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# 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. 9.

OCTOBER 26, 1898

No. 39.

## THE CANADIAN CONTRACT RECORD, PUBLISHED EVERY WEDNESDAY

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Advertising Rates on application.

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## TENDERS

Tenders will be received by the undersigned up to 5 p.m. on MONDAY, THE 31ST INST., for the whole of the several trades required in the erection of a PAIR OF SEMI-DETACHED RESIDENCES on the north side of College Street, for Dr. G. Sterling Ryerson.

No tender necessarily accepted.

F. H. HERBERT, Architect,  
9 Toronto Street, Toronto.

## TO ENGINEERS

Applications for the position of Superintending Engineer of extensive main drainage works, to be immediately constructed in the City of Ottawa, will be received up to noon of

THURSDAY, THE 27TH INSTANT.

Applications to state experience and salary, and to be addressed to Alderman Cluff, Chairman of Main Drainage Committee, Ottawa.

JOHN HENDERSON, City Clerk.  
Ottawa, 13th October, 1898.

## TO ENGINEERS

Applications for the position of CITY ENGINEER for the City of Ottawa, Ont., will be received up to

WEDNESDAY, 2ND NOVEMBER CURRENT.

Applications to state experience and salary expected, and to be addressed to Alderman James Davidson, Chairman of Board of Works, Ottawa.

JOHN HENDERSON, City Clerk.  
Ottawa, 13th October, 1898.

## Tenders Wanted

Scaled tenders, addressed to Thos. Anderson, Esq., Comber, Ont., will be received up till 12 o'clock, noon, on FRIDAY, THE 4TH DAY OF NOVEMBER, 1898,

for the furnishing, erecting, etc., of TWO STEEL HIGHWAY BRIDGES over Big Creek, in the Township of Tilbury West.

General plans and specifications may be seen at the office of Thos. Anderson, Esq., Comber, Ont., or at the office of the undersigned, Windsor, Ont.

The lowest or any tender not necessarily accepted. Dated at Windsor this 22nd day of October, 1898.

WM. NEWMAN,  
Engineer Big Creek Drainage Works.

## Tenders for Sewer

Tenders will be received by the undersigned, by registered post only, up to MONDAY, NOVEMBER 7TH NEXT, at 3 p.m., for the

### Construction of a Sewer

in the Town of Walkerton as follows: 2,000 feet of 9-inch tile, 1,000 feet of 8-inch tile, and about 1,500 feet of 6-inch tile, according to plans and specifications which may be seen at the Town Clerk's office, Walkerton, after Saturday, October 29th.

A deposit in the form of a marked cheque for 2½ per cent. of the amount of contract price must accompany each tender, also names of parties offered as security for the due completion of the work.

R. H. MCKAY,  
Chairman Board of Works.

Walkerton, Ont., Oct. 25th, 1898.

### CONTRACTS OPEN.

MAIDSTONE, ONT.—Jerry Collins pur poses erecting a residence.

GALT, ONT.—It is expected that the new G.T.R. station will be commenced at an early date.

KEENE, ONT.—The Methodist congregation are building a new parsonage, to cost \$2,000.

INGERSOLL, ONT.—Residents on Union street have decided to construct a silica barytic sidewalk.

HOPEWELL HILL, N.B.—It is the intention of the Albert Carriage Co. to build a new factory.

BERLIN, ONT.—The Sewers Committee will advertise for tenders for building a sewer on Cedar street.

SHERBROOKE, QUE.—A special committee has recommended the erection of a new city hall and market building.

LACHINE, QUE.—The citizens, at a recent meeting, decided to request the Council to construct a drainage system.

ACTON, ONT.—The by-law to provide \$6,000 for the installation of an electric light plant is being advertised in the local press.

ST. HENRI, QUE.—The Page-Hersey Iron & Tube Co. has been incorporated, capital stock \$50,000, to manufacture tubes, etc.

ST. GABRIEL DE BRANDON, QUE.—La Rogue & Renaud have been granted a bonus of \$5,000 to assist them in rebuilding their mill.

CARMAN, MAN.—Merry & Williams, of this place, have purchased property at

Roland on which they will erect an im- plement warehouse.

MITCHELL, ONT.—The by-law to raise \$5,000 by debentures for improving the electric light plant was defeated by the ratepayers last week.

AMHERSTBURG, ONT.—On September 21st a by-law was passed by the town providing for the issue of debentures to the amount of \$5,350.

BRANTFORD, ONT.—A by-law to provide \$13,500 for school purposes, and \$20,000 for extension of waterworks, has been passed in council.

STRATFORD, ONT.—The Stratford Mill Building Co. purpose extending their works, and have asked the city for exemption from taxation.

GRANBY, QUE.—Tenders have been taken for the construction of an armoury in this village. Particulars from G. A. Tompkins, secretary-treasurer.

PETERBORO', ONT.—The ratepayers have sanctioned the by law to loan \$30,000 to the Wm. Hamilton Mfg. Co. to assist them in extending their works.

THREE RIVERS, QUE.—It is reported that Warren Curtis has purchased property at Cap de la Magdeleine on which to erect industrial establishments.

WALNUT, ONT.—The ratepayers will vote on a by-law to borrow the sum of \$1,195 for repairs to drain in the township of Brooke. W. G. Willoughby, Clerk.

ST. THOMAS, ONT.—James A. Bell, C.E., has been instructed to make a re- port to the city council on the cost of in- stallng a municipal electric light plant.

SMITH'S FALLS, ONT.—On November 21st a vote of the ratepayers will be taken on a by-law to grant a bonus of \$12,000 to assist W. H. Frost in extending his works.

PERTH, ONT.—Tenders close Tues- day, November 1st, for the purchase of \$5,000 of public school debentures. Address H. M. Shaw, chairman Finance Committee.

LINDSAY, ONT.—The by-law granting a bonus of \$20,000 to Richard Sylvester, implement manufacturer, was carried by the ratepayers on Monday last.

EDMONTON, N. W. T.—Preliminary surveys of the extension of the Edmonton, district railway to join the C & E rail- way have been commenced, with A. G. Harrison, C.E., in charge.

ST. JOHN, N. B.—W. H. Fowler pro- poses to erect a large flour mill, four storeys, frame, 100x40 feet, with engine house and work houses in rear. Tenders for erection have been asked.

CAMPBELLTON, N. B. Some Ontario and English capitalists are said to have an option on a site across the river, on the Quebec side, where they contemplate erecting large saw and pulp mills.

LONDON, ONT.—The attention of the City Council has been called to the fact that the G. T. R. Company are likely

to renew the bridge over the Wortley road, in order to widen the structure for double-tracking.

**ORILLIA, ONT.**—At a special meeting of the town council, Mr. Roderick J. Parke, E.E., of Toronto, was appointed to prepare specifications for the proposed Ragged Rapids water power scheme.

**HENSALL, ONT.**—The trustees of School Section No. 1, Tuckersmith, are considering the question of erecting a new school house.—Samuel Meno has the foundation laid for a brick building.

**COATICOOK, QUE.**—Tenders are now invited for the erection of a new market building, 36 x 48 feet, and to cost \$4,000. The plans were prepared by G. L. Moulton. Address Otis Shurtleef, secretary-treasurer.

**MIDWAY, B. C.**—W. T. Thompson, of this place, and others, will apply to the provincial parliament for a charter for a railway from Midway to Beaver Creek. Power will also be asked to construct branch railway lines.

**HINTONBURG, ONT.**—William Moore has commenced the erection of a residence.—A new scheme is on foot for the construction of a system of water works, Mr. Rainboth, it is claimed, not having carried out his agreement.

**DIGBY, N. S.**—The Mayor has received a communication from the Manhattan Steamship Co., of New York, asking that the town grant exemption from taxation for five years on hotel premises proposed to be erected in this town.

**QUEBEC, QUE.**—Preparations are being made to build an addition to the National Bank, corner Racine street and Labrecque avenue.—L. E. Censure is preparing plans for a large car shed, for which tenders will shortly be invited.

**HALIFAX, N. S.**—An influential deputation from this city has requested the Minister of Railways and Canals to construct a floating elevator here, at a cost of \$150,000. The granting of a subsidy to the Midland railway, for a direct line from Windsor to Truro, has also been urged.

**ST. CATHARINES, ONT.**—The council has given notice of its intention to construct concrete sidewalks on Ottawa street and Nelson street.—Dawson & Symmes intend applying to the city council for an extension of time in which to commence the construction of their railway to Port Dalhousie.

**CHATHAM, ONT.**—The trustees of School Section No. 13 have been authorized to borrow \$1,500 for the erection of a new school.—Powell & Carswell, architects, want tenders by the 29th inst. for the erection of a brick addition to general hospital, including hot water heating, slate roofing, sun baths, etc.

**PARRSBORO, N. S.**—The report of Mr. T. R. Allison, pulp mill expert, on the adaptability of this town as a site for a pulp mill, has been received, and is decidedly favorable to the scheme. It is believed that at an early date the necessary capital will have been secured to proceed with the undertaking.

**WOODSTOCK, ONT.**—A government architect is expected here shortly to arrange for the preparation of plans for the proposed new post office. It is probable that a bank building will be erected opposite the post office, on the corner of Reeve and Dundas streets. A local real estate firm is negotiating the deal.

**VANCOUVER, B. C.**—Plans are said to have been prepared for a large addition of 150 rooms to the Vancouver Hotel.—Plans have been prepared for a brick block on Cordova street, to be known as the Bijou theatre.—Two by-laws will shortly be submitted to a vote of the ratepayers, one to raise \$12,000 for construction of a wharf, and the other to raise \$150,000 for acquiring a park.

**BELLEVILLE, ONT.**—Mr. Frank A. Mitchell, of Norwich, Conn., has entered into an agreement with Abbott & Co., of Montreal, for the amalgamation of the works of the two concerns. It is expected that the new works will be erected in this city, and will include a merchant bar iron mill, sheet mill, nail factory and spike and horse shoe factory. The by-law has not yet received its first reading in council.

**PORT ARTHUR, ONT.**—There is a rumor that application will be made at the next session of parliament for a charter for the Thunder Bay, Nipigon & Albany Railway Company, to construct a railway in northwestern Ontario.—The ratepayers will vote on a by-law on November 8th to authorize the council to enter into an agreement with Edward Spencer Jenison for the supply of water and electric light and power.

**KINGSTON, ONT.**—It is announced that the English Cement Company at Marlbank are purchasing marl beds in that vicinity, and purpose operating the works next spring.—W. Derry, chief engineer, and J. Adams, architect, of the Kingston Penitentiary, are visiting penitentiaries in the United States, with the object of deciding upon the most improved sanitary system of heating and ventilating prisons, with a view to improving the institution in this city.

**HULL, QUE.**—The corporation has engaged Edward Mousseau, chief engineer of the E. B. Eddy Co., to make an estimate of the capacity of their water power near Walter's axe factory. It is at this point that the electric light plant is proposed to be installed.—The question of extending the Hull & Aylmer electric railway to Gatineau Point is under consideration by the directors of the company. It is the intention to commence the construction next spring.

**NEW WESTMINSTER, B. C.**—The C.P.R. will build a brick and stone station here.—A. Bell, trustee of the Ellard Estate, states that building operations on the Ellard Estate property will commence at once, and that a two-story building, of brick, will be erected.—The provincial government has decided to commence forthwith the work of rebuilding the court house.—The Bank of British Columbia has decided to rebuild on the old site. Work will be commenced at once.

**VICTORIA, B. C.**—Several Chinese merchants intend erecting a building on Fisguard street, to cost \$10,000.—A syndicate of Chinese merchants have purchased property on the north-east corner of Government and Cormorant streets, and intend erecting thereon a brick building next spring.—Gerhard Tiarks, architect, has lately prepared plans for several residences.—Mr. F. M. Rattenbury, architect, is about to build a residence.—The question of borrowing \$20,000 for improved fire protection will be submitted to a vote of the ratepayers.

**ROSSLAND, B. C.**—The Inland Telephone Co. will extend its system to this place within the next six weeks.—The management of the Iron Colt Co. is making arrangements to resume work on the mining property at once. The plan of development will include the sinking of a winze on the main showing in the tunnel at the 300 foot level.—The management of the Velvet Mine are considering the installation of machinery, including a 60 horse power boiler and five-drill air compressor.—The Rossland Air Supply Co., capital \$200,000, has been organized, to develop water powers under what is known as the Taylor hydraulic system of air compression. The company will first develop its power on Beaver Creek, where two compressing plants will be installed, at a cost of \$150,000. A. J. McMillan, of this place, is interested.

**HAMILTON, ONT.**—The city clerk has

taken tenders on the construction of pipe sewers on West avenue, Hunter street and Hughson street.—Permits have been granted as below. R. Clohecy, brick dwelling on Wellington street south, for B. Cauley, cost \$2,500; W. A. Edwards, brick addition to the Hart Emery Wheel Co.'s building, cost \$2,300; Thos. Allan, 2 storey brick dwellings, corner Herkimer and Queen streets, cost \$2,800.—Mr. Percy Domville has presented to the City Council his report on the installation of an electric light plant for municipal purposes. He gives the cost of installing 500 arc lights as follows: Steam plant, \$18,850; electric plant, \$40,700; building, etc., \$37,580. His estimate for installing a lighting and power plant for commercial purposes only is: Steam plant, \$14,000; electric plant, incandescent, \$17,691; arc, \$5,625; power, \$3,200.

**WINNIPEG, MAN.**—A new residence is being erected on Roslyn street, Fort Rouge, by Mr. Hall, of Burrows & Hall, lumbermen.—A Dominion government engineer last week conferred with Mr. Robert Watson, Minister of Public Works in the local legislature, regarding the proposed work of widening the outlet of Lake Manitoba.—Work on the Swan river railway extension has ceased for the season. The line will be located another 200 miles this fall, and construction pushed ahead early next spring.—The School Board will call for tenders for plumbing the Gladstone street school.—At a recent meeting of the Fire, Water and Light Committee, the question of installing a municipal electric light plant for lighting the streets and municipal buildings was considered, but no action was taken.—Tenders are wanted by R. Pellat, Rosser, up to October 30th, for the construction of a pile bridge over Sturgeon creek, in municipality of Rosser. Plans at office of R. C. McPhillips, C.E., Confederation Block, this city.—Mayor Andrews, who recently went to England to negotiate for the sale of the waterworks bonds, is reported to have been unsuccessful. It is not expected, however, that the construction of a new system will be delayed, but that active operations will be undertaken this fall. The agreement with the present company for a water supply expires in two years.

**MONTREAL, QUE.**—Plans are in course of preparation in the office of H. Robert Falbord, architect, 99 St. James street, for an hotel at Cartierville, Que., two stories, to be built next spring, and for a private residence on Mountain street, of four stories, to be commenced next spring.—The Imperial Defence Board have been examining the mountain and both banks of the river, and it is understood they will recommend the construction of extreme range batteries in Mount Royal, and the erection of works at St. Lambert and Caughnawaga as an interior defence.—The annual report of the Fraser Institute points out the necessity of increased accommodation being provided.—In a recent speech, Hon. Mr. Blair, Minister of Railways and Canals, stated that next summer the government would complete the deepening and extension of the St. Lawrence canal system.—The project of building a bridge across the Lachine canal is being revived, and the government will be asked to carry out the work.—It is understood that a scheme is on foot for the erection of a large hotel on Sherbrooke street, between University and Victoria streets.—Alex. Robertson, secretary Harbor Commissioners, desires tenders by November 14th for the building of a steel tug boat. Plans on application to John Kennedy, chief engineer of commissioners.—The superintendent of waterworks has recommended an appropriation of \$3,000 for repairs and improvements, including three new pumps.—Mr. James R. Wilson, of the firm of Thomas Robertson & Co., has purchased the Martin Property, corner

Craig and St. Peter streets.—It is understood that the C.T.R. authorities are considering the erection of a station at Point St. Charles.

OTTAWA, ONT.—At a recent meeting of the vestry of St. Alban's church, it was decided to erect a parsonage on Stewart street for Archdeacon Bogart.—E. F. E. Roy, secretary Department of Public Works, wants tenders by Monday, November 7th, for the extension of wharf at Cap aux Corbeaux, Baie St. Paul, Charlebois county, Que.—A syndicate of local capitalists recently purchased the Nagle property on Wellington street, with the intention, it is said, of erecting a bank building thereon. Certain shareholders of the Ottawa Street Railway are understood to be interested.—Messrs. Conn & Ballantyne have commenced the erection of a brick manufactory in Gloucester township, near Billings Bridge, which will be equipped with improved machinery.—D. Storey is building an extension to his furniture store.—The Department of Public Works desires tenders by Tuesday, November 15th, for extension of breakwater at Hall's Harbor, King's County, N.S. Plans at office of C. E. W. Dodwell, Halifax, postmaster at Hall's Harbor, and at above department.—Building permits of last week included the following: Andrew Pelton, frame dwelling, Elgin street, cost \$4,500; Eclipse Office Furniture Co., brick factory, Albert street, cost \$12,000; James Moore, brick veneered dwelling, Cumberland street, cost \$1,500; Robt. McKell, brick veneered dwelling, Waverly street, cost \$1,000; B. Sullivan, two frame dwellings, Clarence street, cost \$1,000; D. O'Connor, jr., six veneer dwellings, Gilmour street, cost \$5,500; D. O'Connor, jr., brick veneered dwelling, Cumberland street, cost \$1,000; Chas. Holbrook, brick veneered dwelling, Maclaren street, cost \$2,500; Christian Rees, brick veneered dwelling, John street, cost \$1,500; Jos. J. Wilkins, brick dwelling, Lewis street, cost \$2,500.

TORONTO, ONT.—The factory and warehouse of East & Co., umbrella and trunk manufacturers, 300 Yonge street, is to be enlarged.—A new building will be erected at 19 and 21 Bloor street east, the site for which is now being prepared.—The Central Canada Loan & Savings Co. contemplate making extensive improvements at the northwest corner of King and Victoria street. At the present time the building at No. 18 King street east is being torn down preparatory to the erection of an almost entirely new building on the site. It is also probable that at an early date the owners will build a new structure taking in a frontage of over 100 feet on King street.—The Toronto Street Railway Company will be requested by the city council to adopt a more improved fender for street cars.—A rumor states that a syndicate is being formed for the purpose of securing control of the Queen's Hotel, Rossin House, Walker House and Arlington Hotel, with the intention of carrying out expensive improvements and alterations to some of the properties. The Rossin House and Arlington hotel are mentioned as likely to undergo extensive alterations. The syndicate is said to have a capital stock of \$900,000.—The Toronto Street Railway Co. is considering a scheme for a system of radial electric railways extending throughout the province, with Toronto as headquarters. The company have not yet, we learn, reached any decision in the matter.—W. L. Symons, architect, has submitted to the city council plans showing how St. Lawrence hall might be utilized for the purposes of a technical school, at a cost of \$22,000.—The city engineer, at the last council meeting, recommended the construction of the following pavements: Brick pavement, on gravel, on Crawford street, between Arthur street and the north end, cost \$8,

653, brick pavement, on broken stone, on Division street, from Spadina to Huron, cost \$2,307; macadam roadway on Wilton avenue, from Yonge to Jarvis, cost \$4,977; macadam roadway on Sword street, from Spruce to Gerrard, cost \$1,052; macadam roadway on First avenue, from Broadway to Logan, cost \$9,186; gravel roadway on Collahie street, cost \$624; gravel roadway on Dovercourt road, from Dundas to Churchill avenue, cost \$1,339.—The city engineer has forwarded to the city council his report upon sewage disposal, in which he describes two systems. The estimated cost of a system of intermittent filtration is given as \$1,730,000, and includes the following: Intercepting sewer, \$820,000; pumping engines, boilers and machinery, \$275,000; force main, \$115,000; sewer outlet to lake, \$80,000; pumping station, \$65,000. The cost of the disposal works is given as \$1,540,000, and includes \$20,000 for intercepting sewers, \$250,000 for tanks, buildings and sludge press, \$190,000 for pumping station, machinery and boilers, and \$75,000 for outlet to lake.—The city engineer has reported to the Property Committee that it will cost \$39,000 to provide the necessary crib work around the block on the water front between York and Lorne streets which it is proposed to convert into a steamship dock.

—At a meeting of east end ratepayers, the project to construct a high level bridge at the Don was endorsed, and it was decided to have a by-law submitted to the electors at the next municipal election.—The Board of Control opened tenders last week for elevators for the new city buildings. The prices asked were: No. 1, \$8,550; No. 2, \$8,300 less \$500 for facia extras; No. 3, \$12,320. The architect will report on the tenders.—The city council has given notice of its intention to construct the following pavements: Cedar block pavement on gravel foundation, on Maple Grove avenue, cost \$810; brick pavement on Orde street, University ave. to a point 120 feet east of McCaul street, cost \$2,060; brick pavement on Cameron street, from Queen street to Cameron place, cost \$3,220; reconstruction of macadam roadway on Isabella street, cost \$2,370; reconstruction of macadam roadway, Front street, from George to Sherbourne street, cost \$1,410; reconstruction of macadam roadway on Front street, from Sherbourne to Trinity street, cost \$5,600; reconstruction of macadam roadway on Grenville street, from Yonge street to Surrey place, cost \$2,810.—The city invites tenders up to Wednesday, November 9th, for supplying keyless doors for fire alarm boxes.—Building permits have been granted as below: James B. Gouinlock, two brick residences, west side Jameson avenue, near Leopold, cost \$7,500; Toronto Fence and Ornamental Iron Works, two-storey brick factory, 99 and 101 Queen street east, cost \$3,500; F. G. Clark, brick residence on Glen road, near South Drive, cost \$5,500; M. A. Blackwell, two-storey and attic brick residence, 164 Jameson avenue, cost \$2,300; Patrick

Maier, two storey brick driving shed, 19 Bloor street east, \$4,000. Tenders will be asked by the city for the supply of 100 tons of unbroken stone for the House of Industry.—The Board of Control have requested the city engineer to report on the cost of an asphalt plant for street paving.—It is probable that the city will rebuild the Humber bridge at an early date.—The Copp Clark Co. propose to extend their premises on Colborne street.—The Hamilton Brass Co. have decided to remove their factory from Hamilton to this city, where they will erect new buildings, including flint works.—It has been decided by the Board of Control to engage an architect to report as to the adaptability of the plans prepared for improvements to the St. Lawrence market.—In this issue Mr. F. H. Herbert, architect, invites tenders for the erection of a pair of semi-detached residences for Dr. G. S. Ryerson, to be erected on the north side of College street.

#### FIRES.

Recent fires included the following: Apple evaporating factory of W. H. Tighe at Chatham, Ont., totally destroyed; loss \$10,000.—Church at St. Etienne des Grés, St. Maurice county, Que., stone structure, erected a few years ago by Heroux Bros., loss \$20,000, insurance \$7,600.—Round house of Canada Eastern Railway at Fredericton, N.B.; loss \$6,000.—C. P. R. round house at Teeswater, Ont., completely destroyed.—Residence of Isaac Green near Waterford, Ont.—Two storehouses at Merrickville, Ont., belonging to E. H. Tallman and S. Jakes; no insurance.—J. A. Desrivieres & Company's planing mill at Ottawa, Ont., damaged to the extent of \$3,000.

#### CONTRACTS AWARDED.

GUELPH, ONT.—Addition for J. B. Armstrong Mfg. Co.: Bruce & Son, contractors.

WINDSOR, ONT.—Contracts have just been let for the rebuilding of the Ouellette premises, which will cost about \$7,000.

BERLIN, ONT.—Isolation hospital: Casper Braun, masonry, \$1,165; Owens & Jacobi, of Waterloo, carpenter work, \$950.

OTTAWA, ONT.—The contract for improving navigation at Roberval, Lake St. John, Que., has been let by the Dominion government to Beatty & Sons, at \$6,000.

GODERICH, ONT.—The town accepted the tender of A. D. Cosner for granolithic sidewalks, at the price of 9 $\frac{3}{4}$  cents per square foot.

PEMBROKE, ONT.—It has been decided to accept the tender of Joseph Kennedy for crib work for retaining wall on Mary and Miller streets.

CHICOUTIMI, QUE.—The Bank National have let contracts for improvements to building. Arthur Picard, of Quebec, has contract for heating.

LONDONDERRY, N. S.—During the month of September the Londonderry

(Continued on page 4.)

## THE HAMILTON BRIDGE WORKS CO., LIMITED.

HAMILTON - CANADA

# Railway and Highway Bridges

AND ALL KINDS OF

**STEEL STRUCTURAL BUILDING WORK, Observation and Water Towers, Tanks, Caissons, Piers, Buoys, Roofs, Inclines, Etc.**

**STEEL SHIPS.**

**HEAVY FORGINGS a Specialty.**

**A Large Stock of STEEL BEAMS, CHANNELS, ANGLES and PLATES always on hand.....ESTIMATES FURNISHED ON APPLICATION.**

Iron Company shipped 882 tons of water pipe and six tons of specials.

**GALT, ONT.**—John Scott has let the contract for remodelling the opera house block. The Canadian Office & School Furniture Co., of Preston, will supply the seats.

**PICTON, ONT.**—The contract for seating First Methodist church has been let to the Globe Furniture Co., of Walkerville, price \$2,600; interior finish will be in white oak. Power & Son, Kingston, architects.

**TORONTO, ONT.**—The Board of Control have accepted the tender of the Toronto Fence & Ornamental Iron Works Co. for elevator enclosures for the new city hall, at the price of \$8,450. A Cleveland company tendered \$100 above this figure.

**HAMILTON, ONT.**—The contract for the extension of the radial railway to Port Nelson has been let to W. I. Degear, of Grimsby.—The contract for sewers on Hughson street, Hunter street and West avenue has been given to J. J. Armstrong, at 28, 38 and 39½ cents respectively

**MONTREAL, QUE.**—H. R. Falbord, architect, has accepted the following tenders for the erection of a residence on Esplanade avenue, corner Rachael street, for James Stewart: Excavating and masonry, Martineau & Prenoveau; brick-laying, Ovilva Chamberland; carpenter and joiner's work, Damien Lalonde; roofing, David Ouimet; plastering, Stephen Gosselin; painting and glazing, Napoleon Desjardins; plumbing, heating and tin-smithing, David Ouimet; iron work, Dominion Bridge Co.; cost \$6,500. The same architect has let contracts as follows for five private residences to be built at corner Western avenue and Prince Albert street, Westmount, for Charles Depocas: Excavating, drainage and masonry, Godfroi Guilbault; carpenter and joiner's work, Damien Lalonde; plastering, Stephen Gosselin; iron work, Dominion Bridge Co.; other trades not let; cost \$20,000.

#### PUMPS FOR CONTRACTORS' USE.\*

As much loss is often occasioned through the employment of pumps of a type and construction unsuited to the duty they have to perform, a few notes on the selection and management of those particularly adapted to contractors' purposes may be of service. In view of the rough usage which a pump usually meets with in contracting work, the first points to be desired in its construction are strength and simplicity, with freedom from liability to

\* J. L. Crathorne, in the Contract Journal.

breakdowns. For this reason, the more complicated pumps, such as the direct-acting, duplex, and compound steam-pumps, are to be avoided, except where the pump is to be fixed permanently and where great economy of fuel is desirable.

**CENTRIFUGAL PUMPS.**—First in the list of contractors' pumps must be placed the centrifugal. Where considerable quantities of water have to be expeditiously lifted to a moderate height, this pump is unrivalled, and will work with water containing an amount of gritty and solid matter which would quickly choke up those pumps which depend on valves in their action. Sand, gravel, leaves, and even small pieces of wood will pass through a centrifugal pump without affecting its working. The action of this pump is briefly as follows: A number of curved blades forming a circular fan are attached to a spindle, which is rapidly revolved in a cast-iron case. The revolution of the blades produces a continuous partial vacuum, which is filled up by the water coming through the suction pipe; as the blades sweep round, the water is forced through an opening into the delivery pipe. The action of the blades being continuous, a constant stream of water is expelled. Belting is usually employed to transmit power from the motor to the pump, though a high-speed engine is sometimes coupled direct to the spindle in the larger sizes. As regards construction, the blades of the pump should be of steel, not cast or malleable iron, which is sometimes used for cheapness, as the fan being, in the latter case, cast in one piece, it is difficult to obtain a perfect balance. Owing to the high speed at which these pumps are run, the accurate balancing of the fan is of great importance; should the blades be ever so little out of balance, centrifugal action is set up and the bearings and spindle are rapidly worn away—this also applies to the driving pulley. The standards which support the bearings are best cast on to the bed plate, instead of bolted to it as in the former case; the bearings cannot get out of line when once properly fitted. The spindle should be of steel, running in bearings of ample length, provided with adequate means of lubrication.

To facilitate inspection and cleaning, one side of the pump is usually removable; handholes should also be provided. Recent experiments tend to show that the water is best admitted at the tips of the blades, thereby reducing the churning action or eddy friction in the pump. Though the centrifugal pump will work with a suction up to 18ft. or 20ft., a moderate lift is to be preferred—say, 6ft. to 8ft. The quantity of water discharged increases as the lift decreases. In addition to lifting, centrifugal pumps will force the water to a moderate height with economy—say, 12ft. or 15ft., beyond which another type of pump is to be preferred. When it is required to start the pump the suction pipe has to be filled with water, as it will not draw until the water reaches the blades. This "priming" may be accomplished either by pouring water through a plug in the pump case, or a small air-exhauster driven from the spindle may be employed.

(To be Continued.)

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BUSINESS NOTES.

James Brown, contractor, Ottawa, is dead.

Denman & Ogilvie, plumbers, Montreal, have dissolved partnership.

M. A. Smart has established a sash and door factory at South Finch, Ont.

Joseph Johnston, Monkton, Ont., has sold his brick and tile business to William Barnhardt.

Jas. Nichol, contractor, Brockville, Ont., is announced to have assigned to C. C. Fulford.

John Ross, James Barry and John A. McRae have registered a partnership as contractors, under the name of Ross, Barry & McRae, with headquarters at Niagara Falls, Ont.

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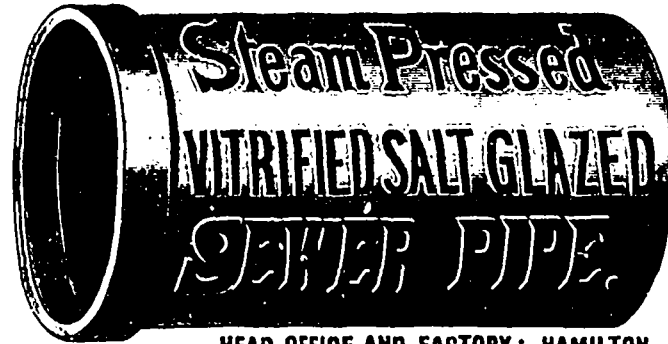
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## MUNICIPAL DEPARTMENT

### THE INFLUENCE OF PAVEMENTS ON PUBLIC HEALTH.\*

By A. W. CAMPBELL, Ontario Road Instructor.

In presenting to this Association a paper on the sanitary aspect of pavements, I have been actuated by a desire to obtain information, rather than to impart it. Ontario has so recently developed from a wilderness into the home of civilization and culture; our villages have grown so quickly into towns, out of towns into cities, and the advance of the various sciences has been so rapid, that our people scarcely realize the changed circumstances, and the need of carefully directing their energies in meeting the demands of the times. In my visits to different parts of the province, I am constantly met with evidences of the good wrought by this association. I find that in very small villages even, inefficient drainage, cess-pools, piggeries, slaughter-houses, and impure water supplies are not now tolerated as they were once, and that this is due to the work of your association.

It is with considerable hope, therefore, that I have undertaken to briefly lay before you the subject of pavements and public health, confident that you will lend your assistance in aiding our knowledge of this as of other matters pertaining to perfect sanitation, and that where reform is needed, your aid will be afforded.

There is no one paving material which possesses every quality desired in a pavement to meet all conditions and uses. The ideal pavement remains to be discovered; but the features which should belong to such an ideal pavement are so numerous and of such varying character as to render the search apparently a hopeless one. The ideal pavement

1. Should be cheap, and economical of maintenance;
2. Should be durable;
3. Should suit all classes of traffic;
4. Should offer little resistance to traction;
5. Should give a good foothold to horses;
6. Should be adapted to all grades;
7. Should have a good appearance;
8. Should not be muddy nor pervious to water;
9. Should be sanitary; that is, non-absorbant, not subject to decay, easily cleaned, not dusty, not noisy.

It is apparent, then, that notwithstanding the importance of the sanitary aspect of a pavement, there are other features which must be considered. The primary intention of a pavement is to accommodate travel, and to provide one which will do this satisfactorily, which will be durable, cheap, of good appearance, healthful, and possess in the highest degree the other

qualities enumerated, in view of the location, nature and extent of traffic, is the problem which presents itself to the paving engineer. Just as no absolutely perfect paving for every time and place has been discovered, it is doubtful if any paving material now used should be utterly condemned. Each has its place in which, until the ideal, universal pavement is found, it will be more satisfactory than any other which could be used under that particular set of circumstances of soil, climate, traffic, etc.

The purpose of this paper, however, is to treat of the healthfulness of paving in general, of the sanitary aspect of commonly used paving materials, that is, asphalt, stone blocks, vitrified brick, cedar block, and broken stone (macadam), with respect to absorption, decay, ease of cleaning, dustiness and noise. Of all these, cedar block has received the greatest censure on the score of unhealthfulness. Dr. O. W. Wright, a health officer of Detroit, is quoted as saying: "On sanitary grounds, I must earnestly protest against the use of wooden block pavements. Such blocks, laid endwise, not only absorb water which dissolves out the albuminoid matter that acts as a putrefactive leaven, but also absorbs an infusion of horse-manure and a great quantity of horse-urine dropped on the street. The lower end of the blocks, resting on boards, clay or sand, soon becomes covered with a fungoid growth thoroughly saturated with albuminous extract and the excreta of animals in a liquid, putrescible form. These wooden pavements undergo a decomposition in the warm season, and add to the unwholesomeness of the city. The street, in fact, might as well be covered a foot deep with rotting barn-yard manure, so far as unwholesomeness is concerned. Moreover, the interstices between the blocks and the perforations of decay allow the foul liquids of the surface to flow through, supersaturating the earth beneath, and constantly adding to the putrefying mass."

Cedar block has been condemned in similar terms by many others. On the other hand, Col. Heywood, Engineer of the city of London, Eng., has said: "It has been said that wood pavements at all times smell offensively and may be unhealthy; but although some city streets have been paved with wood for 30 years, no complaints that I am aware of have been made to the commission on this head, and the inhabitants at all times

have not only expressed great anxiety lest the wood should be replaced by other materials, but have subscribed towards the cost of its renewal. I have at times noticed offensive emanations from it near cab-stands, but am unable to find further evidence of its unhealthiness. These remarks must be held to apply only to public streets open to the sun and air and traffic; in confined places and under some conditions wood might be objectionable. I have seen it decaying in confined places without traffic."

The one statement by the Medical Health Officer of Detroit refers directly to the cedar block pavement as we understand it in this country. The other opinion, that of Col. Heywood of London, is expressed regarding the wooden pavement as laid in European countries. Between these two pavements there is a vast difference. Under European practice, many of the pavements are of the Kari and Jarrah woods of Australia, which are thoroughly saturated with resins, are very hard and are not subject to decay. They are sawn into brick-like blocks and laid on concrete. Where soft woods are used, they are also cut into regular oblong blocks and laid on concrete, and are saturated with creosote or treated with some other preservative process. Wooden pavements of America, however, represented by cedar block, are of a very different order. The round blocks, of irregular diameter, are merely the untreated wood, still carrying the bark. These, placed on a bed of sand, are under the most favorable conditions possible for decay, being constantly exposed to moisture, air and warmth. With no preservative treatment, they are enabled to absorb to the fullest extent all forms of liquid street filth which, in the process of putrefaction, feeds on the organic matter of the wood. The surface, which quickly becomes uneven, retains a large quantity of loose matter subject to decay, the whole giving rise at times to noxious odors. The effect, were sufficient of such paving used, would be to subject us to the conditions favorable to marsh-fever. From a sanitary standpoint, the cedar block pavement of this country would indicate a serious menace to health.

At the same time, while we are justified as a matter of theory in arriving at this result, there do not appear to be any statistics to prove the conclusion to be a correct one. The death-rate of cities most largely paved with cedar block does not bear any ratio to the extent of such pavement; nor does a change from cedar block to another less absorbant pavement produce a noticeable effect on the death-rate.

(Concluded in next issue.)

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\* Paper read at the recent meeting of the Association of Executive Health Officers of Ontario.

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miscious widths.....12 00	13 00		13 00	
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Hemlock scantling and joist				
up to 16 ft.....10 00	18 00		10 00	
Hemlock scantling and joist				
up to 18 ft.....11 00	2 00	12 00	13 00	
Hemlock scantling and joist				
up to 20 ft.....12 00	13 00	13 00	14 00	
Cedar for paving, per cord....	5 00		5 00	
Cedar for kerbing, 4 x 24,				
per M.....14 00	14 00		14 00	
Scantling and joist, up to 16 ft				
" " " " " " " " " " " " " "	14 00		14 00	
" " " " " " " " " " " " " "	18 00		18 00	
" " " " " " " " " " " " " "	20 00		20 00	
Scantling and joist, up to 22 ft				
" " " " " " " " " " " " " "	17 00		17 00	
" " " " " " " " " " " " " "	19 00		19 00	
" " " " " " " " " " " " " "	20 00		21 00	
" " " " " " " " " " " " " "	22 00		23 00	
" " " " " " " " " " " " " "	24 00		25 00	
" " " " " " " " " " " " " "	27 00		27 00	
" " " " " " " " " " " " " "	29 50		29 50	
" " " " " " " " " " " " " "	31 00		31 00	
" " " " " " " " " " " " " "	33 00		33 00	
" " " " " " " " " " " " " "	34 00		36 00	
Cutting up planks, 1x and				
thicker, dry.....25 00	28 00	25 00	30 00	

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1 1/2 " " " " " " " " " " " "	25 00	26 00	27 00	30 00
1 1/2 " " " " " " " " " " " "	18 00	19 00	18 00	19 00
1 " " " " " " " " " " " "	18 00	20 00	18 00	22 00
1 " " " " " " " " " " " "	12 00	15 00	12 00	15 00
Beaded sheeting, dressed.....	20 00	35 00	22 00	35 00
Clapboarding, dressed.....	14 00	8 00	12 00	12 00
XXX sawn shingles, per M				
16 in.....	2 40	2 35		3 00
XX sawn shingles.....	1 60	1 50		
sawn lath, No. 1.....	1 75	2 00	2 50	2 60
Cedar.....		2 90		2 90
Red oak.....	30 00	40 00	30 00	40 00
White.....	37 00	45 00	35 00	55 00
Basswood, No. 1 and 2.....	28 00	30 00	18 00	20 00
Cherry, No. 1 and 2.....	70 00	90 00	70 00	80 00
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(Continued on Page 8.)

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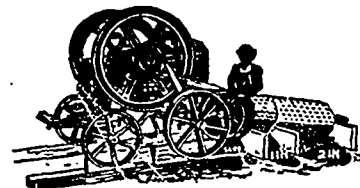
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Contractors' Plant and Machinery.

Table with 2 columns: Name and Page Number. Includes Rice Lewis & Son.

Church and School Furniture.

Table with 2 columns: Name and Page Number. Includes Can. Office & School Furniture Co.

Cements.

Table with 2 columns: Name and Page Number. Includes Bremner, Alex., Currie & Co., etc.

Interior Decoration.

Table with 2 columns: Name and Page Number. Includes Luxer & Prisms.

Lime.

Table with 2 columns: Name and Page Number. Includes Currie & Co., W&F.P.

Legal.

Table with 2 columns: Name and Page Number. Includes Denton & Dods, Quinn & Morrison.

Machinery.

Table with 2 columns: Name and Page Number. Includes Jenck's Machine Co.

Mantles, Grates, and Tiles.

Table with 2 columns: Name and Page Number. Includes Chat. Rogers & Sons Co.

Mosaic Marble & Enamel Co.

Table with 2 columns: Name and Page Number. Includes Rice Lewis & Son.

Mortar Colors and Shingle Stains.

Table with 2 columns: Name and Page Number. Includes Cabot, Samuel, Muirhead, Andrew.

Ornamental Iron Work.

Table with 2 columns: Name and Page Number. Includes Dennis Wire & Iron Co., Ives & Co., etc.

Painters.

Table with 2 columns: Name and Page Number. Includes Montreal Directory, Toronto Directory.

Plasterers.

Table with 2 columns: Name and Page Number. Includes Hynes, W. J.

Paints & Varnishes.

Table with 2 columns: Name and Page Number. Includes Muirhead, Andrew.

Parquet Floors.

Table with 2 columns: Name and Page Number. Includes Elliott & Son Company.

Plate Glass.

Table with 2 columns: Name and Page Number. Includes Hobbs Glass Works, Lyon, N. T., etc.

Pressed Brick.

Table with 2 columns: Name and Page Number. Includes Taylor Bros.

Plumbers.

Table with 2 columns: Name and Page Number. Includes Montreal Directory, Toronto Directory.

Roofers.

Table with 2 columns: Name and Page Number. Includes Frink, I. P., Duva & Co.

Roofers.

Table with 2 columns: Name and Page Number. Includes Campbell & Gilday, Duthie & Sons, etc.

Roofing Materials.

Table with 2 columns: Name and Page Number. Includes Ormsby & Co., A. B., Stewart & Co., etc.

Sanitary Appliances.

Table with 2 columns: Name and Page Number. Includes Garth & Co., Toronto Steel Clad Bath & Metal Co., etc.

Stained and Decorative Glass.

Table with 2 columns: Name and Page Number. Includes Horwood & Sons, H. Hobbs Glass Works, etc.

Stained and Decorative Glass Works.

Table with 2 columns: Name and Page Number. Includes Mackey Stained Glass Co., McKenzie's Stained Glass Works, etc.

Storm Doors.

Table with 2 columns: Name and Page Number. Includes Hillcock & Co., John.

Typewriters.

Table with 2 columns: Name and Page Number. Includes Archibald, Chas. E.

Ventilators.

Table with 2 columns: Name and Page Number. Includes Boston Blower Co., Wallber, E. A.

Wall Plaster.

Table with 2 columns: Name and Page Number. Includes Albert Mfg. Co., A'astatine Co.

Water Pipes.

Table with 2 columns: Name and Page Number. Includes Toronto Foundry Co.

Storm Doors.

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Typewriters.

Table with 2 columns: Name and Page Number. Includes Archibald, Chas. E.

Toronto. Montreal.

Table with 4 columns: Description, Toronto Price, Montreal Price, and another Montreal Price. Includes Hull, Ontario, Keene's Coarse Whites, etc.

HARDWARE.

Table with 4 columns: Description, Toronto Price, Montreal Price, and another Montreal Price. Includes Cut nails, 5d & 6d, per keg, Steel nails, etc.

CUT NAILS, FENCE AND CUT SPIKES.

Table with 4 columns: Description, Toronto Price, Montreal Price, and another Montreal Price. Includes 40d hot cut, per 10 lbs, 8d, 10d, hot cut, etc.

Cut spike, 10 cents per kg advance.

Steel Nails, 1 c. per kg extra.

Iron Pipe:

Table with 4 columns: Description, Toronto Price, Montreal Price, and another Montreal Price. Includes Iron pipe, 1/2 inch, per foot, etc.

Lead pipe, per lb.

Table with 4 columns: Description, Toronto Price, Montreal Price, and another Montreal Price. Includes Lead pipe, per lb., Waste pipe, per lb.

Galvanized Iron:

Table with 4 columns: Description, Toronto Price, Montreal Price, and another Montreal Price. Includes Adam's-Mar's Best and Queen's Head, 16 to 24 gauge, etc.

Structural Iron:

Table with 4 columns: Description, Toronto Price, Montreal Price, and another Montreal Price. Includes Steel Beam, per 100 lbs, channels, angles, etc.