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# CANADIAN CONTRACT RECORD

A WEEKLY JOURNAL OF PUBLIC WORKS, TENDERS, ADVANCE INFORMATION AND MUNICIPAL PROGRESS

EVERY THURSDAY

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. 6.

JUNE 6, 1895

No. 18.

## THE CANADIAN CONTRACT RECORD, PUBLISHED EVERY THURSDAY

As an Intermediate Edition of the "Canadian Architect and Builder."

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CONFEDERATION LIFE BUILDING, TORONTO.  
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Information solicited from any part of the Dominion regarding contracts open to tender.

Advertising Rates on application.

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## TENDERS

Whole Tenders will be received by the undersigned until Saturday, the 8th of June, for the erection of a

**SCHOOL ROOM ADDITION TO THE PRESBYTERIAN CHURCH  
AT WOODBRIDGE.**

The lowest or any tender not necessarily accepted. Plans and specifications may be seen at my office, Woodbridge.

JOHN NATRASS,  
Sec. Building Committee.

## TENDERS

Will be received until SATURDAY, JUNE 15TH for the various works necessary in the execution of

**Additions and Alterations to a Residence in Cobourg, Ont.**

Drawings and specifications may be seen at my office and at the office of the Crossen Car Works Company at Cobourg.

The lowest or any tender not necessarily accepted.

S. HAMILTON TOWNSEND, A.R.C.A., Architect,  
June 3rd, 1895. 15 Gerrard St. East, Toronto.

## CONTRACT OF DREDGING

in the Townships of Raleigh and Tilbury  
East, in the County of Kent, Ont.

Estimated Cost, \$48,428.

Competition is invited for the work of repairing and improving the RALEIGH PLAINS DRAIN, according to the plans and specifications of W. G. McGeorge, Civil Engineer.

Competition will be by open bidding on the ground at the 6 and 7 Side Road, in the Township of Raleigh, beginning at the hour of Two o'clock in the afternoon on MONDAY, THE 2ND DAY OF JULY, 1895.

Conditions will be given at the same time and place, or these and the specifications may be obtained on application to the Clerk of the Municipality of Raleigh at Fletcher P. O., Ont., on or after the 24th day of June, 1895.

The Commissioners will not be bound to accept any offer or to let the work to any bidder.

R. J. MORRISON, } Commissioners.  
N. H. SHEPLEY, }  
J. G. STEWART, Clerk.

Clerk's Office, Raleigh, Fletcher P. O. }  
27th May, 1895. }

## TENDERS

Tenders will be received at the office of the Engineer of the London and Port Stanley Railway, London, Ontario, up to 6 o'clock on SATURDAY, 15TH JUNE, for

### TWO STEEL BRIDGES

over Kettle Creek and Mill Creek. Specifications and profiles may be had on application to the Engineer.

ORMSBY GRAYDON,  
Resident Engineer, L. & P. S. R. London, Ont.

## TENDERS

Tenders will be received up to 6 o'clock on SATURDAY, 15TH JUNE, for the construction of

### Two Stone Culverts and Embankments

on the London and Port Stanley Railway near St. Thomas. Specifications, profiles, &c., may be obtained from undersigned.

ORMSBY GRAYDON,  
Resident Engineer L. & P. S. R.  
London, May, 1895.

## TO CONTRACTORS

Tenders will be received by the Chairman of the High School Board, Gravenhurst, until SATURDAY, JUNE 15TH, 1895, for the erection of a

### HIGH SCHOOL BUILDING

at Gravenhurst. Contractors will be required to give satisfactory security.

Plans and specifications may be seen at the office of the Secretary of the High School Board, Mr. W. R. Tudhope, Gravenhurst, and at the office of

C. J. GIBSON, Architect, Toronto.



## Notice to Contractors

Tenders will be received by registered post, addressed to the City Engineer, Toronto, up to SATURDAY, JUNE 15th, 1895, for the following works:—

### CEDAR BLOCK PAVEMENT

On D'Arcy Street, from Spadina Avenue to McCaul Street.

On Oxford Street, from Spadina Avenue to Augusta Street.

### BRICK ON CONCRETE

On Ossington Avenue, from Queen to College Street, on track allowance.

### CONCRETE CEMENT

On lanes off Wellington Street in rear of Bay Street.

Plans can be seen and forms of tender obtained at the City Engineer's office on and after Saturday, June 8th, 1895.

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.

DANIEL LAMB,  
Chairman of Committee on Works.  
Committee Room, Toronto, June 4, 1895.

## TENDERS

Tenders will be received at this office (where plans and specifications may be seen) up to noon on THURSDAY, JUNE 20TH, for

### Asphalt and Brick Pavements

on Dundas and Richmond streets, London, Ont.

ORMSBY GRAYDON,  
City Engineer.

Ald. Wm. Clenman, Chairman No. 2. Committee.

## CONTRACTS OPEN.

LANARK, ONT.—S. Gemmill has purchased a lot and is preparing to build.

LACHUTE, QUE.—Geo. Hay proposes to erect a new residence at an early date.

HUMBERSTONE, ONT.—An addition will be built to the public school this summer.

EAST ANGU'S, QUE.—The Royal Pulp & Paper Co. will erect a large saw mill here.

KING, ONT.—Mr. Edwards proposes building a residence. Estimated cost \$2,000.

BRISTOL, ONT.—The Baptists are making a move towards erecting a new church.

WYOMING, ONT.—A. McKay is preparing to build his furniture store, which will be 40 x 40 feet in size.

HALIFAX, N. S.—The School Board will probably introduce a system of hot water heating in several schools.

PENETANGUISHENE, ONT.—Chas. A. Nettleton, druggist, proposes building a large drug store on Main street.

ELMVALE, ONT.—The Township Council of Flos propose to erect next year an iron bridge over the river Wye at this place.

EMBRO, ONT.—The abutment of a bridge east of this place has given way, and a new bridge will probably be constructed.

WINDSOR, N. S.—The Windsor Electric Light and Power Co. is offering for sale \$28,000 of debentures. Geo. H. Curry, Secretary.

DARLINGTON, ONT.—Mr. Jos. G. Tangmaid is erecting a country residence to cost in the vicinity of \$5,000. Henry Guy, architect.

ST. STEPHEN, N. B.—The Milltown and St. Stephen Railway Co. is receiving tenders for building 4¾ miles of railway and several bridges.

WINDSOR, ONT.—The City is offering for sale \$37,597.06 of local improvement debentures, tenders for which will be received by C. J. McArthur until the 16th inst.

PRESCOTT, ONT.—Tenders for the purchase of \$6,000 of debentures are invited until the 10th inst. Particulars may be obtained from A. Whitney, Chairman Finance Committee.

NEWMARKET, ONT.—Wm. Binney, architect, is preparing plans for a \$3,500 residence for David Lloyd.—John. A.

Hopkins is adopting the plans of Mr. Binney, for a country residence. Estimated cost \$3,500.—A. W. Evans intends expending \$1,500 on the remodelling of his hotel.

ST. HYACINTHE, QUE.—The Town Council has decided to build sewers on Notre Dame and St. Anne streets.

MAPLE, ONT.—The English church congregation have laid the foundation for a new brick church.—Mr. Kerby is about to put up a large country residence.

SCHOMBERG, ONT.—Tenders are invited for erecting a new Baptist church here.—The Presbyterians propose to expend \$2,000 on proposed improvements to their church.

LIMOILLOU, QUE.—The municipality has succeeded in obtaining an advance of a sum of money sufficient to construct a system of waterworks. The sum amounts to \$55,000.

AURORA, ONT.—Naughton Bros. are about to build a brick building, 68x38 ft. on Yonge street, at a cost of \$3,000.—Mr. Wesley will build a country residence on Yonge street. Estimated cost \$2,000.

KINCARDINE, ONT.—A. M. Williamson, Town Clerk, invites tenders on behalf of the corporation until to-day (Thursday) for the construction of about 15,000 square feet of Silica barytic or granolithic sidewalks.

SARNIA, ONT.—The Board of Trustees of the General Hospital are asking for tenders until Saturday, the 15th inst., for the erection of a hospital building. Plans may be seen at the office of H. G. Phillips, architect.

MANIWAKI, QUE.—The residents are hopeful of securing the erection of a bridge over the Gatineau river at this place, the neighboring municipalities and the Provincial Government having offered financial assistance. The Dominion Government will also be asked to grant aid.

NANAIMO, B. C.—The plans of J. J. Honeyman for the new school building have been accepted by the school trustees, and tenders will be called for at once. The new building will be two stories and basement, built of wood, with a stone and brick foundation. Estimated cost, \$12,500.

ST. JOHN, N. B.—The Common Council have resolved to ask tenders for electric street lighting, and for the purchase of a civic electric light plant.—Tenders will probably be asked by the Council for erecting an iron bridge at Newman's Brook.—The Havelock Mineral Springs Company will rebuild at once.

WHITBY, ONT.—Tenders are invited until Friday, the 7th inst., for the erection of a wing to the Ontario Ladies' College and for supplying complete steam-heating sanitary and electric lighting plants. Plans may be seen at the offices of G. M. Miller, architect, Toronto, or H. B. Taylor, secretary-treasurer of the College.

LONDON, ONT.—The City Engineer is asking for tenders until 6 p. m. on Friday next for building a bridge at Peasant's Mill.—It seems probable that the School Board will get the money required for new school buildings. The amount is \$35,000, a large portion of which is for a new school to replace the present Colborne street building.

PERTH, ONT.—Mr. Lee, representing a syndicate, has been in consultation recently with the town council with reference to establishing waterworks. It is proposed to furnish the town with a system to cost \$60,000, the franchise to be for ten years, the system to be then taken over by the town at a valuation, if the corporation wishes. It is probable an agreement will be reached.

SHERBROOKE, QUE.—Plans have been prepared for the proposed St. Peter's church.—J. B. Verrel, architect, is prepar-

ing plans for a convent to be erected at Megantic for the Sisters of the Congregation of Villa Maria. The building will be 140x45 ft. and two storeys high, built of brick. The same architect is also preparing plans for an extension to Magog College for the Brothers of the Sacred Heart.

VICTORIA, B. C.—It is stated that the Canadian Pacific has withdrawn its objection to the building of a road through Crow's Nest Pass by the British Columbia Southern Railway Company, and that one of the directors of the latter company is now in New York negotiating with a syndicate to build the road. The British Columbia Southern railway has already been voted the Dominion subsidy of \$3,200 a mile for 32 miles, and it is probable that the road will get a subsidy for the entire length.

WOODSTOCK, ONT.—The Town Council has decided to submit a by-law to the ratepayers on Monday, June 24th, to authorize the erection of market sheds to cost \$9,000.—Anderson & Co., of Walkerton, who have recently purchased the business of the James Hay Co., contemplate in the near future to remove their entire plant to this town, and arrangements are being made to enlarge the factory buildings. At an early date it is the intention to erect a large storage warehouse.

COLLINGWOOD, ONT.—Plans and specifications for the enlargement of the pumping and electric light station, and for new roof on original building, are being prepared by Fred. T. Hodgson, architect, Collingwood.—Tenders are invited by the town until Wednesday, the 19th inst., for the steam plant, electrical plant and electrical supplies necessary for the extension of the electric light system. Plans may be seen at the office of G. White-Fraser, consulting engineer, Toronto, and tenders are to be addressed to James Guilfoyle, Chairman Waterworks Committee.

HAMILTON, ONT.—Tenders for lighting the city with 400 arc lights for a term of five years from 1st September next, are invited until Friday, the 7th inst., addressed to T. Beasley, City Clerk. Specifications may be obtained from the City Engineer.—Tenders for building a railroad depot on Hunter street for the Toronto, Hamilton and Buffalo railway are invited until 6 p. m. on Friday, the 7th inst. Plans may be seen at the offices of Wm. Stewart & Son, architects. The building will cost about \$30,000, and it is to be completed before the 23rd of August.—The Trustee Board of the Centenary Methodist church have under consideration the erection of a tower, at a cost of \$5,000.

MONTREAL, QUE.—J. Alcide Chausse, architect, is receiving tenders for six dwellings on Montcalm street, for Mr. Etienne Pelletier, also for one store and two dwellings on Moreau street for Mr. Avile Tremblay.—The Finance Committee has voted the sum of \$117,000 for the excavation at the new east end station, and the work will be proceeded with at once.—The extension of the Bonsecours market, at a cost of \$75,000, has also been decided upon, subject to the report of the City Attorney.—The Fire Committee has decided to ask for tenders, to be received by the 12th inst., for the supply of 10,000 feet of hose.—Dr. Laberge has reported in favor of the establishment of a bacteriological laboratory, and the City Council will be asked to provide the sum of \$4,000 for the purpose.

OTTAWA, ONT.—The Council are taking steps towards securing the construction of the Dalhousie ward drain, for which the sum of \$50,000 has been voted.—The bill to incorporate the Ottawa and Aylmer Bridge Company has been passed by Parliament. The bonding power was reduced from \$25,000 a mile to \$20,000, and the amount for the bridge from

\$500,000 to \$350,000.—The bill to incorporate the Langenburg and Southern Railway Company has also passed.—The Ottawa Electric Railway Company have purchased the Richmond road through the village of Hintonburg, and will build their line to the Experimental farm via this route.—The City Council has given notice of its intention to construct artificial stone sidewalks on Sparks street, to cost \$1,310, and on Metcalfe street, to cost \$434.

WINNIPEG, MAN.—The School Board proposes to erect new school buildings, and invites correspondence from dealers in heating and ventilating apparatus with a view of introducing the most improved system. Information may be obtained by addressing Stewart Mulvey, Secretary-Treasurer of the Board.—The work on the new Springfield road has been laid out by Engineer Macdonnell, and tenders for construction will be invited at once by the local government. The total excavation required is 7,871 yards, including clap drains.—The directors of the Great Northern Elevator Company have decided to proceed at once with the erection of a large cleaning and sorting elevator at this point. A site has been chosen on the north side of the C. P. R. yard on Sutherland street, and as soon as plans have been agreed upon, tenders for the erection of the elevator will be invited.

TORONTO, ONT.—At a meeting of the Separate School Board held last week, the building of a school on Earl street was abandoned, and it was decided to erect a four-roomed school house on the present property on Winchester street, at a cost of \$7,000. Messrs. Post & Holmes were appointed architects. The sum of three thousand dollars voted for the building of a two-room school on Bolton avenue, and Mr. J. W. Hynes was chosen as architect.—The by-laws submitted to the ratepayers on Saturday, to provide \$227,000 for an electric light plant, \$135,000 for a water main to Rosehill reservoir, \$90,500 for new water mains, and \$75,000 for a new intake pipe across the bay, were each defeated by a large majority. It is probable, owing to the urgency of the work, that the Council will endeavor to provide funds for the new intake pipe from some other source.—Mr. B. Gibson, contractor for the new Union Station now being erected, is asking for tenders for stone carving to be done on the building.—The Separate School Board is asking for tenders until the 15th inst. for a supply of coal and wood.—The annual report of the Committee upon Prison Reform of McMaster University recommends the establishment of an industrial home for destitute poor, the removal of the Girl's Refuge to some farming section, where the cottage system might be adopted, and the establishment of a reformatory for habitual drunkards.—At the meeting of the Board of Works held on Monday last the City Engineer recommended the paving with granite of York and Simcoe streets, south of Front street, at a cost of \$7,400, and \$4,640 respectively. Other recommendations were an asphalt pavement on Spadina avenue, from Front to King streets, cost \$16,100, and from King to Queen streets, cost \$26,000, and a concrete sidewalk on the north side of Adelaide street, from Yonge to Bay street, at a cost of \$2,155. A motion was passed by the Board that the City Engineer should recommend a brick pavement on Brunswick avenue.—The will of the late ex-Ald. Murray provides for the erection of four brick stores, four storeys high, at the corner of Queen and Northcote ave.—A new church will probably be erected on Bloor street for St. Paul's Presbyterian congregation, of which Rev. W. A. J. Martin is pastor.—Building permits have been granted as follows: J. Francis Brown, bk. cottage 37 Rosedale rd., cost \$1,500; A. R. Williams, 4-storey bk. fact-

ory 93 Front st. w., cost \$35,000; R. Simpson, 6-storey bk. store s. w. cor. Yonge and Queen streets, cost \$200,000; J. C. Black, 4 Earl st., 2 story and attic bk. dwelling, 10 Madison ave., cost \$4,500; W. H. Lenden, improvements to 67 Poitland st., cost \$1,500; The Cork Co., of Canada, Seaton st., bk. and stone machine shop, 38 Ontario st., cost \$2,500.

**FIRES.**

Roger's & Co.'s woollen mills at Alliston, Ont., were burned on the 31st May. Loss, \$25,000; insurance, \$18,000.—The large store and warehouse of W. A. Charlton & Co., at Lynedoch, Ont., was destroyed by fire last week. Loss on stock and buildings, \$18,000; insurance, \$11,000.—On the 30th of May the saw, planing and shingle mills of R. Stapleton, situated about three miles from Manitowaning, were burned to the ground. Loss \$4,000.—F. W. Freeman & Co.'s large pork packing factory on Rebecca street, Hamilton, was badly damaged by fire on the 2nd inst. The loss is estimated at \$20,000.—The flax mill of Messrs. Livingstone at Tavistock, Ont., was burned on Monday last. No insurance.—The carpenter shop of Geo. Willson and the residence of Frank Sutton, at Simcoe, Ont., were destroyed by fire recently. Small insurance.—The residence of Charles Ostvein, at Hamilton, Ont., has been burned. Small insurance.—A two-storey frame store on Dundas street, Woodstock, owned by J. and T. Grant, was destroyed by fire on the 4th inst.

(Continued on page 4.)

**WILLIS CHIPMAN, B. A. Sc.**

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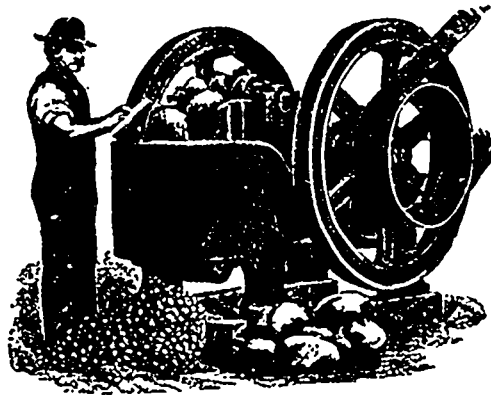
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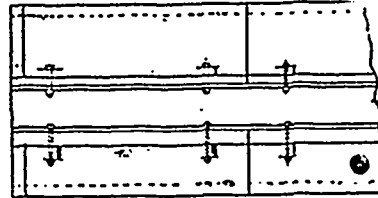
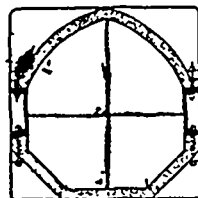
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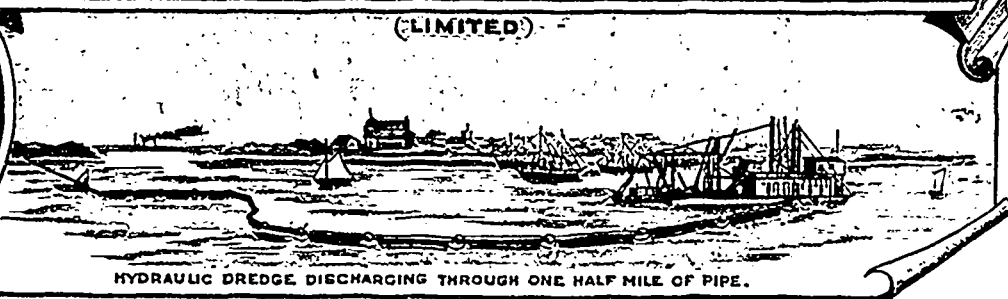
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## MUNICIPAL ENGINEERS, CONTRACTORS AND MATERIALS

Insurance on building, \$1,000. J. T. Rowe, of Aylmer, writes us that the entire building destroyed by fire, of which mention was made in our last issue, was owned by him, his loss being \$5,000. He will commence the erection of a new brick building at an early date.

## CONTRACTS AWARDED.

CORNWALL, ONT. - The tender of Clark & Connolly, of Toronto, for the construction of the Leitch Creek sewer has been accepted by the Town Council.

COLLINGWOOD, ONT.—Contracts for the supplies necessary to complete the waterworks extension have been awarded to the Canada Pipe Foundry, Hamilton, The Kerr Engine Co., Walkerville, and the Doherty Mfg. Co., Sarnia.—The contract for all trades except hot water heating required in the erection of a new brick wing to the Marine Hospital has been let to D. Peterman & Son. Tenders for heating will be asked shortly. Fred. T. Hodgson, architect.

TORONTO, ONT.—The following contracts have recently been awarded by the Ontario Government: Experimental building, etc., at the Guelph Agricultural College, McIntosh & Griffiths, Woodstock, amount about \$10,000; lock-up at Sturgeon Falls, Nipissing, James R. Eaton, Orillia; additions to the lock-up and to the registry office at Bracebridge, Muskoka, James R. Eaton, Orillia; registry office in Minden, Haliburton county, William Clarke, Toronto. Several contracts are yet pending, including that for the Western Dairy school at Strathroy, for which \$9,000 were voted in the estimates last session.—On reconsideration the City Council have accepted the tender of the John Perkins Co. for hydrants, instead of that of the Ontario Engine and Machine Co., whose tender was first accepted.—Seven tenders were received by the Board of Works for a steam road roller, the lowest being that of Aveling & Porter, of Rochester, England, which was \$2,700. The City Engineer will report thereon.—Contracts for concrete sidewalks were accepted as follows: A. Gardner & Co., Leader lane, between King and Colborne streets, 94 cents per foot; west side of Church street, from Wellington to King, \$1.95 per foot; Construction and Paving Company, lane east of Leader lane, \$3.17.

MONTREAL, QUE.—J. Alcide Chaussé, architect, has awarded the following contracts for a residence on De Lorimier avenue for Mr. John Fowle: excavating, O. St. George; masonry and brickwork, A. Cavalier; plastering, Beauchamp & Labelle; painting and glazing, L. N. Desmarais.—Edward Maxwell has awarded contracts for a five-story building, corner Notre Dame and St. John streets, for the Bell Telephone Co. as follows: masonry and brickwork, P. C. Wand; carpenter and joiner's work, Scott & Son; roofing, G. W. Reed; plumbing, Garth & Co.; plastering, John Morrison & Son; painting, W. P. Scott; iron and steel, Hamilton Bridge Co.—A. C. Hutchison, architect, has awarded contracts for a house on Montarville avenue, Westmount, for A. B. Macfarlane as follows: masonry, Geo. Morrison; brickwork, Wm. Lavers; carpenter and joiner's work, Wm. Swan; roofing, plumbing and heating, E. C. Mount & Co., plastering, John Morrison & Son; painting, J. B. Owens; electric wiring, Jas. Geen. Same architect has also awarded the contract for erecting a stone club house at St. Louis du Mile End for the Shamrock A. A. A. to Carroll Bros., general contractors.—Mr. W. McLea Walbank, architect, has awarded contracts for hot water heating apparatus to two houses on St. Urbain street, for Mr. J. G. Kennedy, one of which was let to Drapeau, Savignac & Co., and the other to Jas. Booth.

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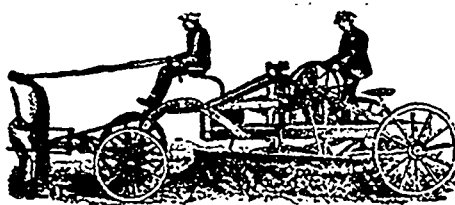
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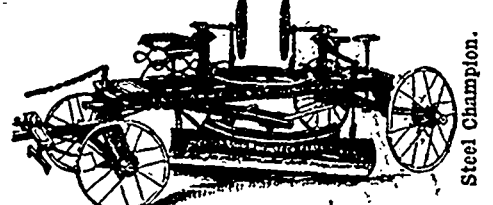
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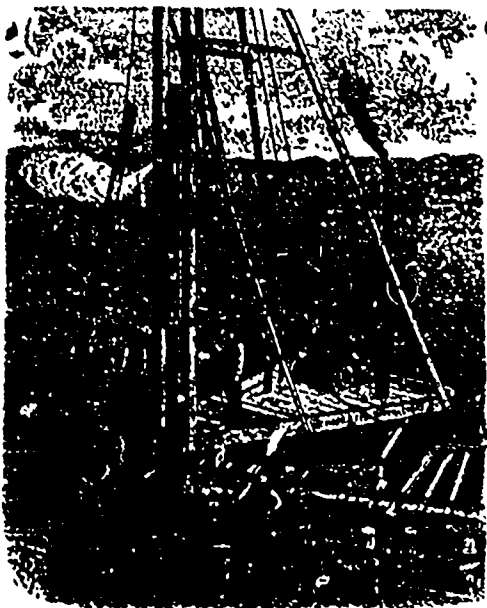
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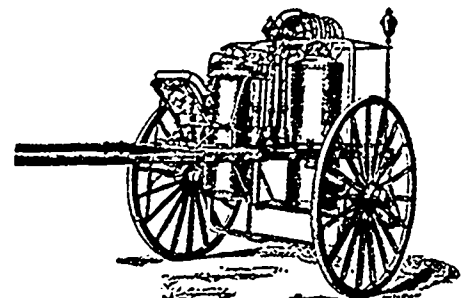
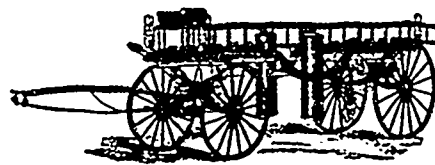
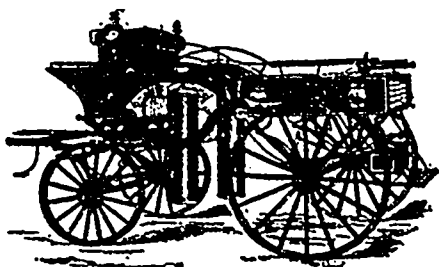
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# MUNICIPAL DEPARTMENT

## SEWAGE DISPOSAL IN ONTARIO.\*

By R. W. THOMSON, B.A.Sc.  
(Concluded.)

We have at present only two filtration areas on any large scale in Ontario—in connection with the Asylum for the Insane, London, and the other the Berlin sewage farm. Plans have also been prepared for a system at Waterloo, where the work is partly finished. Guelph and Galt are considering the putting in of sewerage systems, and will probably have filtration areas in connection. The system at the London Asylum was designed by Col. Waring, and is the Intermittent Downward filtration system. The sewage from

settling ditches at will, or can be all diverted to the broad irrigation tract below by inserting small wooden dams at different points in the carrier.

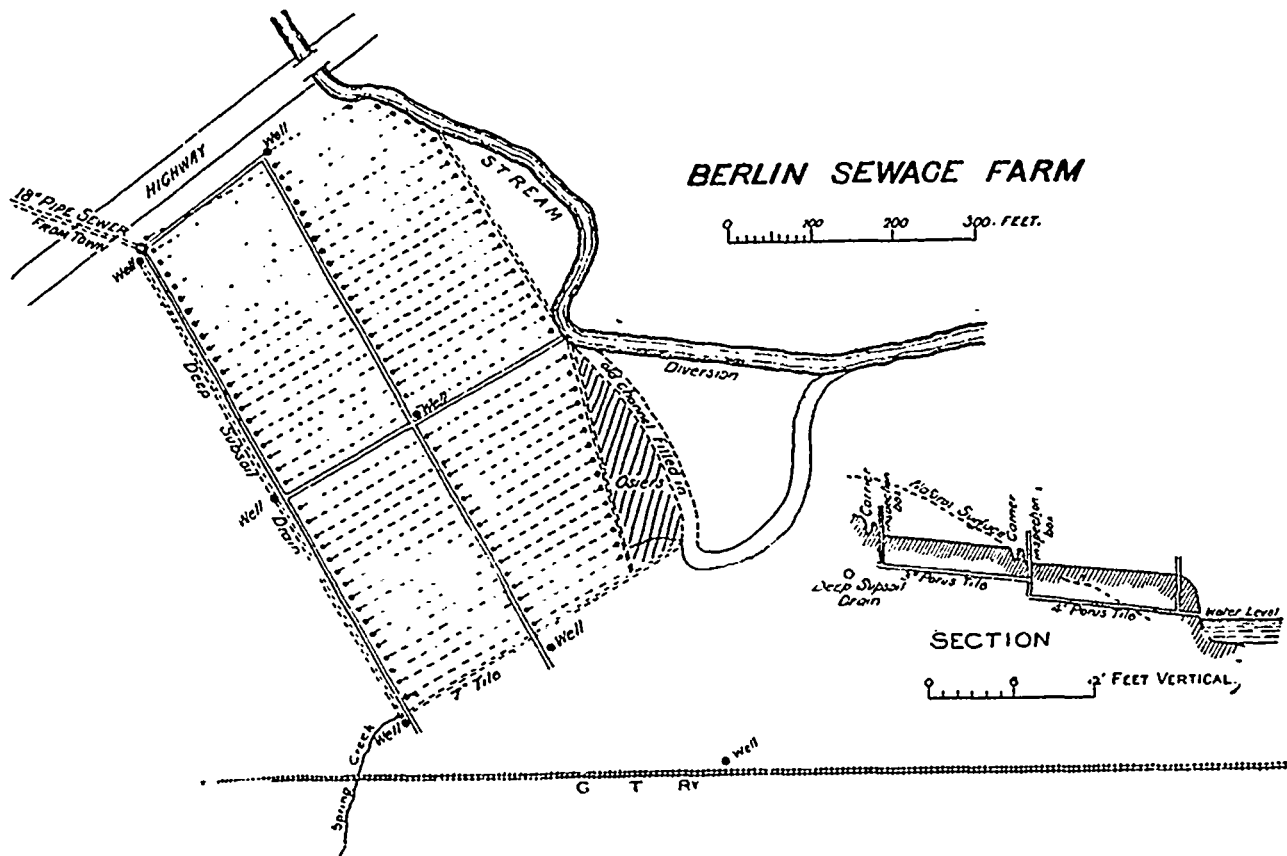
In reply to some questions on the working of the plan, Dr. Bucke, the superintendent of the asylum, writes: "Sewage disposal at this asylum is on what is called the Intermittent Downward filtration system. We use four acres of land for 1,200 persons, and it is ample. The system has been in use here for five years, and has given the most complete satisfaction. The coldest weather gives us no trouble. The sewage in the tank never reaches a temperature lower than, say, 50°, and when thrown into the trenches thaws the ground enough to let it through. We never see the effluent, and so know nothing about it: no doubt it again reaches the surface somewhere as *spring water*, and, no doubt, it is *pure spring water*."

"Using the sewage to irrigate, I grow on the beds between the trenches (i.e., on about two acres of land) a crop worth from about \$800 to \$1,000 a year. The

The farm has been in operation since 1892. Writing under date of January 23rd, 1895, and referring to the Berlin farm, Mr. Bowman says: "This method works very well except in winter, when, on account of the beds having a fall away from the carrier, the sewage runs across the surface in channels.\* During the past summer we have added new ends perfectly level."

Mr. Bowman has kindly sent me a plan of the proposed works at Waterloo, accompanied by the following description: "These beds are about 200 x 132 feet, perfectly level, and separated by embankments formed from the top soil. Tile drains will run across the beds and only ten feet apart, and vary from three to four feet below the surface. This depth is not sufficient to give the best results, but is enough for partial purification, which is all that is required, as the stream receiving the effluent is not used as a water supply."

The great objection to the adoption of sewage disposal by application to land in Ontario seems to be the idea that our climate is too severe in winter for the proper working of such a system, an objection more fancied than real, as the unqualified success of the plant at the London Asylum has demonstrated. The Berlin system must also be considered a



the different buildings is collected in a large tank constructed of brick and lined with cement, having a capacity of rather more than 100,000 gallons. From the tank the sewage is pumped by a six-inch rotary pump to the filtration area, through an eight-inch spiral riveted steel pipe about 1,550 feet long. The filtration area comprises about four acres, laid out in eighteen parallel ditches eight feet wide at top, two feet wide at bottom, and one and one-half feet deep, separated by beds ten feet wide at top. The bottoms of the ditches are all in the same horizontal plane. The sewage is conveyed to these by an eighteen-inch vitrified channel pipe running from the distributing well at one corner of the field in a line at right angles to the settling ditches, and connected to them by T channel pipes. The sewage can be turned into any one or all of the

system is not only economical, but, I am satisfied, could be made to pay enormously if properly carried out for cities, towns, and villages."

The plant at Berlin was designed by Mr. Willis Chipman, C. E., and superintended by Mr. H. J. Bowman, town engineer. The system is Broad Irrigation. There are about twenty acres in the farm, only eight having been graded and underdrained. The sewage in this case is not collected in a tank, but runs directly to the irrigation tracts. These tracts are graded and underdrained to a depth of from three to four feet, this being the maximum attainable on account of the insufficient elevation of the tract above a watercourse into which the drains discharge. The drains are of agricultural tile, in parallel rows sixteen and two-thirds feet apart. Inspection boxes, six inches square, made of plank, are situated at each end and at the middle of each drain. Small wells have also been dug at different points on the farm for the purpose of observing the height of the subsoil water.

success, since it is being followed by a similar one at Waterloo. However, it is only by trial that the details of the system best adapted to the varying conditions of our climate can be discovered. There is no doubt that the success of the London farm is in part due to the exceptionally favorable nature of the soil, but there is also reason to believe that a great element in its successful working in the winter season is the fact that the sewage is collected in a large tank and then discharged over the filtration area before it has time to become very much lowered in temperature, the amount of heat in the liquid due to its temperature above the freezing point being sufficient to thaw the ground and admit of its uniform filtration through the soil, and, were this point in detail adhered to in all cases instead of letting the sewage dribble over the soil as it comes from the outlet, there would probably be less cause to think that our Ontario climate in winter is too severe for successful sewage disposal by land application.

Toronto, March 5th, 1895.

\*Abstract of paper read before the Engineering Society of the School of Practical Science, Toronto.

\*For some reason the beds were constructed with a greater slope than intended by the designer.—R.W.T.

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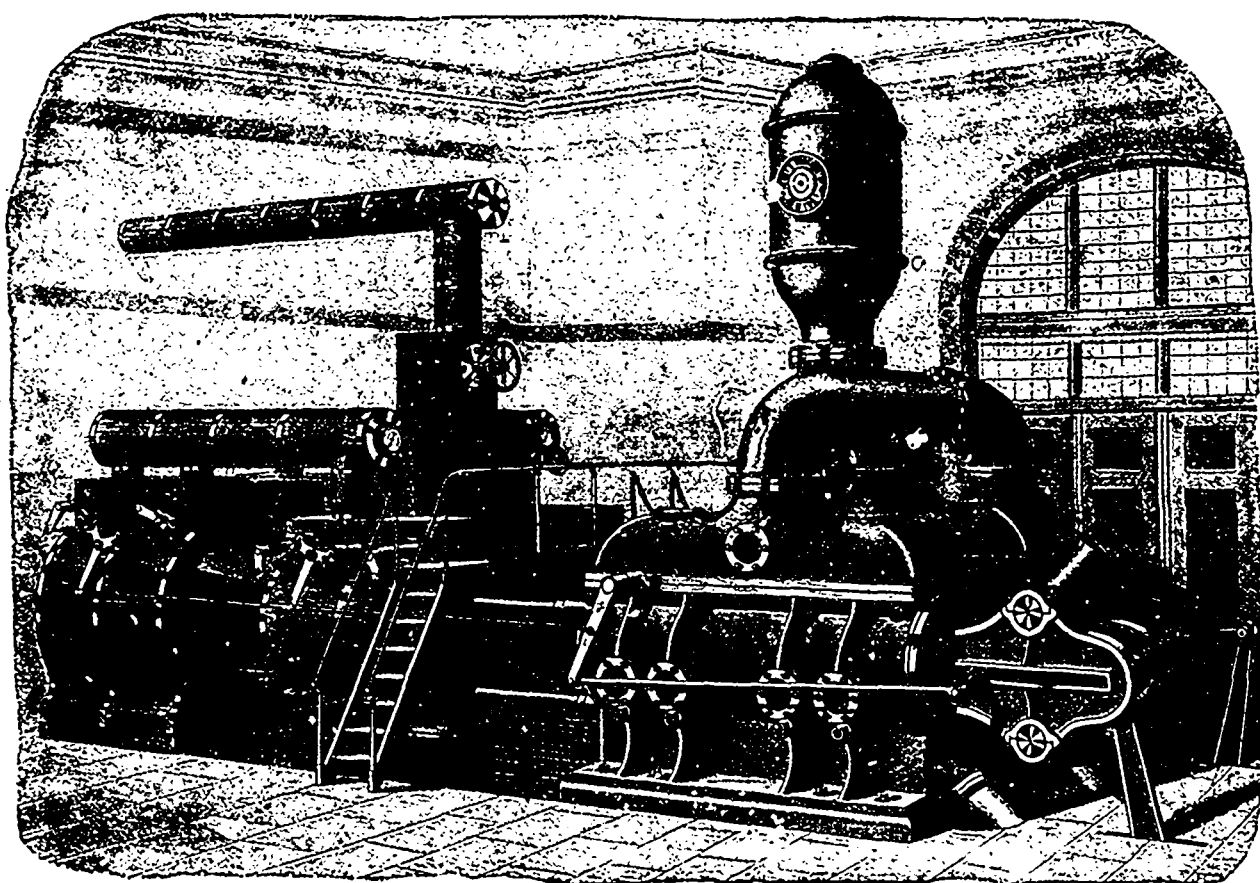
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CONDITION OF THE MARKET.

TORONTO: The situation remains without any change worthy of note, a steady trade being done in nearly all lines. General hardware shows a slight improvement in the past week. The arrivals of imported cement are large, and prices, steady at \$2.60 to \$2.90 for the best Portland. Firebricks are quiet. Large shipments of galvanized iron from stock are being made, and the trade in this line is improving. Glass and paints and oils are also moving freely. Copper has advanced 1/4c. per lb.

MONTREAL: During last week the arrivals of cement at this port were 7,625 barrels, of which 3,475 barrels were Belgian and 4,150 English. Business continues very active for western and local account, and some good sales have been put through at \$1.92 to \$2.05 for English and \$1.70 to \$1.85 for Belgian. The receipts of firebricks for the same week were \$95,000. An improved enquiry is noted for glass, and we quote \$1.15 to \$1.20 for first break and \$1.25 to \$1.30 for second. In other lines there is little change to note.

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