
lar, 6 to 2 in. rise 9 in., per c. ft.	40	40	German—		
Dimension Stock Granite, (Laur-			Offenacher Brand	2 80	2 90
entian Pink) for building pur-	40	40	Dyckerhoff	2 60	2 70
poses, per c. ft., f. o. b. quarries			Karlstadt	2 80	2 90
Do. for polishing purposes, up	70	70	Heemmoor	2 30	2 30
to 2 tons weight, per cubic foot			Cannon	2 40	2 50
Dimension stock granite for			Heidelberg	2 30	2 40
building purposes, per cu. ft.	50	50	Canadian		
Do. for polishing purposes, up	1 00	1 00	Rathbun's Star	1 90	2 10
to 2 tons weight, per cubic ft.			Esnaig	1 70	1 90
Paving sets, per thousand block	60 00	60 00	Citadel		2 00
			Trowel		1 75
			Samson Brand	2 00	2 05
			Magnet	1 75	1 80
			Monarch		2 00
			Hercules		2 00
			Lion Brand		1 75
			Imperial		1 50
			American—		
			Alpha Brand	1 80	1 90
			Alex's	2 50	2 25
			Lenigh, in bbl., 375 lbs.		2 00
			" cotton sacks, 250 net		2 30
			" open bags		2 10
			Keene's superfine "Whites"	10 00	12 00
			Keene's Coarse "Whites"	6 50	7 00
			Fire Bricks, Newcastle, per M	37 00	38 00
			" Scotch	28 00	33 00
			Plaster, Calcined, N. B.		2 00
			" " N. S.		2 00