

# CANADIAN CONTRACT RECORD

A WEEKLY JOURNAL OF 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.

JANUARY 1, 1902

No. 45

**THE CANADIAN CONTRACT RECORD,**  
PUBLISHED EVERY WEDNESDAY  
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**C. H. MORTIMER PUBLISHING COMPANY**  
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CONFEDERATION LIFE BUILDING, TORONTO  
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Telephone Main 2299.  
Advertising Rates on application.

## Tenders FOR A STEEL BRIDGE

Tenders will be received till JANUARY 25TH, 1902, for the erection of a Steel Bridge over Mill Creek on the Town Line of Bruce and Saugceen. Span to be 80 feet C. to C. of piers, 14 feet roadway, moving load of 100 pounds per square foot, steel joists, rock elm or tamarac planking. Bridge about 6 miles from Port Elgin.

Also for two Concrete Abutments for the bridge; good gravel about half a mile away. Tenders to state amount per cubic yard. Specifications may be seen with Henry Miller, county commissioner, Port Elgin, or with the undersigned.

A marked cheque for \$500.00, payable to the treasurer county Bruce, to accompany each tender. The lowest or any tender not necessarily accepted.

**JAMES WARREN, Engineer.**  
Walkerton, December 26th, 1901.

## NOTICE TENDERS FOR BRIDGES WANTED.

TENDERS will be received by the undersigned on behalf of the County of Huron, at the Wingham post office, until 4 o'clock, p.m., on MONDAY, THE 20TH DAY OF JANUARY, NEXT, 1902, for erecting the superstructures of two steel bridges:

One to be erected over the Dayfield River about 1 1/2 miles west of the town of Clinton; to be of one span, 110 feet long, clear between the abutments; roadway, 16 feet wide, with steel joists and pipe railing; floor to be of rock elm or tamarac, three inches thick, securely spiked to joists; railing to be 4 feet high of 2 tiers of pipes; strength 200 lbs. per square foot of floor surface. Bridge to be completed on or before the 1st day of August, next, 1902.

One to be erected over the north branch of the Milland river, between Upper and Lower Wingham, to be 132 feet long, clear between the abutments, with roadway 16 feet wide, and one sidewalk 6 feet wide, to have nine panels in truss; steel joists, 2 foot centers; pipe railing, 4 feet high; four tiers of pipes in each railing; floor rock elm, oak or tamarac, 3 inches thick, securely spiked; floor of sidewalk, 2 1/2 inch of cedar. The floor is to angle 2 1/2 feet on the width of the roadway; strength 200 lbs. per square foot of floor surface. To be completed on or before the first day of September next, 1902.

The bridges will be about 12 feet high each, hard bottom and little water. The lowest or any tender not necessarily accepted.

**JOHN ANSLEY,**  
County Commissioner.  
Wingham, Dec. 27th, 1901.

## Municipal Debentures

Tenders will be received by the undersigned up to the evening of WEDNESDAY, THE 5TH DAY OF JANUARY, 1902, for the purchase of \$2,000 of Debentures of the Village of Fergus, payable in ten yearly payments of principal and interest amounting to \$246.98 each, payable at the office of the Treasurer of said Village on 31st day of December each year; the first of said payments becoming due 31st day of December, 1902.

**WILLIAM ROSS,**  
Treasurer Village of Fergus.

## Notice to Contractors

Combined Traffic and Railway Bridge for Fraser River, at New Westminster, British Columbia, Canada.

SEALED, SEPARATE OR WHOLE TENDERS, properly superscribed, as the case may be, "Tender for Substructure, Fraser River Bridge," "Tender for Superstructure, Fraser River Bridge," "Tender for Fraser River Bridge" will be received by the undersigned up to and including 5TH DAY OF JANUARY, 1902, for the manufacture, erection and completion of the bridge in accordance with the drawings and specifications to be seen on application at the Lands and Works Department, Victoria, B. C., at the Government Office, New Westminster, B. C., and at the office of Messrs. Waddell & Hedrick, Consulting Engineers, New Nelson Building, Kansas City, Mo., on and after the 5th Day of December, 1901.

Intending tenderers, upon application at any of the above named offices, may obtain, upon payment of ten (\$10) dollars, copies of drawings and specifications for either substructure or superstructure, or twenty (\$20) dollars for both.

Each tender must be made out on the form supplied and must be accompanied by an accepted bank cheque or certificate of deposit on a chartered bank of Canada or National Bank of the United States, made payable to the undersigned, or by gold, in the sum of five thousand dollars, (\$5,000) which will be forfeited if the party tendering decline to enter into contract when called upon to do so.

The cheques or cash deposits, as the case may be, of unsuccessful tenderers will be returned when contract is awarded.

The agreement on the form of tender to furnish a bond for \$5,000, or equivalent satisfactory security, for the due fulfilment of the work, must be signed by the tenderer and his sureties.

The Department is not bound to accept the lowest or any tender.

**W. S. GORE,**  
Deputy Commissioner of Lands and Works,  
Lands and Works Department,  
Victoria, B. C., 2nd December, 1901.

## NOTICE TO CONTRACTORS

Combined Traffic and Railway Bridge for Fraser River, at New Westminster, British Columbia, Canada.

## Extension of Time for Receiving Tenders

The time for receiving tenders for the above bridge has been extended to SATURDAY, INCLUSIVE, THE 5TH JANUARY, 1902.

**W. S. GORE,**  
Deputy Commissioner of Lands and Works,  
Lands and Works Department,  
Victoria, B. C., 13th December, 1901.

## CONTRACTS OPEN.

ARNPRIOR, ONT.—A. T. Budd will erect two buildings on John street.

PROSPECT HILL, ONT.—R. Wilson purposes building a brick residence next summer.

MOOREFIELD, ONT.—It is proposed to build a steel bridge over the Conestogo river.

DIGBY, N. S.—A syndicate has been formed to build a sloop yacht, from designs by Charles Barr.

HARTNEY, MAN.—The A. E. Hill Co., general merchants, intend building new store premises next spring.

KASLO, B. C.—The ratepayers are to vote on a by-law to grant a bonus of \$50,000 to the Kaslo Smelter Co.

OWEN SOUND, ONT.—The Summer Resort Co. will erect a large summer hotel at Balmy Beach in the spring.

AYR, ONT.—On Monday next the ratepayers will vote on a by-law to provide funds for permanent sidewalks.

GUELPH, ONT.—Temporary premises have been secured by Morlock Bros. pending the rebuilding of their factory.

FERGUS, ONT.—William Ross, village clerk, invites bids up to January 8th for purchase of \$2,000 ten year debentures.

ST. THOMAS, ONT.—Committees from the Elgin and Middlesex county councils have selected a site for the new Muncey bridge.

BOISSEVAIN, MAN.—At a public meeting here the construction of a branch of the Canadian Northern Railway to this town was urged.

MOOSE JAW, N. W. T.—The question of installing waterworks and electric light plants is receiving the consideration of the council.

BATHURST, N. B.—Surveys have been made for a new wharf to be built here, and tenders for the work will likely be called for shortly.

FORT WILLIAM, ONT.—It is stated on official authority that the C. P. R. accommodation at this place will be doubled next year.

CORNWALL, ONT.—Andrew Carnegie has offered to give \$7,000 to build a public library here on condition that the town furnishes a site.

NORTH SYDNEY, N. S.—It is again reported that the Nova Scotia Steel & Coal Co. have decided to establish their plant here.

GRAVENHURST, ONT.—R. Fielding has made a proposition to supply the town with water-works and electric lighting for a period of 25 years.

NEEPAWA, MAN.—The Merchants Bank of Canada have decided to erect a new bank building here, for which plans will be prepared immediately.

SHOAL LAKE, MAN.—If granted exemption from taxation for twenty years,

R. Scott will build a flour mill and a grain elevator here.

**PUGWASH, N. S.**—The ratepayers have decided to purchase a steam fire engine and other fire-fighting apparatus.

**WELLAND, ONT.**—By-laws will be voted on by the ratepayers Monday next to raise funds for macadamizing streets and \$3,500 to purchase a steam road roller.

**ST. GEORGE, N.B.**—Negotiations are in progress for the purchase of Tayte, Meating & Company's water power, to be used in connection with the construction of a pulp mill.

**WATERLOO, ONT.**—On Monday next the by-law to provide \$4,000 by the issue of debentures to construct a trunk sewer in the north ward will be voted on by the ratepayers.

**NORTH BAY, ONT.**—Rev. Father Scollard has decided upon a plan to raise funds for the proposed R. C. Church, which is expected to cost between \$30,000 and \$40,000.

**BRIDGETOWN, N. S.**—The ratepayers have decided to give a free right of way to the Victoria Beach and Middleville Railway.—The sum of \$10,000 has been voted for a new brick school.

**RICHMOND, QUE.**—Representatives of the municipalities of Richmond and Melbourne villages and the township of Melbourne have unanimously approved of the construction of a bridge over the river here.

**BURLINGTON, ONT.**—The Grand Trunk authorities are said to have decided that a new bridge over the canal is necessary. It will be built of steel and will cost about \$35,000.

**MORRISBURG, ONT.**—It is understood that a company is being formed to build an electric railway from this place to Winchester, with a branch to Chester-ville. Irwin Hilliard is solicitor for the applicants.

**CARLETON PLACE, ONT.**—The water power, dams and mills of the Canada Lumber Co. have been purchased by H. Brown & Sons, who intend to improve the property and develop the water power.

**PETERBOROUGH, ONT.**—The Quaker Oats Co. have secured a controlling interest in the Peterborough Light & Power Co., and it is understood that they will make improvements to the plant.

**STRATFORD, ONT.**—A public meeting was held on Monday last at which the question of permanently improving the roads and sidewalks was considered. The feeling was strongly in favor of the work being undertaken.

**ST. STEPHEN, N.B.**—James Stevens, jr., has given notice of application to parliament for the incorporation of a company to construct a pulp mill on the St. Croix river at Sprague's Falls, also to build the necessary dams, piers, etc.

**CARGILL, ONT.**—The Cargill Sugar Co., promoted by Henry Cargill, M.P., has secured the necessary capital for the erection of a beet sugar factory and expect to commence work early in the spring. The exact site of the factory has not yet been decided upon.

**ARCOLA, N.W.T.**—Work has been commenced on the new farmers' elevator here.—Walter Henry, of Wawanesa, has purchased a lot on Main street, in this village, and intends building a brick block next spring.—The school trustees have decided on the erection of a new school.

**HAMILTON, ONT.**—Plans are being prepared for a large paint tower to be built by the B. Greening Wire Co., and a contract will be signed within a few days for a new office building.—It is said that the Cataract Power Co. have reached the

limit of the capacity of their present water power development and are considering the construction of a canal and other works to furnish additional power. The cost of the necessary works would be in the vicinity of \$80,000.

**ST. HYACINTHE, QUE.**—Rev. Canaan Bouillon, of Ottawa, has completed plans for a new cathedral to be built here. It will be 260 feet long, with two spires each of a height of 180 feet. There will be a memorial chapel for the bishops of the diocese.

**VANCOUVER, B.C.**—It is estimated that damage to the extent of nearly \$1,000,000 was done last week by the storms along the Fraser river. The North Arm, Alliance and Labrador canneries were demolished.—The Methodists of Central Park will build a new church near the corner of Joyce and Westminster road.

**SARNIA, ONT.**—The North-West Transportation Co. have petitioned the council to build a wharf and warehouse for the use of the company. J. D. Long is president.—A by-law to raise \$15,000 for improvements to market buildings will be placed before the electors on Monday next.

**TRAIL, B. C.**—W. H. Aldridge states that the Canadian Smelting Works will proceed at once with the construction of a refinery at this place. The plant will be to a certain extent experimental, but if it should be found a commercial success, it will be enlarged or another plant established at Nelson.

**KINGSTON, ONT.**—The appointment of an assistant engineer has been recommended.—It has been decided to construct a drain on York street, at an estimated cost of \$1,700.—It is said that a number of Toronto and Montreal capitalists have decided upon the erection of a large summer hotel in this city, at a cost of \$100,000. A Mr. Coates is understood to be promoting the scheme.

**SAULT STE. MARIE, ONT.**—A syndicate of capitalists has been formed here to operate a line of steamers between Thessalon and Sault Ste. Marie. The steamer Lincoln, of Toronto, has been purchased and will be rebuilt.—The incorporation is announced of the Algoma Tube Works, Limited, with a capital of \$30,000,000, the Clergues being the promoters. It is announced that work will be begun on the plant next summer.

**BERLIN, ONT.**—At a meeting of the shareholders of the Ontario Sugar Co., held in Toronto last week, it was finally decided to erect the proposed factory in this city. As the buildings are to be completed by next midsummer, tenders will likely be invited immediately. The cost of the plant will be in the neighborhood of \$500,000. Hugh Blain, of Toronto, has been elected president of the company.—H. L. Janzen has decided to erect a new business block at the corner of King and Queen streets.

**FREDERICTON, N.B.**—The Provincial Department of Public Works will receive tenders up to January 13th for rebuilding the Mallory bridge, Emerson Creek bridge and Osborne bridge, all in the parish of Simonds.—The New Brunswick Coal & Railway Co. invite tenders up to January 8th, at 2 p.m., for construction of the second section of thirty miles of railway from Newcasale to Gibson. Rails, fish plates, bolts and ties will be furnished by the company. Tenders to be addressed to E. J. Evans, chief engineer, Hampton, Kings county.

**VICTORIA, B. C.**—It is understood that a site has been selected at the corner of Bird Cage Walk and Belleville street on which a large hotel will be built by the Canadian Pacific Railway Co. Montreal architects are said to be preparing the necessary plans.—The Vic-

torian West Athletic Association have taken tenders on a new building.—F. M. Rattenbury, architect, has recommended that tenders be invited immediately for the heating and ventilation of new high school building.—George Koenig, whose hotel at Shawinigan Lake was burned recently, has decided to rebuild.

**WINNIPEG, MAN.**—Thomas H. Johnson, of this city, has applied to the Dominion parliament for the incorporation of the Canada Central Railway Company, the object of which is stated to be to build a transcontinental railway from French river, on Lake Huron, to Vancouver.—It is stated that an electric railway will be built connecting this city with Headingly.—Tenders are invited by C. J. Brown, city clerk, up to Thursday, 9th inst., for the supply of from 500 to 1,000 cords of cedar.

**CHATHAM, ONT.**—Raleigh and Dover township councils have appointed committees to select a site for proposed bridge over the Thames river at Prairie Siding Station.—Howard township council have adopted a by-law to raise \$6,000 by the issue of debentures for erection of a new township hall. Particulars from George McDonald, township clerk, Ridgetown.—The by-law to loan \$25,000 to the Chaplins, of St. Catharines, to establish a factory here to cost not less than \$40,000, will be submitted to the ratepayers on Monday next.

**OTTAWA, ONT.**—The Dominion Government has been asked to bear a portion of the cost of a new subsidiary drainage system for Dufferin road and some other points of New Edinburgh. The work will cost \$19,000.—The Nipissing & Ottawa Railway Co. is seeking incorporation, to construct a railway from South-East Bay, at the east end of Lake Nipissing, to a point on the Ottawa river near the Opemican river.—The Department of Public Works are asking for tenders up to 11th inst. for the erection of a public building at Marysville, N. B. Plans at above department and at office of McFarlane, Anderson & Thompson, Fredericton, N. B.—It is likely the Garde Champlain will erect a drill hall in lower town next year.

**TORONTO, ONT.**—Tenders are wanted at 41 Austin avenue for plumbing of two houses.—The question of building a labor hall was again discussed at a meeting of the Trades and Labor Council last week, and a committee was appointed to look into the question and report at a later meeting.—Mr. Timmerman, superintendent of the Canadian Pacific Railway, states that estimates have been made for a large amount of work to be done in general improvements along the railway line and in renovating the stations at various points. Some extensive work in the Toronto yards is still under consideration.—Building permits have been granted as follows: C. R. Dinnick, brick dwelling, 208 St. George street, cost \$6,000; James Paul, brick dwelling, Robert street, near Sussex avenue, cost \$2,100.

**LONDON, ONT.**—Herbert Mathews, architect, is preparing plans for a residence on the Ridgeway, also for alterations to residence on Talbot street.—The architects in this city have considerable work in hand and expect an active building season in 1902.—M. Donohue has been granted a building permit for two brick veneer cottages on the east side of Wellington street, between Cheapside and Victoria street.—Application has been made for the incorporation of the London Railway Co., to build an electric railway from Ingersoll to London. F. G. Rumball and T. H. Purdom, of this city, are among the promoters, and T. H. Luscombe is solicitor for the company.—Plans will be prepared and tenders

asked for at once for the new bridge over the Thames river at the Muncey site. The bridge will be of steel on concrete abutments, and will have two spans of 150 feet each and two spans of 60 feet each.

**MONTREAL, QUE.**—There is a movement on foot for a union between the Baby Hospital and the Protestant Infants Home, with the object of building a new hospital in the vicinity of Durocher street. —The Sisters of the Congregation of Notre Dame have decided to rebuild the Mother House at Monklands. It will be a fire-proof structure.—It is understood that local architects are preparing plans for a new building to be built by the Guardian Fire and Life Assurance Co. on the vacant lot on St. James street recently owned by the Barron estate. The company have purchased the property through H. L. Putnam, of the Temple Building. —The municipality of St. Lambert have received the amount of insurance on the town hall, and will at once proceed to make arrangements with the post-office department for the erection of a joint post-office and town hall. —The shipping firms of Montreal have sent to the harbor commissioners their views as to how the proposed sheds, tracks, and other wharf improvements should be constructed.—The town council of Longueuil are considering the submission of a by-law to the ratepayers to provide for a system of arc street lighting.

#### FIRES.

Factory of the Imperial Cotton Co., Montreal, damaged to extent of \$1,500. —Steam grist and saw mills at St. Canute, Que., owned by Emerie Carriere, totally destroyed; loss \$9,000, no insurance.—C. P. R. station at Rosenfeld, Man. —Furnishing store of Graham Bros., London, Ont., damaged to extent of \$7,000.—The large dry goods and general furnishing store in Victoria, B. C., owned by David Spencer, was completely destroyed by fire on December 28th. The loss on buildings is about \$15,000, and on stock about \$200,000.

#### CONTRACTS AWARDED.

**SHERBROOKE, QUE.**—It is understood that D. G. Loomis & Sons are the lowest tenderers for the city buildings.

**VICTORIA, B. C.**—The contract has been let to George Bishop, of this city, for erection of hotel at Port Renfrew.

**STELLARTON, N. S.**—R. D. Rogers has given Rhodes, Curry & Co. the contract of building fifteen cottages next spring.

**HIGHGATE, ONT.**—The contracts for warming and ventilating the public school here has been given to the James Smart Mfg. Co., of Brockville.

**SYDNEY, N. S.**—Webster Bros. & Parkes, of Montreal, have been awarded by Schurman, Lefurgey, Clark & Co., of this place, the contract for tile mosaic and marble floors for Royal Bank here.

**NIAGARA FALLS, ONT.**—The McPherson Switch & Frog Co. have let contract for the erection of their works here to the Hamilton Bridge Co. The building will be of steel, one storey, 80x100 feet.

**WATFORD, ONT.**—The following tenders were received for purchase of \$11,680.30 local improvement debentures:

W. S. Fuller, \$11,810.50, (accepted); Industrial Mortgage and Loan Co., \$11,807.68; Lambton Loan Co., \$11,706; Huron and Lambton Loan Co., \$11,701.30

**LONDON, ONT.**—Herbert Matthews, architect, has let contracts as follows for residence in South London for John Smallman: Masonry and brick-work, William Hayman & Son; carpenter work, Tambling & Jones; lath and plastering, A. Dowall; painting and glazing, W. Lockhart; heating and galvanized iron, W. Wyatt & Son.

#### RAISING A SAGGING WALL.

An interesting piece of work was recently executed in connection with a new building in process of erection on East Eighteenth Street, New York. The steel frame work of one entire side wall of an eight-story building sagged so as to be 17 inches out of plumb and it was necessary to straighten it. Much of the brick-work was already in place when the sagging wall was discovered, and its removal required almost a week to accomplish. The contract provided for taking down such sections of the brick and terra cotta work as were necessary and then lifting

the steel frame without disjoining any part of it. The work of raising the wall was done by means of huge jack screws, operating on long needles extending through openings made in the wall. After the frame had been lifted to the requisite height the detached brick and terra cotta were replaced in the same relative position they occupied before. The cause of the sagging of the wall is thought to have been due to the manner in which the foundations of the large building adjoining were constructed, these having been laid by means of open caissons.

#### 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 insure 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.

## Good Roads Machinery Co. (Limited.)

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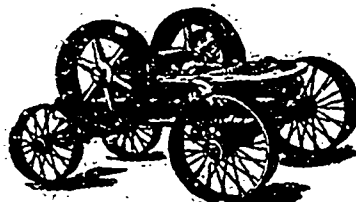
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## MUNICIPAL DEBENTURES BOUGHT

**ÆMILIUS JARVIS & CO.** (Toronto Stock Exchange) 10-21 King St. West, TORONTO, Ont.

**CONCRETE CONSTRUCTION IN ZERO WEATHER.**

The Eastern Elevator, Buffalo, has a large number of cylindrical steel grain bins  $1\frac{1}{2}$  feet in diameter and 80 feet high, which are supported on a horizontal platform or floor of Ransome steel-concrete construction. This platform is about 81 feet wide, 200 feet long, and is supported 10 feet above the surface of the ground on the tops of concrete piers 33 inches square and  $12\frac{1}{2}$  feet apart on centers, both transversely and longitudinally. These piers have offset concrete footings on pile foundations and carry transverse and longitudinal concrete girders 30 inches wide and 36 inches deep to the top of the floor surface, which form rectangles connecting the tops of all the piers. Each of them is reinforced by eight 1-inch square twisted steel rods in bottom and eight  $\frac{3}{4}$ -inch twisted steel rods in the top, which are continuous over the tops of the piers. The girders support  $4\frac{1}{2} \times 36$ -inch floor beams  $21\frac{1}{2}$  inches apart on centers, each of which has one  $1\frac{1}{4}$ -inch bar in the bottom and one  $\frac{3}{4}$ -inch bar in the top. They are parallel to both sets of girders and intersect each other at right angles, forming sets of panels  $16\frac{1}{2}$  inches square in the clear. These panels have floor slabs from 4 to 6 inches thick, with special reinforcements where there are openings through them, and are reinforced throughout by  $\frac{1}{2}$ -inch bars 6 inches apart. The concrete was made of 4 : 7 : 13 Portland cement, coarse, sharp lake sand and 1-inch broken stone, and was so strong that a 6-inch cube seven days old was tested up to the capacity of the machine, 150 tons per square foot, without breaking.

The concrete was nearly all mixed in December, 1900, and January, 1901, when the outdoor temperature varied from freezing to 10 degrees below zero, and the work was carried on regardless of the cold. The materials were mixed in batches of about 12 cubic feet each in a Ransome drum mixer making about 14 revolutions per minute. The product was handled by a steam derrick, which delivered it to a platform on which eight wheelbarrows were loaded at once to distribute it to different parts of the work. The capacity of the machine was limited by the ability to remove the concrete, and as many as 514 batches were mixed in a single day. The concrete was rammed in place in the usual way when the mercury was far below zero, and it froze on top almost as soon as placed.

As fast as the floor surface was finished it was covered with panels of light wooden sheathing and the work was carried on in the usual way. There were no walls enclosing the piers, and the space under the floor was enclosed by heavy canvas curtains reaching from the floor to the ground around the outside of the piers. Inside

this lower story about twenty salamanders, open coke braziers, were kept burning day and night as long as the work continued and maintained a constant temperature there of from 85 to 90 degrees. Attendants continually sprinkled water on the fires, making great quantities of steam, with which the air was kept saturated. The floor was not fully loaded for several months after completion, but has now been subjected to the proposed load of 5,000 pounds per square foot for several months without showing any signs of failure or weakness.

From observations on this work Mr. A. Wilfrid Ransome, the inspector in charge of construction, is convinced that good Portland cement concrete, well made and properly laid, is not at all injured by severe freezing if it is properly protected and allowed to set uninterruptedly without re-freezing after it commences to thaw.

**REAL ESTATE TRANSFERS.**

The following transfers of vacant property in Toronto are reported since last issue:

Withrow avenue, s. s., H. S. Mara to S. G. Spence,  $1 \times 130$ , being part lot 5, plan 578, assessed at \$5; no improvements.

Pearson avenue, n. s., George Rundle to Susan A. W. Walker,  $21 \times 132$ , being part lots 1 and 2, plan 585 assessed at \$210; no improvements.

Shaw street, e. s., Maria C. Haldan to James Gordon Jones,  $25 \times 127$ , being north part lot 19, block H, plan 399, assessed at \$500; no improvements.

St. Clarens avenue, w. s., Farmers Loan & Saving Co. to Sarah Jane Haines,  $40 \times 140$ , being part lots 14 and 13, plan 588, assessed at \$280; no improvements.

Tydnall avenue, w. s., Verno B. Wade-worth to W. R. McGill,  $25 \times 200$ , being south part lot 41, plan 431, assessed at \$700; no improvements.

Dufferin street, w. s., Farmers Loan & Savings Co. to Oliver James Face,  $37 \times 200$ , being part lot 26, plan 431, assessed at \$592; no improvements.

Dufferin street, w. s., Oliver James Face to Jane Adeline Graham,  $35 \times 200$ , being part lot 26, plan 431, assessed at \$560; no improvements.

Delaware avenue, e. s., Rev. Robert Cade to Joseph T. V. May,  $27 \times 146$ , being north part lot 10, block O, plan 329, assessed at \$270; no improvements.

Berkeley street, w. s., Corporation of the County of York to Consumers' Gas Company,  $12 \times 296$ , south of Front street, assessed at \$600.

Berkeley street, w. s., Corporation of the County of York to Grand Trunk Railway Company of Canada,  $28 \times 296$ , south of preceding parcel, assessed at \$1,400.

Bloor street west, s. s., Patrick Hand to Home Savings & Loan Co., Limited,  $60 \times 245$ , being lot 9, plan 352, assessed at \$600; no improvements.

Bathurst street, w. s., Canada Permanent and Western Canada Mortgage Corporation to John C. Webb,  $34 \times 129$ , being lots 5 and 6, plan 1,125, assessed at \$850; no improvements.

Morse street, w. s., J. W. G. Whitney to Hon. George W. Allan estate,  $30 \times 129$ , being lot 72, plan 416, assessed at \$360. also Pape avenue; e. s.,  $117 \times 100$ , being lots 23 to 27 inclusive, plan 682, assessed at \$936; total assessment of parcel \$1,296; no improvements.

Roxborough street west, n. s., Confederation Life Association to F. P. Wright,  $33 \times 149$ , being part lots 10 and 11, plan 166E, assessed at \$660; no improvements.

**JOSSON CEMENT** .. Manufactured at. NIEL ON RUPELL

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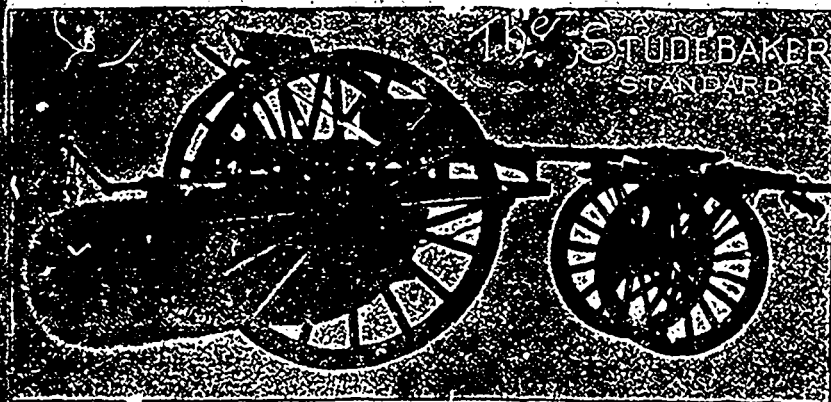
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The price of the third edition, mailed free, is \$1.00 to subscribers of the CANADIAN ARCHITECT AND BUILDER, and \$1.50 to non-subscribers. Order from the publishers,

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### CONCRETE IN BUILDING CONSTRUCTION.

A great deal of attention is just now being given to the use of concrete in building construction and everything pertaining to the method of doing the work is perused with more than usual interest. There have occurred a number of instances recently, says Carpentry and Building, where concrete has been employed with marked success in the construction of buildings intended to be used both for manufacturing and business purposes. In one instance the framing for the concrete work was built up of scantling 3x6 and 3x8 inches, with 1½ inch boards used for the concrete facing. The frames for the two sides of the wall were built up together and bolted through the uprights, the concrete being filled in between as the frame work rose. When the concrete work was completed the frames were taken down, the bolts removed and the holes filled with cement mortar. In this way the material in the frames and forms was used many times over.

In this particular instance the proportions of the materials used were 1 part Portland cement, 4 part sand, 8 parts crushed stone and 2½ parts rough stone, 1 barrel of cement making 1.35 cubic yards of concrete. The walls were left rough as they came from the forms, except about the windows, which were finished off with cement and sand. A good finish can be given by plastering the surface with a mortar composed of 1 part Portland cement and 3 parts fine, sharp sand. In putting up walls of concrete the thickness naturally varies with the height. In one case a wall 45 feet high was 17 inches thick for the first 30 feet and 12 inches thick for the remaining distance, while others 16 to 25 feet high ranged from 10 to 12 inches in thickness.

In another instance, where the buildings were to be used as an electric power plant, cement concrete was used throughout the structure. The proportions were 1 part Portland cement, 2½ parts sand and 4½ parts broken stone for the piers and arches of the chambers in which the turbine wheels were placed, also for walls and their foundations and for the finishing layers of floors. The walls were made of concrete blocks laid in ashlar masonry, the blocks being molded in boxes and allowed to remain until set. Water tables, cornices, window courses and other special forms were molded separately to give them their full architectural effect. The roof was of concrete, reinforced with expanded metal, covered with asphalted paper and slag concrete. The outer casing of the chimney, which was 175 feet high, was of concrete with an inner lining of brick.

In building chimneys a special mold is used for putting the concrete in place. The mold is circular in form, one part encircling the chimney on the outside and the other being parallel to it on the inside. A scaffolding is erected inside the chimney to support vertical beams which extend about 5 feet above the top of the mold when it is at its lowest position and from which the mold is hung.

After being put in place the two sections of the mold are tightened by turnbuckles and the concrete is deposited between

them. After the concrete is set the turnbuckles are loosened and the form raised about 5 feet by means of wheels turning on threads on the supporting rods, after which the mold is clamped again and another section of the chimney made.

In the case of a church in Brooklyn constructed of concrete, the Ransome system was used, this consisting of twisted steel bars imbedded in the concrete to give additional strength. The rods ran both vertically and horizontally, and the concrete was deposited in molds about movable wooden core pieces, making a hollow wall. Strips were nailed on the molds to produce the effect of joints, and the desired face was given to the stones by the form of the surface of the mold, the finish being produced by the use of tools after the concrete had hardened.

A convention of the Canadian Society of Civil Engineers will take place in Montreal on January 27th, 28th, and 29th. The meeting will open at the Society's rooms, 877 Dorchester street. In the evening of the 27th there will be an illustrated lecture by Mr. Wallace C. Johnston on the development of Shawinigan Falls. On Tuesday the members will be the guests of the Shawinigan Water & Power Company, going down by special train. The general meeting and election of officers will take place on Wednesday.

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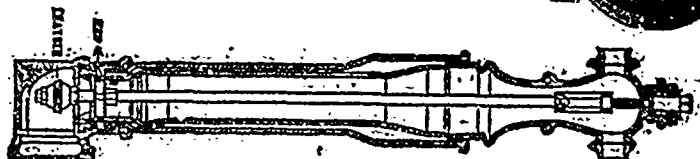
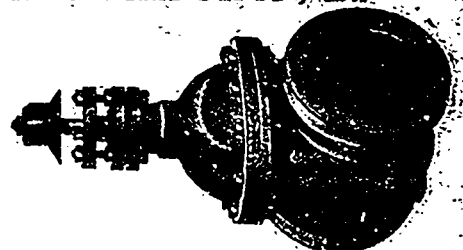
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## MUNICIPAL DEPARTMENT

### NEW PLUMBING STATION FOR OTTAWA.

The new auxiliary pumping station at the Ottawa pumping waterworks was set in operation for the first time on Christmas day, and the pumping capacity is now increased by 8,000,000 gallons daily.

The station is a substantial structure of limestone, built immediately adjoining the main station and being of the same height. When the work was started great difficulty was experienced in getting a dry foundation and a lot of blasting had to be done. The total cost of the building and equipment was \$95,000. There are two double action pumps, each with a daily capacity of four million gallons. The pumps were supplied by the Kerr Engine Company, of Wakerville, and the turbines and shafts by the Jenckes Machine Company, of Sherbrooke. Holbrook & Sutherland did the masonry and stone work and the later details were superintended by assistant engineer Cranston. The pumps cost \$22,000, turbines, shafts, etc., \$6,700, building, \$35,000, while the balance of the total cost of \$95,000 was expended on the foundation and incidental work.

The operation of the auxiliary plant will largely obviate the effect of anchor ice on the water supply and pressure, inasmuch as should one set of turbines become clogged so as to prevent the running of a pump, there are plenty of others to do the work and maintain a normal pressure.

### LIFE OF CAST-IRON PIPE.

In answer to a correspondent asking as to the probable life of cast-iron pipe buried in ordinary soil, Municipal Engineering gives the following interesting information on the subject:

The only data from observation at hand are found in reports from St. John, N.B., and Los Angeles, Cal. Gilbert Murdoch, superintendent of the waterworks of the former place, reported in 1892 several observations. In one case a 4-inch main, in use about 33 years in marsh mud, had failed by softening of the outside, and the break took place at some air cells in the body of the pipe.

A 6-inch pipe 51 years old in soft, slaty rock, failed from softening. A 24-inch pipe laid in well-drained, gravelly brick clay, 36 years old, failed from inherent defects in the pipe, the outside of the pipe being sound and the inside having a coat less than 1-16-inch thick. None of these pipes were protected by coatings. The conclusion regarding the 24-inch pipe in well-drained gravelly clay was that, aside from the defects in manufacture, its life would have been practically indefinitely long.

J. H. Dockweiler, city engineer of Los Angeles, Cal., reported the condition of the waterworks in 1897. The pipe was

uncovered in 318 places. Cast-iron pipe 28 years old was found in a perfect state of preservation. In sand or loam the bare pipe metal did not rust. In hard adobe soil there was some rust, but the pipe was practically uninjured. In all cases the original asphalt coating had practically disappeared. A later report of a board of engineers, consisting of J. D. Schuyler, A. L. Adams, A. H. Koebig and J. B. Lippincott, estimated the depreciation of the waterpipe in the city in the better soils at 1.25 per cent. per annum, indicating a life of 80 years, and in the poorer soils at 2 per cent. per annum, indicating a life of 50 years. The effect of the soil upon the outside of the pipe and of tuberculation upon the inside are both allowed for in these estimates.

In case there is opportunity for electrolysis from street railway or other electric leakage, the life of pipe is very greatly shortened. Some chemical conditions of soil which will shorten the life of pipe will doubtless be met with.

### LOCAL IMPROVEMENTS IN OTTAWA.

Local improvement work in Ottawa during the past season has been unusually heavy, even though the total expenditure this year is below that of 1900. This is to be accounted for by the fact that the total outlay of last season included as a local improvement work all the expenditure in connection with the subsidiary system of drainage at the Glebe. The assessment

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commissioner's figures show that the estimated cost of local improvements this year is \$114,763.51, as compared with \$169,483.61, a decrease of \$54,720.10, accounted for as above.

Under the local improvement system 172 works were commenced this year as compared with 91 in 1900. The property owner's share of the cost was \$70,969.21 and the city's \$43,794.30.

For concrete walks, \$57,829.20 was expended; for plank walks, \$3,318.50; sanitary sewers, \$51,246.81; macadam roads, \$2,369.

The town of Collingwood constructed 54,000 feet of cement sidewalk in the year 1901, at a cost of \$5,000.

The city engineer of Ottawa has prepared a statement of the cost of sidewalks constructed during the past year. There were constructed 131.2 miles of granolithic sidewalks, at a cost of 36.55 cents a sq. foot. The relative cost of sidewalks since 1897 has been as follows: 1897, 18c. a foot; 1898, 17c.; 1899, day labor, 15 9-10c.; 1900, 16 7-10c.; 1901, 16.55c.

Architects and engineers will be interested in knowing that you are submitting a tender as the result of the advertisement for tenders published in the CONTRACT RECORD. Mention the fact to them.

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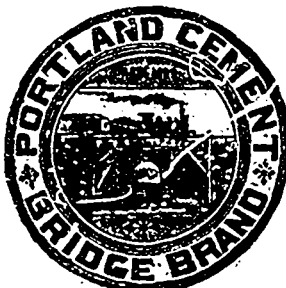
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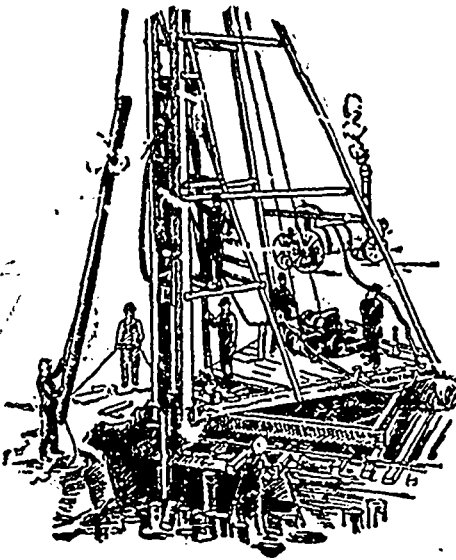
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Table listing brick and terra cotta products and prices for Toronto.

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Large index table listing various contractors, architects, and suppliers across multiple columns.

Table listing prices for Buff Peerless, Roman Red, and other bricks.

Table listing prices for various types of stone, including Common Rubble, Granite, and Sandstone.

Table listing prices for dimension stock granite and paving sets.

Table listing prices for various types of rubble, concrete, and paving materials.

Table listing prices for slate roofing and terra cotta tiles.

Table listing prices for various types of cement and lime.

Table listing prices for architectural varnishes and other finishing materials.