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CANADIAN CONTRACT RECORD

A WEEKLY JOURNAL

PUBLIC WORKS • TENDERS •
ADVANCE INFORMATION •
AND MUNICIPAL PROGRESS

EVERY SATURDAY

Vol. 3.

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No. 31

THE CANADIAN CONTRACT RECORD,
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Information solicited from any part of the Dominion regarding contracts open to tender.

ADVERTISING RATES ON APPLICATION.

TENDERS

Will be received until 12 o'clock noon, THURSDAY, SEPTEMBER THE 15TH, 1892, for all trades required in the erection of a Residence on McCaul street, Toronto. No tender necessarily accepted. Plans and specifications may be seen at 32 Adelaide street East.

F. PALMER, Architect.

Cedar Plock Paving.

Sealed tenders will be received at the office of George S. McPherson, Esq., Town Clerk, Petrolia, Ont., up to 5 p.m. WEDNESDAY, SEPT. 14TH INST., for paving with Cedar Blocks that portion of Petrolia Street between the Michigan Central track and the westerly limit of Princess Street.

Plans and specifications may be seen at the office of the Town Clerk, Petrolia, or at the office of Moore & Henry, Albion Building, London.

Each tender to be endorsed "Tender for Block Paving."

Lowest or any tender not necessarily accepted.

JOHN M. MOORE, C.E.,
Engineer Town Petrolia.

O. W. CHAMBERLIN,
Chairman Board Works.



Notice to Contractors

Tenders will be received by registered post, addressed to the City Engineer, Toronto, up to eleven o'clock a.m. on TUESDAY, SEPT. 20th, 1892, for the following work:

CEDAR BLOCK PAVEMENT

On Shaw street, from College street to Bloor street.

On lane first east from Simcoe street and south-erly from Pearl street.

STONE SIDEWALK

On Victoria street, both sides, from King street. Specifications and forms of tender may be obtained on and after Sept. 13th 1892, at the office of the City Engineer.

A deposit in the form of a marked cheque, payable to the order of the City Treasurer, for the sum of 5 per cent, on the value of the work tendered for under \$1000, and 2½ per cent, on the value of the work tendered for over that amount must accompany each and every tender, otherwise it will not be entertained. All tenders must bear the bona fide signatures of the contractor and his sureties (see specifications) or they will be ruled out as informal.

The committee do not bind themselves to accept the lowest or any tender.

JOHN SHAW,
Chairman of Committee on Works.
Committee Room, Toronto, Sept. 6th, 1892.

Steam Heating.

Sealed tenders addressed to the undersigned and marked "Tenders for Steam Heating," will be received until

Tuesday, the 20th September next,

for heating the County of Oxford House of Refuge, in accordance with plans and specifications prepared for the purpose by the Architects, Messrs. Cuthbertson & Fowler.

Plans, specifications and conditions may be seen and all information obtained from the Architects at their office in Woodstock.

JAMES WHITE,
County Clerk.

Woodstock, Aug. 27th, 1892.



NOTICE TO CONTRACTORS.

Tenders will be received by registered post, addressed to the City Engineer, Toronto, up to eleven o'clock a.m. of September 13, 1892 for the construction of the following works:

CEDAR PAVEMENTS:

Royce avenue, from Synnington avenue to Perth avenue.

Perth avenue, from Bloor street to Royce avenue.

Herrick street, from Bathurst street to Lippincott street

Edmund street, from C. P. Railway to Royce avenue.

Lane south of Adelaide street to lane in rear of Arlington Hotel.

O'Hara avenue, from terminus of pavement to railway tracks.

CEDAR BLOCK, WITH CONCRETE AND GRANITE TOOTHING IN CENTRE:

High Park avenue, from Roncesvalles avenue to east limit of High Park.

COBBLE PAVEMENT.

Lane south of Queen street, from Tecumseth to Niagara street.

MACADAM PAVEMENT:

Centre road, Crescent road and South Drive.

PAVING ON TRACK ALLOWANCE ONLY:

Howard Park avenue, from Dundas street to Roncesvalles avenue.

CONCRETE WALK:

Queen street, north side, from Yonge street to James street.

Specifications and forms of tender may be obtained on and after September 7th, 1892, at the office of the City Engineer.

A deposit in the form of a marked cheque, payable to the order of the City Treasurer, for the sum of 5 per cent, on the value of the work tendered for under \$1,000, and 2½ per cent, for the value of the work tendered for over that amount, must accompany each and every tender, otherwise it will not be entertained. All tenders must bear the bona fide signatures of the contractor and his sureties (see specifications), or they will be ruled out as informal.

The Committee do not bind themselves to accept the lowest or any tender.

JOHN SHAW,
Chairman Committee on Works.
Committee Room, Toronto, Aug. 30, 1892.

Electric and Gas Fixtures.

Sealed tenders addressed to the undersigned and marked "Tenders for Fixtures," will be received until TUESDAY, THE 27TH INST., for the supply of Combination Gas and Electric Fixtures for the New Court House at Woodstock.

Specifications and conditions may be seen and all information obtained from the Architects, Messrs. Cuthbertson & Fowler, at their office in Woodstock, or they may be had on application by mail from the undersigned.

JAMES WHITE,
County Clerk.

Woodstock, 7th Sept., 1892.

CONTRACTS OPEN.

WESTVILLE, N. S.—An agitation has been commenced for a system of waterworks.

WINDSOR, ONT.—The Board of Health will ask the Council to build a permanent hospital.

PETERBORO, ONT.—A dam 600 feet in length is to be built across the Otonabee River for the Peterboro' Water Company.

NEW GLASGOW, N. S.—The Town Clerk will receive tenders until the 20th inst. for the purchase of \$25,000 worth of debentures.

SYDNEY, N. S.—Tenders are invited by the Town Council until the 15th inst. for the purchase of \$40,000 worth of debentures.

BRACEBRIDGE, ONT.—The Commissioner of Crown Lands has approved of the plans for a new iron bridge to be built over the river here.

ORILLIA, ONT.—The by-law to grant the sum of \$20,000 for the extension of the water-works was carried by the ratepayers on the 9th inst.

ELKHORN, MAN.—The Methodists have selected a site on which to build a new church.—Mr. J. H. Angus will shortly erect a new residence.

CHATHAM, ONT.—J. S. Wilson, architect, has just completed plans for a handsome new residence for Mr. Rolph Storey, of Cedar Springs, to cost \$3,000.

TORONTO JUNCTION, ONT.—The High School Board have selected a site for their new building at the corner of Quebec avenue and Glendonwynne road.

BROCKVILLE, ONT.—Wills Chipman, C. E., has presented a report to Council on the sanitary condition of the town, in which he recommends the construction of a number of new sewers.

PARIS, ONT.—The ratepayers will vote on a by-law on the 17th inst. to raise the sum of \$5,000 with which to construct a stone and brick arched culvert or bridge over the raceway on Grand River street.

BLACK CREEK, ONT.—The contract for building a bridge across Lyon's Creek, known as Enoch Dell Bridge will be awarded on Saturday, the 17th inst. M. D. Barnhead, Reeve of Wil loughby township.

SARNIA, ONT.—James Hale, representing a syndicate of Louisville capitalists, is negotiating for the purchase of the Star Island House, with a view of making extensive improvements. An extension will be erected to the main building, giving 300 additional rooms.

WINNIPEG, MAN.—The congregation of Wesley church are at present discussing the mat-

ter of building a new edifice. Petitions have been presented to Council for the construction of sewers on McKee and Catharine streets. The erection of a new bridge over the Assiniboine river at Main street is spoken of.

LONDON, ONT.—Plans for the new C. P. R. station have been approved, and the building will be pushed forward to completion without delay. The congregation of Park Avenue Luth-erian church have decided to erect a new edifice on the site of the present building, to accommodate 1,000 persons.

ST. JOHS, N. B.—The Provincial Government has passed an order-in-council to assist in the construction of the harbor improvement. The elevator is proposed in the order-in-council, at cost about \$80,000, or if enlarged to a capacity of 300,000 bushels, the cost would be \$125,000. The sum of \$1,000 a year for twenty years is ap-propriated for wharf and water-house construction.

BRANTFORD, ONT.—Messrs. W. Buck, H. B. Feeney, A. Watts, S. H. Wilkes, Dr. Digby and J. A. Schultz are applying for incorporation as the Brantford Electric Light and Power Com-pany, with a capital stock of \$150,000. The com-pany have in view the extension of the lighting system, the supplying of motive power and the furnishing of other electrical apparatus.—The Brantford Carriage Company will shortly erect an addition to their factory.

KINGSTON, ONT.—Mr. W. Snowden will build a handsome brick dwelling on the Cartmill property on Alfred street.—A special committee appointed by the Board of Health have recom-mended improvements in the sanitary condition of the county goal and court house.—The Thous and Island Steamboat Company has decided to build a new steamer this winter, the plans for which are being drawn by Capt. Pearce. The cost is estimated at \$120,000.—Tenders are wanted until to-day (Saturday) for the erection of a brick veneered dwelling on Rideau street. Plans at Mrs. M. Deans, Kingston Mills.

MONTREAL, QUE.—The Bank of Montreal is about to erect a branch bank on the corner of Notre Dame and Platon streets, Three Rivers. The building will cost \$25,000.—Mr. W. W. Ogilvie has purchased the Somerville Farm, situated on the Lower Lachine Road, on which he will erect a summer residence.—The contract with the Royal Electric Company expiring next year, the Mayor is desirous of having new tenders called for in October of this year. The present price is \$140 per light per year. Tenders are in- vited by the corporation of St. Louise de Mil-le-End for the construction of a brick sewer on St. Louis street.

OTTAWA, ONT.—The Census brick store at the corner of Bank and Slater streets, will shortly be removed to make room for a new building.—There is some talk of building an addition to the Protestant Old Men's Home.—Tenders will be received at the Department of Public Works until the 20th inst., for the construction of a wharf at Bayfield, Antigonish County, N. S.—E. F. E. Roy, Secretary Department of Public Works, will receive tenders until Tuesday, the 15th inst., for copper covering to roofs of custom house, also for the supply and erection of steel joists.—The Militia Department contemplates expending

a considerable sum this year in improving and reconstructing the Government Military works in the eastern provinces.

HAMILTON, ONT.—Mr. Powell, architect, has stated that he will shortly commence the erection of ten new stores.—The by-law to grant a bonus of \$775,000 to the Toronto, Hamilton and Buffalo Railway Company was carried by the ratepayers on the 2nd inst.—The Committee appointed to consider the question of providing additional accommodation for the Collegiate Institute, have recommended the erection of a suitable modern Collegiate Institute, or of an addition to the present building. Building permits have been granted as follows: E. N. W. Buscombe, two story brick dwelling on Inchbury street, cost \$1,000; A. Horning, two and a half story brick dwelling on George street, between Queen and Pearl streets, cost \$3,000, F. W. Briggs & Co., brick dwelling on Hughson, between Young and Maria streets, cost \$2,700; Canadian Colored Cotton Mill Company, alterations to factory, corner James and Simcoe streets, cost \$10,000.

TORONTO, ONT.—The Medical Health officer, in his report presented to the local Board of Health yesterday, has recommended the construction of sewers on the following streets. Orde street, between Queens Park avenue and Murray street, lane east of 492 Adelaide west, Wallace street, from Grogan's lane to McKenzie avenue. Bain street, lane south of Louisa street, and on Blevins avenue.—Plans have been completed by Commissioner Coatsworth for the new crematory to be erected in the west end. They have yet to receive the endorsement of the Board of Health.—The Senate of the University of Toronto have recommended that the gymnasium and Students' Union building be erected on the west side of the ravine, south of Wycliffe College.—C. F. Fraser, Commissioner of Public Works for Ontario, will receive tenders until the 29th inst., for works in connection with new Asylum at Brockville, and electric and gas fixtures for legislature chamber and main entrance and vestibule of the new Parliament Buildings. Tenders will also be received at the Department until noon of Thursday, the 22nd inst., for slate and marble tile work of entrances, etc., of new parliament buildings; alcove and shelving, furnishings, etc., of main library in new Parliament Buildings; cottage at London Asylum; lock-up at Sudbury; lock-up at French River, and addition to lock-up at Bracebridge.—Building permits have been granted as follows: Geo. Barton, cor. Bloor and St. Thomas sts., three pr. 2 story and attic bk. dwellings on Balmuto st., n.w. cor. Czar st., and three similar, attached, n. side Czar st., w. of Balmuto st., cost \$50,000; W. H. Cormack, 15 Russell st., two det. 2 story and attic bk. dwellings, e. side Bedford rd., immediately n. of Tranby ave., cost \$9,000, A. Bates, 2 story bk. barn and stable s.e. cor. Queen st. and Strachan ave., cost \$1,200.

FIRES.

The **Diamond Glass Works**, corner March and Burlington streets, Hamilton, were destroyed by fire on Wednesday last. The loss is estimated at \$35,000, about half of which is on the building, with an insurance of \$15,000. It is said the factory will be rebuilt at once.—The fine residence of Mr. G. C. McPherson, barnster, of Stratford, Ont., was burned on the 4th inst. Insurance \$2,500.—A fire occurred at Brighton, Ont., on Tuesday last, which destroyed the frame buildings of J. E. Proctor, J. B. Taylor, and the Eyre estate.—The vinegar works of William Wilson, 117 Bay street, Toronto, were damaged by fire to the extent of \$3,000 on Monday last. The loss is fully covered by insurance.—The British Columbia Iron Works at Vancouver, B. C., were burned to ground last week.—The hotel at Jarratt's Corners, owned by James McKenzie, was burned on Sunday last, together with Thomas Leatherdale's paint shop. The loss on the hotel building is estimated at \$2,500.—Mr. Benjamin Dime's residence at River du Loup, Que., was destroyed by fire on Monday last. Loss \$3,000, insurance \$1,900.—A fire occurred at Rodney, Ont., on Tuesday last, which destroyed the buildings of S. B. Morris and L. Mistie. Total loss \$3,600.—The residence and store of Mr. Octave Letellen, at St. Roch du Degele, Que., was completely destroyed by fire on Thursday last, entail-

ing a loss of \$10,000; no insurance.—The large building of Tushingham & Son at 102 Adelaide street west, Toronto, was damaged by fire this week to the extent of \$10,000; there was no insurance.

CONTRACTS AWARDED.

VICTORIA, B. C.—The contract for the new power house for the National Electric Tramway Co. has been awarded to J. W. Carter, at \$16,300.

STRATHROY, ONT.—The tender of Mr. John McPherson has been accepted for rebuilding the Roman Catholic church. Mr. Jos. Getty has the sub-contract for brickwork, and E. Gooderham for plastering.

ST. MARY'S, ONT.—Contracts have been awarded as follows for the erection of St. Mary's Roman Catholic Church: masonry and cut stone work, Messrs. Herbert & Murphy, Toronto, carpentry, John Hanrahan, Toronto. The total amount of the tenders sent in from the various trades for the work necessary to complete the building, is about \$20,000.

TORONTO, ONT.—Messrs. Bennett & Wright have been awarded the contract for the gas and electric light fixtures for the new Parliament buildings.—The contract for the construction of a subway at the cattle market has been awarded to Mr. McKeown, at the price of \$8,872. Mr. A. J. Brown has secured the contract for a sewer in connection therewith, at \$859.

COLLINGWOOD, ONT.—Mr. Kenny, architect, has awarded contracts as follows for the erection of a pressed brick residence for Mr. Smart: masonry, Mr. Lougrie; carpentry, Bryan Bros.; painting, Mr. Northvale; plumbing, Duncan Bros.; plastering, Mr. Lockton, Probable cost \$3,500.—The following tenders have been accepted for the erection of a pressed brick residence on Pine street for Mrs. Beay, to cost \$3,500: masonry, E. Colherall; carpentry, Peterman & Findlay.

ACTION OF SEA WATER ON PORTLAND CEMENTS.

In the opinion of Dr. Michaelis, of Berlin, the greatest enemies to the permanency of the Portland cement used in marine structures are the sulphates contained in sea water. If there is any great quantity of alumina and ferric oxide in the cement the structure breaks up sooner than otherwise. This is accounted for by the fact that the sulphate forms with the aluminate and ferrate of lime a number of crystalline compounds such as basic sulphate of lime aluminosulphate and ferro sulphate of lime. These compounds take up a large quantity of water of crystallization so that the total volume is much increased. Hence the weakness and disintegration of the cement structure. Dr. Michaelis considers that the separation of hydrate of magnesia is quite innocuous, for it is only displaced from its solution in the form of a flocculent slimy hydrate which, if anything, is useful in stopping up the pores. His general recommendation to users of concrete for marine work is to choose a cement rich in silica, and as poor as possible in alumina and ferric oxide; and to envelop the structure with an impermeable mixture composed of one part of cement with 2 to 2½ parts of sand of mixed grain, of which at least one-third should be very fine sand, and to this the requisite amount of ballast should be added.

Leaks in cisterns can be repaired by applying to the seams a mixture of four parts of linseed oil, boiled with litharge, and eight parts of melted glue, mixed well together. In about two days after application, it will be found to have set so hard that water can again be admitted with safety.—*Exchange.*

USEFUL HINTS.

The painting of brick walls is mainly for the purposes of preservation, but the fact should not be forgotten that paint is an excellent preventative of dampness, and that a house with well painted walls is dryer, and consequently healthier, than one with the walls exposed. The best paints for this purpose, where the colour is not an objection, are the natural ochre pigments, united with zinc oxide. Thus, yellow ochre and zinc would give a pleasing buff. Whatever impairs the usefulness of a paint by attacking its tenacity and waterproofing quality is to be avoided.

The distance between Capes Traverse and Tormentine, the proposed outlets of the Prince Edward Island Tunnel, is eight miles. The work of testing the rock is being carried on by the Electric Mining Company, of Ottawa. In order to accomplish the diamond drilling under the water a tripod of iron tubing is driven into the bottom, this giving a stationary surface, on which a platform is built beyond reach of the waves. The drilling is done through a large casing sunk to the bottom. The test holes are a third of a mile apart and are carried 110 ft. deep.

In works which are exposed to the action of the sea or the currents of rivers, Rennie adopted the plan of bedding the outside of joints, for about an inch deep, in the face, with Roman cement of the best quality. The interior part of the stones was bedded in mortar, composed of two parts of well burnt stone lime, one part of ground puzzolano, or calcined pounded iron-stone, and two parts of clean sharp river sand not too fine. The lime was used hot, for which purpose it was necessary that it should be burnt adjoining the works, and mixed at once with its due proportion of sand and puzzolano, or iron-stone, previous to being slacked. It was afterward covered over with sand, so as to prevent the access of the air; water was then poured on the heap, and in this state it was left for a day or two until completely slaked; after which it was taken from the heap as wanted. The unslaked particles were separated, and the other ingredients well mixed, by being passed through a screen, after which the mixture was made into mortar, with the least possible quantity of water, by means of a pug mill, prepared for that purpose.

A difference of opinion has existed as to the best priming to use in iron work, some bridge and railroad engineers having maintained that iron oxide paint is better than red lead, as possessing greater covering qualities. While this may be true, the thickness of the covering is greater when red lead is used, and, moreover, the coating adheres more closely to the iron, forming a skin impervious to moisture, while the oxide paint seems to be more or less porous and allows rust to go on underneath its surface. The best method of priming iron is to pickle it with a dilute solution of muriatic acid, and then to remove all the scale and dirt with wire brushes, which leaves the iron with a bright smooth surface. It is then washed with pure water, rubbed entirely dry and immediately coated with red lead and raw linseed oil. This is the method employed in some of the best ship building yards on all work requiring the greatest care. In ordinary work as well, the painter should use the utmost care to clean any rust from the surface of the iron before priming; for rust, containing moisture in itself, will spread, even though the surface of the iron is more or less efficiently protected from the action of the atmosphere by a coating of paint.—*Plumber and Decorator.*

MUNICIPAL DEPARTMENT.

LEGAL DECISIONS AFFECTING MUNICIPALITIES.

In *Edward Yanish v. City of St. Paul*, it was held that a city council, having general authority to establish streets, may, under peculiar circumstances, fix the grade for one side of the street on a materially different level or plane from that of the other side; and if this render it incidentally necessary to construct a retaining wall along the center of the street to support the earth on the higher grade, that may be done. Such an exercise of public rights is not an infringement of the rights of an adjacent proprietor whose property may be injured thereby.

If a city has power given by the legislature to grade streets, the common council or governing body has full discretion as to the exercise of the power. So it is held that the courts will not inquire into the necessity of the grading, or the refusal to grade, or whether a particular grade adopted, or a particular mode of executing the grade, is judicious. Possibly a plain case of abuse of any such power to the injury of a petitioner might under certain circumstances warrant an injunction, but the presumption is against such petitioner. Such functions are in their nature legislative. Hence the grade can be altered at will.

The power to grade streets is usually conferred on cities expressly, but if that be not so, it is usually implied in other grants of power. In Pennsylvania it is held that a city has an implied power to grade its streets when it is not expressly, granted such power. The power to pave streets includes grading and all other things preliminary and incidental to good paving.

"Paving," as applied to streets, means in law their "reduction to a certain degree of ascent or descent."

A municipal corporation is not liable for damages resulting from the establishment or alteration of the grade of a street unless the state law happens to establish such liability. It is not liable for any peculiar kind or method of grading, except as stated. There are several states, however, wherein abutting owners are compensated for injury from the change of grade of a street. If a statute fixes the grade of streets at their intersection, the streets between the crossings must conform to that grade.

In grading, shade trees may be removed if necessary, and the owner cannot get damages unless he shows negligence in the work. No liability exists independent of statute, if by grading the street a portion of the adjoining lot falls into the highway; or, on the other hand, the street is so cut down as to make the abutting lot difficult of access. This is true also when the abutting owner erected buildings or made improvements with reference to an established grade which was subsequently altered to the injury of such owner. But the city is liable if it obstructs streets by the approach to a bridge in a street, whereby the abutting owners' access is prevented, or water caused to flow and drain on his property.

Although many states have provisions relating to these topics, I might add that such injury from grading is not considered to come under the constitutional provision

MUNICIPAL ENGINEERS, CONTRACTORS, AND MATERIALS.

forbidding the taking of private property for public use without compensation. The property injured is not "taken," but merely suffers a consequential injury.

IN RE PRITTE AND CITY OF TORONTO.
 - The Court of Appeal for Ontario has decided that a municipal corporation has power to expropriate lands for the purpose of constructing a sewer, and also has power to expropriate, as incident thereto, the right of entry thereto for the purpose of maintenance and repair. The date of the passing of the by-law defining the lands and the nature of the rights required is the date in relation to which the compensation should be assessed.

LASTING QUALITIES OF PAVEMENTS.

Who can tell how to estimate the lasting qualities of a pavement? says Louis H. Gibson, in *Paving*. What are the fixed conditions? The width of the street, the number of vehicles which pass over it, their speed, their character, the number of hour's service in a day, the way in which the pavement is cared for, all are varying, all have to do with the life of the pavement. We say a pavement lasts five or ten years. Would it last five or ten years some place else? The physical strain of service as outlined above, the weather, are hardly to be found alike at all times. Take, as an instance, the travel in Paris. Rue de Rivoli, 23,000 vehicles and 42,000 horses in twenty-four hours; Avenue de L'Opera, 29,000 vehicles; Boulevard Sebastopol, 46,000; Boulevard des Itiens, 30,000; Rue Lafayette, 12,000. One would not think from this that they have had quite as much trouble with Rue Lafayette as any other street notwithstanding the fact that the travel is apparently lighter than on the other streets named. It is light in one sense and heavy in others. Rue Lafayette is a relatively narrow street. The travel is concentrated. Again, it is heavy; that is, each particular vehicle will average much more in weight than those on the other streets named. Taking the weight of the vehicle, the width of the street and all into consideration, it is altogether possible that its covering has to submit to more strain per square foot per hour than that of the other streets named. It is hardly possible to affirm this positively because of the general difficulties of the problem as outlined above. Yet results on this street and the general opinion of experts indicate such a statement to be true.

An option to buy the works of a water company at an appraised valuation is one of the most valuable rights a growing city supplied by private waterworks can possess, and one which it should surrender under no conditions. This is true because: (1) Every growing city will sooner or later desire to own its works, and (2), a purchase option insures a city a possible good water service, either by quickening a company's desire to give such service or by permitting a city to buy and operate the works itself.—*Engineering News*.

The municipal clerks of the County of Oxford have formed themselves into an association for the consideration of municipal affairs. Mr. E. Cotly, of Embro, is the Secretary.

THOROLD CEMENT

WELLAND CANAL ENLARGEMENT.
 RESIDENT ENGINEER'S OFFICE,
 WELLAND, April 17th, 1884.

JOHN BATTLE, Esq., Thorold.

Dear Sir, - Yours of yesterday, relative to Thorold Hydraulic Cement, is received. In reply, I beg to say that my tests of the Thorold Hydraulic Cement have extended over a period of twenty-eight years, and have been on a large scale, as exemplified in the locks, bridges, culverts and other masonry on the Welland Canal and Welland Railway, and that the record, which has been invariably satisfactory, is to be found in examination of the structures. The necessary tearing down of masonry and concrete, during the Welland Canal Enlargement, has afforded abundant evidence of the reliability of the Thorold Hydraulic Cement, both in masonry and concrete, and above and under water. I desire no better cement for the class of work referred to.

I am, dear sir, yours truly,
 W. G. THOMPSON,
 Resident Engineer.

DEBENTURES WANTED.

Municipalities issuing debentures, no matter for what purpose, will find a ready purchaser by applying to G. A. STIMSON, 9 Toronto Street, Toronto. N.B.—Money to loan at lowest rates on first mortgage.

R. E. H. BUCKNER,

39 Adelaide St. East, - TORONTO.

PATENT CAST IRON GULLIES,
 Vitrified Clay Sewers - Dust Bins - Sewer Pipe
 Cements - Steam Road Rollers - Stone
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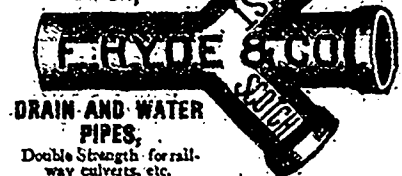
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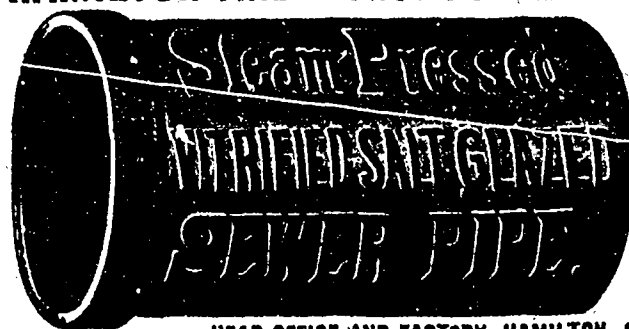
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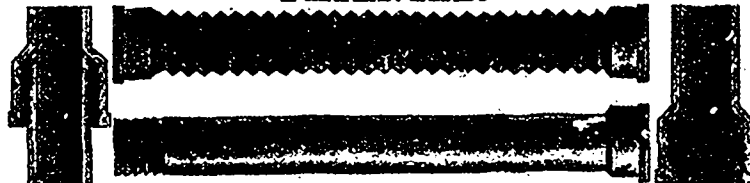
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Table listing prices for various building materials including nails, iron, and other products, with columns for Toronto and Montreal prices.

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