

# 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. 12.

SEPTEMBER 18, 1901

No. 33

## THE CANADIAN CONTRACT RECORD,

PUBLISHED EVERY WEDNESDAY

An Intermediate Edition of the "Canadian Architect and Builder."

Subscription price of "Canadian Architect and Builder" (including "Canadian Contract Record") \$2 per annum, payable in advance.

G. H. MORTIMER PUBLISHING COMPANY  
of Toronto, Limited.

CONFESSION LIFE BUILDING, TORONTO

Telephone 2362.

Branch Office:  
Imperial Building, Montreal.  
Telephone Main 2292.

Advertising Rates on application.

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## BRIDGE NOTICE

Scaled Tenders, marked "Tender for Superstructure of Andover Bridge," will be received at the Department of Public Works, Fredericton, until

Monday 30th day of September,  
1901, at noon,

For building the Steel Superstructure of "Andover Highway Bridge," across the St. John River, connecting the Villages of Andover and Perth, Victoria County, N.B., according to Plans and Specifications to be seen at the Public Works Department, Fredericton, N.B. The structure consists of five through pin connected truss spans, each 183 ft. 10 in. in length from centre to centre of end pins. For detail information relating to plans and specifications apply to A. R. Wetmore, provincial engineer, Fredericton, N.B.

Each tender must be accompanied by a certified bank cheque or cash, for an amount equal to five per cent. of the tender (would prefer not receiving P.O. orders), which will be forfeited if the party tendering declines to enter into contract when called upon. Should the tender be not accepted the deposit will be returned. Two good sureties must be named in each tender. Not obliged to accept lowest or any tender.

C. H. LABILLOIS,  
Chief Commissioner.

Department of Public Works,  
Fredericton, August 13th, 1901.

## TENDERS

will be received by the undersigned up to noon on  
September 28th, 1901

for an issue of \$10,000 of County of Waterloo Debentures, 20 years at three and one-half per cent. interest. For further information, address

HERBERT J. HOWMAN, C.E.  
County Clerk and Treas.

Berlin, Sept. 16, 1901.



## NOTICE TO CONTRACTORS

Tenders for Pavements and Sidewalks, Roadways.

Tenders will be received by registered persons only, addressed to the Chairman of the Board of Control, City Hall, Toronto, up to noon on TUESDAY, SEPTEMBER 24th, 1901, for the following works:—

### ASPHALT PAVEMENTS.

College Street, Beverley to Spadina Ave.  
College Street, Spadina to Bathurst.  
Parliament Street, Gerrard to Carlton.  
Pearson Avenue, Macdonell to Sorareun.  
Hayden Street, Church to east end.  
Dufferin Street, 277 feet south of Queen to King.

### BRICK PAVEMENTS.

May Street from South Drive to 456 feet north.

### CEDAR BLOCK PAVEMENTS.

Lorne Street, w. s., from a point 27 feet south Front to 108 feet further south.  
Dovercourt Road, College to Bloor.  
Wright Avenue, Sorareun to Roncesvalles Avenue.

### MACADAM ROADS.

Hayden Street, from Yonge to Church.  
Bathurst Street, from Bloor to Czar.

### CONCRETE SIDEWALKS.

Lorne Street, west side, from 135 feet south Front to 254 feet south.  
Bedford Road, west side, from Lowther to Bernard.  
South Drive, south side, from N. South Drive to Dunbar Road.  
Spadina Crescent, west side, from Spadina S. to Spadina N.  
Dowling Avenue, east side, King to Queen.  
Murray Street, east side, Cacer-Howell to Orle.  
Ontario Street, east side, Carlton to Winchester.  
Carlton Street, south side, Jarvis to Sherbourne.  
Selby Street, south side, Sherbourne to Huntley.  
Shuter Street, north side, George to Sherbourne.  
Bernard Avenue, south side, Bedford Road to a point 141 feet west.  
Queen Street, north side, 82 feet east Lansdowne Avenue to West Lodge Ave.

Contents of envelopes containing tenders must be plainly marked on the outside.

Plans and specifications may be seen on and after Friday, September 14th, 1901 and forms of tender obtained at the office of the City Engineer.

The usual conditions relating to tendering, as prescribed by by-law, must be strictly complied with, or the tenders will not be entertained.

The lowest or any tender not necessarily accepted.

O. A. HOWLAND (Mayor),  
Chairman of Board of Control.  
City Hall, Toronto, Sept. 12th, 1901.

### DATE OF PUBLICATION.

Architects, engineers, municipal authorities and others are reminded that the CONTRACT RECORD is printed every Tuesday afternoon, and that advertisements should reach the office of publication not later than 2 o'clock p.m. on that day to ensure insertion in the issue of the current week. Advertisements are frequently received too late for insertion, to avoid which special attention is directed to this announcement.

### CONTRACTS OPEN.

MILTON, ONT. — A new Anglican church will be built near the brickworks.

STELLARTON, N.S. — M. Doherty is this week taking tenders for erection of hotel.

PARRY SOUND, ONT. — Ernest Collett has commenced the erection of a new residence.

VERMILLION, ONT. — The Hudson's Bay Co. contemplate building a rolling mill here.

LACHINE, QUE. — The by-law to borrow \$27,000 for improvements was voted down last week.

ADOLPHE, ONT. — A. McGugan invites tenders up to the 19th inst. for erection of brick schoolhouse.

WATERVILLE, QUE. — F. G. Gale is about to build an addition to his factory, brick, two storeys, 85x52 feet.

BRADFORD, ONT. — A new heating system will likely be installed in the House of Refuge, at a cost of \$1,500.

PALMERSTON, ONT. — Tenders are asked by S. J. Kearns up to 24th inst. for erection of skating rink, 168x78 ft.

RIDGETOWN, ONT. — The Michigan Central Railway will lay a double track between this place and Bismarck.

ESSEX, ONT. — The trustees of Grace Methodist church are having plans prepared for re-seating, painting and heating.

NORTH SYDNEY, N.S. — Tenders are asked by Joseph Salter up to 20th inst. for enlargement of Methodist church.

PEMBROKE, ONT. — Bids are invited by J. P. Sarsfield up to Saturday, 21st inst. for supply of 1,000 feet of fire hose.

DRAYTON, ONT. — Tenders for a coal furnace for the Presbyterian church will be received by James Duncan up to October 1st.

DUBLIN, ONT. — James Jordan, clerk, township of Hibbert, is asking for tenders up to 23rd inst. for construction of the Hooper dam.

SYDNEY, N.S. — The council have decided to engage T. C. Keefer, C.E., of Ottawa, to report on the question of a water supply for this town.

HARRISTON, ONT. — It is expected that a by-law will be submitted to the ratepayers shortly to raise \$8,000 for rebuilding the public school.

OAKWOOD, ONT. — The township of Mariposa intends constructing a system of drainage in this village. Particulars from J. B. Weldon, township clerk.

MIDLAND, ONT. — Bids for the purchase of \$60,000 waterworks debentures are invited by D. L. White, Jr., on behalf of the town, up to 30th inst.

GALT, ONT. — The council will likely submit a by-law to the ratepayers to raise \$7,000 for the erection of a factory for the Royal Carpet Company, of Guelph.

**BLIND RIVER, ONT.** A planing and shingle mill will be erected here this fall.

**NANAIMO, B. C.**— Surveyors are making good progress in locating a route for the Nanaimo Alberni railway. D. R. Harris is in charge.

**ALEXANDRIA, ONT.**— Tenders close at noon, to-day (Wednesday) for excavating, pipe-laying, and refilling of a sewer, about 1,600 feet.

**GODERICH, ONT.**—H. N. Green, consulting engineer of Montreal, will make surveys for the proposed electric railway through Huron county.

**HAVELOCK, N.B.**— W. H. Freeze has purchased a lot on which to build a carriage factory.—Fred Corey, of Boston, will build a residence here next spring.

**GUELPH, ONT.**—From government authorities who were here last week it is learned that steps are to be taken at once to select a site for the proposed armoury in this city.

**BERLIN, ONT.**— A by-law to grant the Berlin, Preston & Hamilton Electric Railway a bonus of \$25,000 for the completion of their road was defeated here on Monday last.

**MORRIS, MAN.**— Tenders for excavating about 5,200 yards of earth and building a dump across the Horse Shoe Lake are invited by R. N. Whitworth up to 21st inst.

**NEW WESTMINSTER, B.C.**—It is reported that the Pacific Coast Lumber Company is considering the construction of large saw and shingle mills on Burrard Inlet, Vancouver.

**HUNTSVILLE, ONT.**—The town is offering for sale \$22,000 30 year four per cent. debentures. Tenders will be opened October 1st Particulars from T. M. Cullon, town clerk.

**FORT WILLIAM, ONT.**— W. J. Copp, of Copp Bros., Hamilton, has made arrangements to establish an iron foundry at this place, to be managed by his son, Harold Copp.

**PENETANGUISHENE, ONT.**— Mr. Holmes, architect, of Toronto, has prepared plans for the completion of the R. C. Memorial church at this place. The estimated cost is \$8,000.

**OWEN SOUND, ONT.**—The trustees of the Baptist church are considering the erection of a new edifice.—Engineers will shortly survey the route of the proposed Mantoulin & North Shore Railroad.

**WALLACEBURG, ONT.**— Local capitalists are considering the formation of a joint stock company to absorb the present electric light company and establish a system of waterworks throughout the town.

**KINGSTON, ONT.**— It is reported that the C.P.R., having recently purchased the Kingston and Pembroke railway which connects with the main line at Sharbot Lake, may build a fine hotel in this city.

**STRATFORD, ONT.**— A by-law to borrow \$20,000 to pay off civic indebtedness and complete the sewage disposal plant was carried by the ratepayers on the 11th inst.—Tenders close 26th inst., for the purchase of \$20,000 debentures.

**AMHERST, N.S.**— A company has just been formed here, with Mayor James A. Dickey as president, to operate a coal mining property at river Herbert. It will be known as the Minute Mining Company, and will put on a new plant at once.

**LINDSAY, ONT.**—The town council has given notice of its intention to construct the following works: Granolithic walk on William street, from Russell street to Durham street, cost \$1,350, and from Kent street to Russell street, cost \$788; sewer on Kent street, cost \$7,517.

**ST. CATHARINES, ONT.**— Mr. Holmes, architect, of Toronto, has prepared plans and will shortly invite tenders for the remodelling of the R. C. Deanery.—The Security Loan & Savings Company have decided to build a number of residences for employees of the McKinnon Dash & Metal Works.

**ST. JOHN, N. B.**—Tenders are about to be invited by the city for putting down 12,000 yards of asphalt pavement.—Tenders will close in two weeks for new desks and seats for one of the public schools.—It is rumored that alterations are to be made to the pulp mill of the Cushing Sulphite Fibre Company.

**PETERBOROUGH, ONT.**—A deputation from this vicinity last week interviewed the Minister of Railways and Canals and asked for the erection of a bridge across the Trent river at Heeley Falls. It was promised that the matter would be considered at the next session of parliament.

**TORONTO JUNCTION, ONT.**— Building operations promise to be brisk this fall. Mr. Manson contemplates building a residence for himself on the corner of Clendennan avenue and Annette street, also four houses on Annette street and three on Clendennan avenue. Several houses are also to be built on Humber side avenue.

**PORT ARTHUR, ONT.**— Charles Wright is negotiating for the erection of a pulp mill at Dryden.—The proposed annex to the King elevator will not be built this year.—By-laws to raise \$30,000 to complete the Current River water power development and \$6,000 to purchase land for the Pigeon River Lumber Co. were carried here last week by large majorities.

**NIAGARA FALLS, ONT.**— The Canadian Niagara Power Co. invites tenders up to noon of 21st inst. for the following: Framing, placing and filling of cofferdams in the Niagara river to the extent of 700,000 feet B. M.; laying of underground conduit to the extent of 36 ducts for one mile. Particulars from Cecil B. Smith, resident engineer.

**HALIFAX, N.S.**— On behalf of the city W. L. Brown, treasurer, invites bids up to October 8th for loans of \$120,000 and \$11,800, both of which will bear interest at 4 per cent.—R. J. Wilson, secretary school commissioners, invites offers up to October 2nd for purchase of \$21,000 of debentures, required for improvements to Alexandria school and for the manual school building.

**COLLINGWOOD, ONT.**— J. A. Currie, of the Cramp Steel Company, states that contracts will be let next week for the erection of the company's buildings. There will be a train mill 210x50 feet, bar and rod mill 200x70 feet, boiler house 200x60 feet, and pit furnace house 105x60 feet. It has been decided to advertise for tenders for a sewage system, to be done in accordance with plans and specifications prepared by C. E. Speakman of Toronto.

**OTTAWA, ONT.**—Tenders are asked by the Department of Public Works up

to September 27th for the construction of an extension to the south pier at Bayfield, Huron county, also for the erection of an immigrant building at Saskatoon N. W. 1.—A petition is being circulated asking for the construction of the proposed dyke designed to prevent the annual freshets from the Rideau river; the estimated cost is \$21,000.

**VICTORIA, B.C.**— The Provincial Government is about to build a government house in this city, tenders for which close on the 25th inst. A cheque for \$1,000 is to accompany each tender.—The question of raising \$100,000 for sewage purposes is now before the city council.—Tenders are asked by the Provincial Public Works Department up to September 30th for erection of a bridge across Kettle river, in the West Kootenay district.

**ST. THOMAS, ONT.**—Tenders are invited up to noon of the 20th inst. for building two concrete abutments for a bridge over Dingman's creek, in the township of Westminster. Plans at office of James A. Bell, C.E., this place.—E. H. and W. E. Thomas have made a proposition to the city council to establish a factory here for the manufacture of brooms, brushes, and woodenware. In lieu of a bonus of \$20,000 they agree to erect two brick buildings, two stories, 200x40 feet.

**HAMILTON, ONT.**—J. A. Zimmerman has purchased Garland & Rutherford's drug store and purposes making improvements thereto—Building permits have been granted as follows: Donaldson & Patterson, brick dwelling on Herkimer street, cost \$1,600; Copley, Noyes & Randall, alterations to building corner Merrick and McNab streets, cost \$1,600—Tenders closed this week at the office of Stuart McPhee, architect, for addition to boiler and heating apparatus to public library.

**VANCOUVER, B.C.**—It is announced that Stone & Webster, electrical engineers, of Boston, have signed an agreement with the Stave Lake Power Company to install the necessary plant at Stave Lake, and that work will be commenced immediately. The electric power will be transmitted to this city and New Westminster.—The report is confirmed that the British Columbia Railway Company have applied for rights at Coquitlam Lake for the purpose of developing power. The manager states that the cost of the proposed plant will be about \$500,000.

**WINNIPEG, MAN.**—The council is about to undertake the following works: Granolithic walk on north side of Rupert avenue, cost \$1,900; sewer on Flora avenue, cost \$1,855, and on King street, from Sutherland avenue to Flora avenue, cost \$3,900; macadam pavement on Market street, cost 3,740; on Jarvis avenue, cost \$5,925; on Balmoral street, \$4,360; cedar block pavement on Logan avenue, cost \$5,966; asphalt pavement on Balmoral street, from Notre Dame avenue to Qu'Appelle avenue, cost \$19,000.—James McDiarmid and Mr. Sandison are understood to have purchased property on the west side

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TORONTO MONTREAL ST. JOHN HALIFAX

of Main street, just north of Logan street, on which to build a block of store.—MacKenzie & Mann have bought four blocks of land in St. Boniface on which to lay out yards for the Canadian Northern Railway. A freight shed and warehouses will likely be built also.

**MONTREAL, QUE.**—Plans of the new building for the Pointe Ste. Charles Railway Y. M. C. A. have been approved of and work will be commenced immediately. Building will contain 60 single bedrooms, gymnasium, baths, bowling alley, reading rooms, etc.—William an Walter Stewart, brick stable on Hannah street for P. W. Watkins, cost \$1,000.—William R. Mead, of the architectural firm of McKim, Mead & White, New York, has consented to act as expert to judge the plans submitted by local architects for the new Board of Trade building. The building will be six storeys in height, and is to be placed as far as possible upon the old foundations. Stone brick and stone trimmings will comprise the materials used. It is the intention to employ fire-proof construction throughout. There will be four passenger elevators and one goods elevator.—David Seath, secretary Harbor Commissioner, invites tenders up to noon of the 20th inst., for supply of 940,000 scoria paving blocks.—The Jesuit Fathers contemplate the erection of a country house at Lake Nominigue.

**TORONTO, ONT.**—The city has given notice of its intention to construct an asphalt pavement on Elm avenue, from Sherbourne street to Glen road, at a cost of \$8,600.—The ratepayers of Wards 4 and 5 will petition the city council to provide funds to complete the Bathurst street school. It is estimated that \$26,000 will be required for this purpose.—Plans of proposed extension to pier a Bayfield, Ont., may be seen at the office of H. A. Gray, Confederation Life Building, this city.—A. B. Davison, representing a syndicate, has applied to the council for a ten years' lease of city property at Centre Island for a pleasure resort and athletic grounds, and offers to expend about \$200,000 in wharves, ferries, and other improvements.—The American Steel & Wire Co. are looking for a site for a Canadian branch of their works and may locate in this city.—It is expected that plans for the mineralogy and geology buildings of the University of Toronto will be decided on in a few days, and that work on the foundation will be commenced this fall.—A citizen whose name is not been disclosed, has made an offer to the city council to spend \$20,000 on a summer home for the poor at Centre Island if given a free site.—Plans have been prepared and tenders will shortly be invited by Mr. Holmes, architect, for remodelling Mrs. Hayes' hotel on Bathurst street. The cost of the work will be about \$1,500.—Building permits have been granted as follows: G. W. Beardmore, improvements to residence, 136 Beverly street, cost \$2,500; T. Eaton Co., completion of fifth

storey to store, cost \$2,000; C. K. Rogers, new front to hotel, 60 York street, cost \$1,800; Dr. Charles Sheard, alterations to residence on Jarvis street, cost \$10,000; Walter Nash, residence, 247 Lansdowne avenue, cost \$1,000; A. E. Henderson, two dwellings, Bathurst street, near Ulster, cost \$5,600; W. R. Griner, residence, 21 Beaconsfield avenue, cost \$2,500; Charles Boeckh, St. George street, near Harbour street, cost \$1,500; George C. Watson, one storey gospel hall, Broadview avenue, cost \$2,000; J. M. Purvis, two storey warehouse, west side of Don, between King street and Eastern avenue, cost \$5,000.—Henry Simpson, architect, wants tenders by noon of 19th inst. from all trades except carpenter work for erection of a residence on Queen street avenue for Charles Burns.—Macpherson estate, brick dwelling on Crescent road, near Yonge street, cost \$2,000; Clemes Bros., alterations to warehouse, corner King and Church streets, cost \$2,300.

**FIRES.**

Residences of Elzear Dion, Napoleon Baker and Mrs. Perrault at Lake Megantic, Que., totally destroyed.—Flax mill at Theford, Ont.—Times printing office and the Strachan block at Tilbury, Ont. Residence at Brighton, Ont., owned by W. W. Porte, totally destroyed.

**CONTRACTS AWARDED.**

**KINGSTON, ONT.**—The contract for proposed opera house has been let to Ald. McLeod.  
**MIDLAND, ONT.**—The contract for another section of the waterworks system has been awarded, Clarke & Connolly, of

Toronto, being the successful tenderer for the conduit and Mr. Davenport for the pump house.

**PORT ARTHUR, ONT.**—H. Dawson has let the contract for a brick residence to L. A. Purcell.

**NELSON, B. C.**—The contract for new Salvation Army barracks has been let to Mr. Gillet, at \$5,948.

**SMITH'S FALLS, ONT.**—F. Dole & Sons, of Brockville, have been awarded the contract for granolithic walks here.

**DALHOUSIE, N. B.**—P. B. Tre has secured the contract for rebuilding the Presbyterian church; price, \$5,600.

**PAISLEY, ONT.**—The contract for reseating the Methodist church has been given to the Valley City Seating Co., Dundas.

**MAGOG, QUE.**—The tender of Pepin, for building foundation wall of new fire station, at \$550, has been accepted.

**ST. JOHN, N. B.**—The Maritime Glass Works, this city, have secured the contract for art glass windows for Marks Presbyterian church, Douglas town.

**WIARTON, ONT.**—The contract for building and plant for the Wiarton B Sugar Co. has been given to the Colonial Construction Co. of Montreal; estimated cost \$350,000.

**TORONTO, ONT.**—Wood fiber plaster is being used on the Manufacture and the Foresters' arches now being built. The new addition to the Wall House has been plastered with the same material.

**VICTORIA, B. C.**—Three tenders were received by the Board of school

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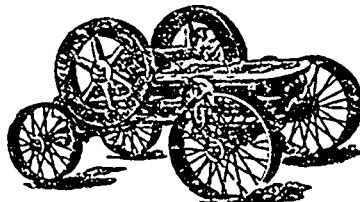
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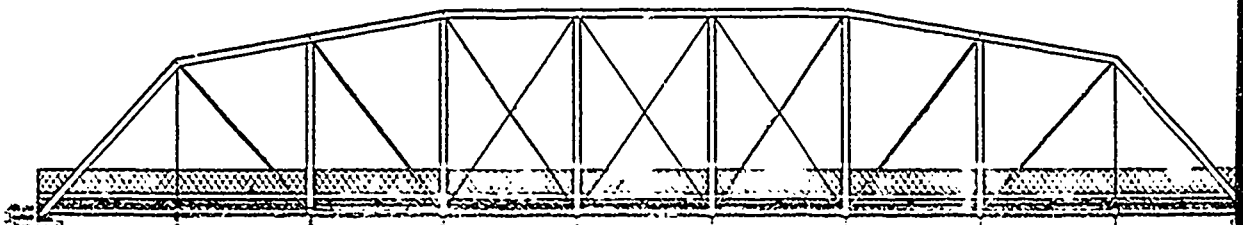
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stees for erection of new high school building, as follows: Thomas Catterall, \$422 (accepted); M. Humber, \$23,000; John Coughlan, \$24,400. The expected tender does not include heating and ventilating apparatus.

SYDNEY, N. S.—T. M. LeBlanc, of Antigonish, has secured a contract from the Canadian Railway for the construction of a reservoir of 10,000,000 gallons capacity and the laying of two miles of 6-inch pipe at Point Tupper.

LANAIME, B. C.—The following tenders were received by the council for the purchase of \$10,500 street improvement fixtures: Canadian Bank of Commerce, \$10,622.50, (accepted); John Lock, \$1,500 at par; John Pawson, 90 at par.

OTTAWA, ONT. — The American Bank Note Co. will erect a two storey addition to their building on Wellington street. Arnoldi & Ewart are the architects, and Holbrook & Sutherland the contractors.—Contracts for the Columbus bridge have been let by G. M. Bayley as follows: Brick and stonework, T. Kenyon; carpenter work, Bryan & Son; and steel, Dominion Bridge Co. Contracting will be four storeys, stone and 4, 45 x 75 ft., cost \$16,000.

MONTREAL, QUE.—The C. P. R. has awarded the contract for roofing gables and iron posts for new train sheds to the Dominion Bridge Co.—Contracts were awarded last week by the works committee as follows: Lumley, J. T. Marchand & Co. and James Irwin & Co.; special castings, P. Rubenstein, \$60 per ton; brass, Rubenstein, 15 cents a pound; bronze, W. R.

Cuthbert & Co., 22 cents; lead pipe, Thomas Robertson & Co. \$81 a ton; cast iron, P. Amesse, \$12 a ton.

**BUSINESS NOTES.**

The Brantford Brick Co., of Brantford, Ont., has been incorporated with a capital of \$25,000 to manufacture brick, etc. Robert Hall and Charles Coulson are interested.

E. E. Miller, tinsmith, Deseronto, Ont., has assigned to H. R. Bedford. A meeting of creditors will be held on the 26th inst.

Goulet & Co., sash factory, Shawinigan Falls, Que., have dissolved.

The dissolution is announced of Dulong & Grignon, plumbers, Montreal.

LaBarre & Hodson, painters and decorators, Grand Forks, E. C., have been succeeded by LaBarre & Hall.

Mrs. Ernest Chapman has registered

proprietors of the business of S. Cannon & Co., contractors, Montreal.

The James Barnes Construction Co., Limited, of Fredericton, N. B., is applying for incorporation to build railways and do a general contracting business. James Barnes of Buctouche, and R. A. Estey, of Fredericton, are directors.

A new R. C. church is being erected in Albion township from plans by Mr. Holmes architect, of Toronto, to cost \$7,000. James Jarratt, of Alliston, is the contractor.

The Pease Furnace Co., have just installed a new furnace in the public school at Richmond Hill.

The premises of W. A. Bradshaw, manufacturer of wood fiber plaster, 109 Front street east, Toronto, were damaged by fire last week to the extent of \$40.

**CONCRETE SIDEWALKS FAVORED.**

The members of the Toronto Board of Control have come out strongly and un-

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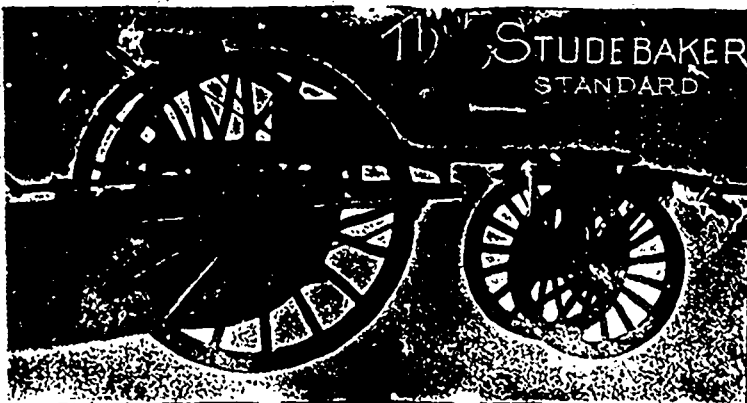
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unanimously in favor of the use of concrete in laying sidewalks as opposed to wood. They declined, recently, to adopt a number of recommendations from the Works Committee for plank sidewalks on certain streets, and referred them back for further consideration, owing to the increased price of wood, and the continued reduction in the cost of concrete. At present sidewalks in the outlying portions are being laid with planks, but the use of concrete is compulsory in the central portions. The use of concrete will likely be extended to all parts of the city within a few months.

Figures submitted by the city engineer prove that concrete is really much cheaper for sidewalks than wood. The cost of a five foot concrete sidewalk is 45 cents a foot, but the cost is extended over ten years, while the 33 cents a foot for wood had to be paid within three years. A concrete pavement would last forty years, perhaps—four or five times as long as a plank sidewalk

**PROPOSED DRAINAGE WORKS.**

A number of petitions have been received by the Ontario Department of Public Works from municipalities which desire to take advantage of the Drainage Act of last session. The petitions before the Government, which are now being examined by the engineer, are as follows:—

Pelee Island where the cost is rendered great by the necessity of establishing dykes and removing the water by pumping.

West Tilbury township, in Essex, 55,500 acres to be reclaimed and benefited; estimated cost \$45,673.

Winchester township, large drainage scheme running through Mountain, Russell, and Winchester townships, Dundas and Russell counties, estimated cost, \$38,335.

Mountain and Osgoode townships, for aid in the Silver Creek and Castor River drainage scheme, townships of South Gower and Winchester being also benefited, and the Castor River drainage outlet for a very large territory in Carleton and Dundas counties, estimated cost, \$24,008.

Matilda township, Dundas county, improvement and dredging of Petite Nation River, outlet for drainage systems in townships of Matilda, Mountain, Winchester, and townships to the west of Dundas county.

Osnabruck and Cornwall townships in Stormont, in Aux Raisins River drainage scheme, expensive because of rock excavation; to cost \$35,000.

Cornwall township, Beaver Creek drainage scheme, to cost \$7,500.

Eastern township, in Bruce, 10,000 acres to be benefited, to cost \$11,000.

Bromley township in Kentrew county waters of Muskrat and Snake Rivers to be lowered, 3,500 acres to be reclaimed and large areas to be benefited by better drainage.

Maryborough township, in Wellington drain affecting lands in townships of Alma Grey, Wallace, Maryborough, and the town of Listowel.

The total expenditure involved in the above will be about \$200,000

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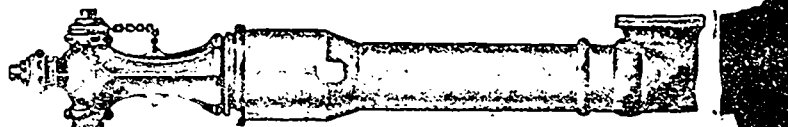
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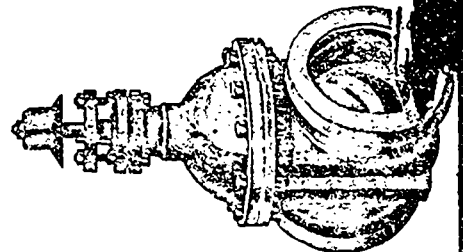


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# MUNICIPAL DEPARTMENT

## THE SEPTIC TANK SYSTEM OF SEWAGE DISPOSAL.

A contemporary gives the following description of the "Septic Tank" system of sewage disposal which has been successfully established at Exeter, Barrhead (Glasgow), Huddersfield, Taunton and several other places in the Old County, and which entirely reverses former ideas on the subject.

For the ancient aim of sewage theorists was to destroy the bacteria; the aim of his system is to preserve the bacteria in order that they may consume the impurities, and then themselves go off into gases, which can be utilized for lighting or other purposes. The first ray of light which was thrown on the matter was a suggestion by Dr Dupre that the purification of sewage might be effected, in part at any rate, by the agency of micro organisms. The idea was seized upon by many workers, who sought to embody it in practical form. But the experimental septic tank installation laid down at Belleisle, near Exeter, by Mr Cameron, during the winter of 1895-1896, to deal with the sewage of a part of the parish of St Leonard, marks an epoch in the history of this question. The system which it embodies isolated nearly all the recognized causes of sewage treatment. The orthodox mode

of procedure was to throw down the suspended solids by means of chemicals, and to seek to solidify the dissolved impurities, in order to deal with them as solids. Mr. Cameron, on the other hand, liquefied the solids by means of bacteria, in order to deal with them in a liquid form. Decomposition, it was formerly said, must be prevented at whatever cost. Mr. Cameron set himself to promote decomposition. Most important of all, bacteria in sewage must be exterminated. Mr. Cameron did all in his power to cultivate them, for he recognized what earlier experimenters had failed to see, viz., that with a decomposition of polluting matter there can be no change from foulness to purity. The task which he set himself, therefore, was to promote this natural process, and to place it under perfect control. The successful purification of sewage, as might be expected from the number and complexity of its constituents, demands an infinite number of workers, and involves a multiplicity of processes. For our present purpose, fortunately, it will suffice to consider these under two heads. First, the destruction of the solid matters as such, and, secondly, the purification of the dissolved polluting matters. After many years of patient experimenting, Mr. Cameron arrived at the conclusion that the liquefaction of the solid matter would be best effected by the agency of those bacteria which are classed as "anaerobic—that is to say, which thrive in the absence of air. He accordingly devised for their accommodation the receptacle which is now known as the "septic tank." A septic tank consists of a chamber containing about one day's flow of sewage, more or less, according to the strength of the latter. It is generally covered, and the exclusion of air is completed by the submergence of the inlet and outlet pipes, so as to deliver and draw off respectively below the surface of the sewage. Instead of

filling and emptying the tank alternately, as is done with a precipitation tank, the sewage is allowed to run through it continuously; and it is not emptied from one year's end to another. Although the flow through the tank is continuous, the motion is so slow that its contents are practically at rest, affording ample opportunity for the separation of the sand matter; the heavier substances sink to the bottom, while the lighter bodies float to the surface. Seeing that all these are encouraged to enter the tank, instead of being kept back by screens, as is done where precipitation is resorted to, a thick scum soon forms over the surface of the liquid. The various races of liquefying bacteria are thus afforded the conditions most favorable to their growth and activity, viz., an abundant food supply, darkness, an equable temperature, absence of atmospheric oxygen, and a steady current to wash away the products of decomposition. So well do they do their work that the tank at Belleisle has now been in use for close on four years without requiring to be cleared. The floor of the tank is covered with a fine deposit, largely mineral; but the bulk of this is trifling compared with that of the solid matter which has been brought in with the sewage. The solid matter being thus got rid of, it remains to purify the liquid effluent. This task, like the preliminary liquefaction, is performed by bacteria. These, however, are of quite a different stamp from those which do the rough work in the septic tank. They are accordingly housed in a

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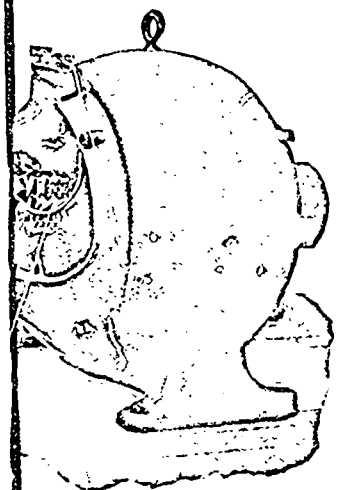
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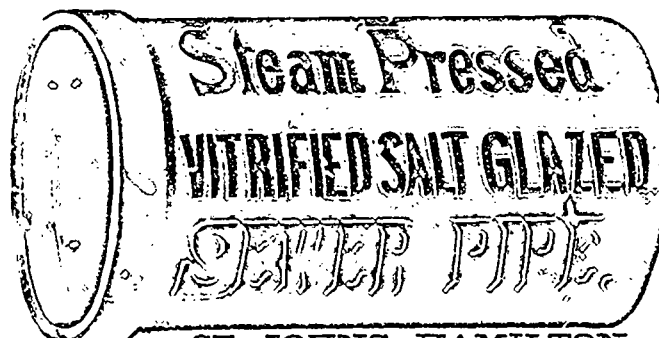
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very different fashion, their workshops being variously known as "bacteria beds," "contact beds," and "filters." The last of these terms, though not wholly appropriate from a scientific point of view, is so convenient and so well known that it is most generally adopted. A plentiful supply of oxygen is essential to the purification of the effluent, and the chief function of a filter is to secure a thorough admixture of this with the atmospheric air. Many devices more or less ingenious have been employed for the purpose; but in point of simplicity and efficiency the following method is the best. It consists in charging a filter with some granular material such as coke, burnt ballast, or broken clinker, filling the interstices of the material with the liquid to be purified, keeping the filter full for a certain period, and finally drawing off its contents. The liquid descending through the filter is brought into close contact with the air which the latter contains, and is purified by the agency of the aerobic bacteria therein. In addition to promoting the admixture of liquid and air, the filtering material serves the further important purpose of affording a resting place for the bacteria, which would otherwise be washed out at every discharge. To secure the utmost efficiency, these organisms must be brought as near their mark as possible; in other words, the interstices should be narrow, so that no portion of the liquid may be far from the filtering medium. The latter should be in small pieces, so as to afford the maximum superficial area; but, on the other hand, it should not be so fine as to prevent the liquid from passing away freely. In order to secure efficient working, and at the same time to maintain the filters in healthy condition, they must be worked in regular rotation. If the valves regulating the admission and discharge of the effluent are opened and closed by hand a man must be constantly present to watch the rate of filling, and open and close the valves at the proper times; and if the work is to be done regularly and efficiently, he must never fall asleep at his post, nor yet make a mistake. Now, the infallible man is not easily found, and in any case the wages of successive relays of men for the night and day shifts would bear very hardly on a small community. It was therefore necessary to devise means whereby the filling and emptying of the filters might be effected without manual intervention. For this purpose automatic alternating gear was introduced, in which the various stages of filling, resting full, discharging, and aerating are brought about in turn by means of an

overflow from the filter last filled. The alternating gear at Belleisle has done its work with unflinching precision for the past three and three-quarter years, during which time it has effected something like ten thousand discharges. The whole installation is thus rendered completely automatic, the attention required being reduced to an occasional visit of inspection, oiling the bearings of the gear at long intervals, and throwing the spare filter into work in place of one of the others every second or third day. The filtered effluent varies somewhat in appearance, according to the period of the discharge and the strength of the sewage; but it never fails to excite the warm admiration of the deputations who come to inspect the works, and who often have to taste the filtrate to satisfy themselves that it is really as good as it looks. As regards the financial aspect, the first cost of an installation on the septic tank system is in general not more than that of works of the kind hitherto in vogue. Bearing in mind that works on this system for a given population are always capable of dealing with a large quantity of storm water in addition to the sewage proper, it is really cheaper than the older systems, even as regards first cost. The true criterion, however, is the annual cost of working, which, for precipitation works of a moderate size, would range from a shilling to eighteen pence

per head or even more. Works of the kind for a population of 47,000, which the works now being laid down at Belleisle will be capable of serving, would the fore cost from £2,500 to £3,500 per annum for working expenses alone. The septic tank installation will probably cost one-twentieth part of the smaller sum

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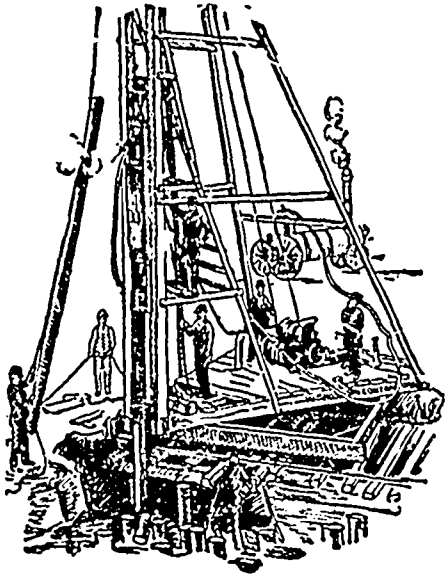
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| Nova Scotia blue grey, per cu. ft.....                                         | 65        |

**F.O.B. Halifax.**

|                                                                       |       |
|-----------------------------------------------------------------------|-------|
| Dimension stock granite for building purposes, per cubic foot.....    | 50 45 |
| Do., for polishing purposes, up to 2 tons weight, per cubic foot..... | 1 00  |
| Paving sets, per thousand block....                                   | 60 00 |

**CREDIT VALLEY STONE.**

| F.O.B Quarries.                                |      |
|------------------------------------------------|------|
| Rubble, per ton.....                           | 50   |
| Brown Curbing, up to 10 in. per sup. yard..... | 2 00 |
| Brown Dimension, per cu. ft.....               | 65   |
| Grey Coursing, per sup. yard.....              | 1 25 |
| Grey Dimension, per cu. ft.....                | 45   |

**SLATE.**

| Toronto, Montreal                   |                |
|-------------------------------------|----------------|
| Red Slate (per square).....         | 17 50 20 00    |
| " red.....                          |                |
| Toronto, Montreal                   |                |
| " purple.....                       | 8 50 10 00     |
| " ding green.....                   | 8 50 7 00 3 00 |
| " black.....                        | 7 50 6 50      |
| Terra Cotta Tile, per sq.....       | 20 00 25 00    |
| Ornamental Black Slate Roofing..... | 4 80 6 00      |

**CEMENT, LIME, etc.**

|                                    |             |             |  |
|------------------------------------|-------------|-------------|--|
| Portland Cements -                 |             |             |  |
| " Joston " Brand Portland.....     | 3 05 3 25   | 2 70 2 80   |  |
| North's "Condor.....               | 2 95 3 1    | 2 50 2 60   |  |
| Alsen's, (German).....             | 3 70 3 75   | 3 20 3 25   |  |
| " Karlstadt " (German).....        | 2 8, 3 05   | 2 55 2 70   |  |
| English, artificial, per bbl.....  | 2 85 3 0    | 2 44 2 40   |  |
| Belgian natural, per bbl.....      |             | 2 00 2 10   |  |
| Kathbun's Star, per bbl.....       | 2 5 2 5     |             |  |
| Beaver.....                        | 2 10 2 50   |             |  |
| Ensign.....                        | 1 90 2 20   |             |  |
| Ontario.....                       | 1 50        |             |  |
| Roman.....                         |             | 2 70 2      |  |
| Parian.....                        | 5 25 5 25   | 5 75 5 75   |  |
| Keene's Superfine "Whites".....    | 2 00 2 00   | 0 0 10 20   |  |
| Keene's Coarse "Whites".....       | 8 00 8 50   | 8 50 6 00   |  |
| Raevel's Belgian, 395 lb. bbl..... |             | 2 35 2 45   |  |
| Lerie Bros.....                    |             | 2 45 2 55   |  |
| Fire Bricks, Newcastle, per M..... | 50 00 35 00 | 16 00 21 00 |  |
| " Scotch.....                      | 30 00 35 00 | 19 00 21 00 |  |
| Lime, 00 lbs., Grey.....           |             | 30          |  |
| " " White.....                     |             | 35          |  |
| Plaster, Calcined, N. S.....       |             | 7 00 1 50   |  |
| " " N. S.....                      |             | 2 00 1 00   |  |
| Hair, Plasterers', per bag....     | 80 1 00     | 0 0         |  |

**ARCHITECTURAL VARNISHES.**

THE IMPERIAL VARNISH AND COLOR CO, LIMITED.  
(Highest grade)

|                            | In 5 gal. cans. | In 1 gal. cans. | In 1/2 gal. cans. | In 1/4 gal. cans. | Per 100 lbs. |
|----------------------------|-----------------|-----------------|-------------------|-------------------|--------------|
| Exterior wearing body..... | \$ 5 50         | \$ 5 50         | \$ 5 50           | \$ 5 50           | \$ 5 50      |
| Exterior rubbing.....      | 3 50            | 3 25            | 3 85              | 4 20              | 4 50         |
| Interior.....              | 1 50            | 1 25            | 1 85              | 2 20              | 2 50         |
| Ivory Frame line.....      | 5 00            | 3 25            | 3 25              | 5 71              | 6 20         |
| Crysaline.....             | 4 50            | 4 71            | 4 85              | 5 11              | 5 11         |
| Yachaine.....              | 3 00            | 3 25            | 3 25              | 4 20              | 4 20         |
| Architectural Coach.....   | 4 50            | 3 25            | 3 85              | 3 20              | 3 60         |
| Granite floor finish.....  | 2 50            | 2 25            | 2 85              | 3 20              | 3 60         |
| Architectural flating..... | 2 00            | 2 25            | 2 85              | 3 20              | 3 60         |

(Cant. free.)