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CANADIAN CONTRACT RECORD

A WEEKLY JOURNAL OF
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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. 7.

DECEMBER 10, 1896

No. 45.

THE CANADIAN CONTRACT RECORD,

PUBLISHED EVERY THURSDAY

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

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

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OUTSTANDING ACCOUNTS

All persons having accounts against the Corporation of the City of Toronto are respectfully requested to send in the same to the proper departments without delay, in order that the same may be passed and paid before the end of the year. By order,

JOHN BLEVINS,
City Clerk's office,
Toronto, December 8th, 1896.



NOTICE TO CONTRACTORS

TENDERS FOR ANNUAL SUPPLIES

Tenders will be received, by registered post only, addressed to the Chairman of the Board of Control, Toronto, up to noon on

Tuesday, December 22, 1896,

for the following supplies for the year ending December, 1897:—

Lumber, Bit Gravel, Sand Cedar Paving Posts, Brass and Bronze Castings, Brass Work for Services, Coal and Wood, Lead Pipe, Stop Valves, Special Castings, Iron and Steel,	Paving Brick General Supplies, Wire Nails, Sewer Pipe, Horse Feed, etc., Cast Iron Pipe, Lubricating Oils, etc., Lumber for W. W. Purposes Rubber Valves, etc., Iron Valve and Stop Cock Boxes, Hydrants, Stone Kerb.
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Specifications may be seen and forms of tender obtained at the office of the City Engineer, Toronto, on and after the 15th December, 1896.

A marked cheque, payable to the order of the City Treasurer, Toronto, for 5 per cent. of the amount tendered for up to \$1,000, and 2½ per cent. of the amount over that sum, must accompany each and every tender, otherwise it will be ruled out as informal.

The lowest or any tender not necessarily accepted.

ROBERT J. FLEMING (Mayor),
Chairman Board of Control.

Toronto, December 8th, 1896.

CONTRACTS OPEN.

SMITH'S FALLS, ONT.—The erection of a new town hall is being advocated.

CHATHAM, N. B.—It is intended to build a new fire engine house in the spring.

ORILLIA, ONT.—The council will probably take steps towards utilizing the power of the Severn river.

FREDERICTON, N. B.—It is probable that an electric fire alarm system for the town will be installed.

BLenheim, ONT.—Mr. Wilson, architect, is preparing plans for a residence for Wm. Snow, to cost \$2,000.

PERTH ONT.—A proposition has been received from Charlebois & Co., of Quebec, to construct a waterworks system here.

PEMBROKE, ONT.—The Pembroke Curling Club are making arrangements to erect a large curling rink, with circular roof.

WIARTON, ONT.—The town has decided to offer a bonus of \$50,000 for the construction of a railway to tap the C. P. R.

VICTORIA, B. C.—The by-law to provide the sum of \$125,000 to construct a

steel bridge at Point Ellice was defeated by the ratepayers.

BELLEVILLE, ONT.—Tenders for the purchase of \$50,000 of debentures are invited by J. P. Thompson, treasurer, until the 15th inst.

ST. JEROME, QUE.—A bill is now before the legislature asking power to borrow the sum of \$60,000 to erect a church and sacristy for this municipality.

EAST TORONTO, ONT.—It is said to be the intention of members of the Massey Harris Co. to erect a summer residence next spring on the height in this vicinity.

WARKWORTH, ONT.—Surveys are being made for the proposed railway between Cobourg and Warkworth, to be built by the C. N. & P. Railway Company.

WOODSTOCK, ONT.—Plans are being prepared for a skating rink and club house by Messrs. Davis, Van Buskirk & Ford. Operations will be commenced in the spring.

ST. JOHN, N. B.—Tenders for the purchase of \$30,000 of school debentures are invited until the 27th inst. Address Edward Manning, secretary Board of School Trustees.

WATERLOO, ONT.—Proposals are asked by F. Colquhoun, Town Clerk, until Friday, the 11th inst., for the purchase of \$5,756 of debentures, payable in thirty yearly payments.

SAULT STE. MARIE, ONT.—It is probable that the Ontario government, in response to numerous applications from the citizens, will make a grant for the erection of a hospital in this town.

SIMCOE, ONT.—Tenders will be received by N. C. Ford, Town Clerk, until the 16th inst., for the purchase of twenty local improvement debentures of \$100.31 each, bearing interest at 5 per cent.

LEAMINGTON, ONT.—J. E. Johnson, Mayor, will receive offers until Thursday, the 17th inst., for the purchase of \$19,500 of local improvement debentures, \$4,500 of waterworks and \$1,500 of High School debentures.

BEECHBURG, ONT.—Tenders close on the 15th inst. for the construction of a wooden bridge over Fraser's Mills Creek. Plans may be seen at the office of J. L. Morris, C. E., Pembroke, and tenders are to be addressed to H. R. Dunn, township clerk.

STRATHALLAN, ONT.—Tenders are invited by James Anderson, clerk of East Zorra, until Tuesday, the 15th inst., for the construction of the open portion of the Grayson drain, in the township of East Zorra.

EDMONTON, N. W. T.—In a recent interview with the Edmonton district railway directors, the Minister of Public Works for the Dominion promised to have a combined railway and traffic bridge built at this point.

ST. CATHARINES, ONT.—Tenders are invited by W. G. Thompson, superintendent

ing engineer, until Tuesday, the 15th inst., for furnishing supplies for the Welland canal for the year 1897, including iron, timber, castings, hardware, fuel, oil, etc.

KASLO, B. C.—Geo. Alexander will put in an electric light plant here.

CHATHAM, ONT.—The City Council has decided to submit a by-law to the freeholders providing for the purchase and operation of a civic electric lighting and power plant. The citizens will also be asked to pass on the question of boring for natural gas.

CALGARY, N. W. T.—The City Council has presented a memorial to the Minister of Public Works requesting the erection of a jail and insane asylum at this place, the extension of the C. & E. railway to the boundary, and the building of the Crow's Nest Pass railway.

ST. MARYS, ONT.—L. Harstone, Town Clerk, writes: "In your issue of Dec. 3rd you say this town has adopted Mr. Newman's plans for a system of water works. No plans are yet adopted, and will not be until after the vote upon the by-law is taken on 4th January next."

OWEN SOUND, ONT.—The officials of the Canadian Pacific railway had an interview recently in connection with the proposed erection of a grain elevator here. It is supposed that the company will ask for a bonus of \$40,000, in return for which they will erect the elevator, enlarge the freight sheds and otherwise improve the buildings.

ST. THOMAS, ONT.—The congregation of the Central Methodist church has decided to accept the board's recommendation for a new church. It will be erected on the present site on Wellington street, and will cost about \$15,000. Work will be commenced in the spring.—The congregation of the Disciples' church are taking steps to enlarge their building.

SPRINGHILL, N. S.—The authorities of the town have now under consideration the construction of a waterworks system, the estimated cost of which is \$115,000.—H. J. Logan, M. P. for Cumberland, is making an effort to have a branch railway from Athol to run into this town. Competent engineers assert that the route is feasible and the grade very great.

LONDON, ONT.—The Street Railway Company will probably construct a bridge across the river. The County Council have decided to recommend to the City Council of London the granting of an option to the street railway company whereby the latter may build a separate structure for their tracks or a new 25-foot bridge to replace the present Kensington bridge.

BROCKVILLE, ONT.—The Dominion Rubber Company will build a factory in this town.—At a meeting of the waterworks commissioners held last week, it was decided to increase the pumping capacity by the addition of a new three million gallon high duty pumping engine.—Offers are asked until Monday, the 21st inst., for the purchase of \$60,000 of debentures of the Brockville Loan & Savings Co. Address D. B. Jones, managing director.

QUEBEC, QUE.—W. D. Baillairge, assistant city inspector, will receive tenders until Tuesday, the 22nd inst., for the construction of a pontoon 120 feet by 40 feet, from plans prepared by the City Engineer.—Mr. F. X. Berlinguet is sending the plans for the granite base of the Champlain monument to Paris, and will transfer them to Mr. Le Cardonnel to perform the important mission. Should the Parisian artist accept the price and plans, the granite can be prepared during the winter.

HALIFAX, N. S.—W. R. and J. A. Shriver have purchased property immediately south of Gordon & Keith's new

building, and will erect thereon a three storey brick building, the plans for which are being prepared by Mr. Whiteway, architect.—It is stated that a wealthy gentleman proposes erecting in this city next spring a handsome residence. The plans have been prepared, and show that the building will cost nearly \$60,000. It will be built of brick, granite and stone, with tiled hallways.

ROSSLAND, B. C.—J. F. McLaughlin, late of Toronto, has purchased the charter of the Spokane & Columbia Telephone Company. He intends to put in a system at Rossland first, then to extend it to Trail and from that point to Spokane.—A charter has been granted to the British Columbia Tunnelling & Developing Company, Limited, the purpose of which is to construct a tunnel through the Red Mountain. This tunnel is to be of sufficient width and height to enable the company to lay double tracks, on which they propose to operate electric cars to convey the ore from the mines.

WINNIPEG, MAN.—Mr. Coste, chief engineer of the Public Works Department, will shortly make a survey of the St. Andrew's rapids, with a view to carrying out the necessary improvements.—The erection of a chapel and vault at Brookside cemetery will probably be undertaken at an early date. Mr. E. L. Drewry is one of the interested persons.—Mr. J. A. Macdonell, engineer of the Public Works Department, has surveyed a site for a proposed bridge over the Assiniboine river, in the municipality of Archie. He will also lay out the site for a bridge over the Little Saskatchewan river, in the municipality of Daly, north of Brandon.

VANCOUVER, B. C.—An engineering party will shortly be sent here by the Dominion government to co-operate with the engineer of the local government in preparing plans for the dyking of the Fraser river.—The lower part of the market hall will be converted into a city hall and offices, at a probable cost of \$3,000.—The by-law to provide the sum of \$60,000 for the extension of the waterworks system was carried by the ratepayers last week.—The projectors of the proposed smelter and refinery will ask the city for a bonus of \$150,000, also for ten years' exemption from taxation and a free water supply. It is understood that the C. P. R. will assist in the establishment of the smelter.

MONTREAL, QUE.—The authorities of All Saints' church have decided to build a new chancel at the east end of the present church.—The Parks Committee of the City Council have approved of the proposal of C. Amyot to build an observatory on the Mountain. The structure will be of wood, 52 feet in height.—Mr. Ridout, of the Department of Railways and Canals, and Mr. Beauchemin, of Sorel, have completed an inspection of the Baie des Chaleurs railway, and will report to the government. It is understood to be the intention to make the road a feeder to the Intercolonial railway.—Mr. Stuart Howard, C. E., of the Road Department, is preparing plans for the construction of a viaduct from St. Henri to the Bonaventure station, to be carried over the G.T.R. tracks. The viaduct will be carried on masonry arches, the space between the crossings being available for warehouses purposes.—The Parks Committee have decided to ask the City Council for the sum of \$8,000 for improving the roads in Mount Royal Park.—Mr. Wolferstan Thomas, a member of the Mount Royal Cemetery Company, proposes that a crematory be established in connection with the cemetery. The question will be considered at the next meeting of the trust.—It is stated that the Grand Trunk Railway Company will ask assistance from the Dominion government for the remodelling of the Victoria bridge at

Montreal. It is the purpose to double track the bridge, and to construct a free highway in connection therewith.—Chas. Chausse, architect, is preparing plans for two houses to be erected on St. Denis street, tenders for which will be invited early in the spring.—C. St. Jean, architect, is preparing plans for reparations to St. Sabine church and also for the manse for same.—Gamelin & Huot, architects, are preparing plans for a cottage to be erected at Varennes for E. G. Simard, M. P.

HAMILTON, ONT.—The City Clerk has given notice that it is proposed to construct pipe sewers on the following streets. Homewood avenue, from Locke street to Garth street, cost \$1,700, Main street, to Sanford avenue, westerly to the end of the present sewer, east of Wentworth street, cost \$320.—The Minister of Public Works has given instructions that the post office in this city be thoroughly repaired.—Wm. & Walter Stewart, architects, have taken out a permit for a brick office for the Westinghouse Air Brake Company, to cost \$3,200.—Mr. Munro, architect, last week requested the Parks Committee to consent to the granting of a patent for the water front at the beach. The Colony Company, which he represents, have a scheme on hand involving an expenditure of \$100,000. It is proposed to fill in the water front from the pier some distance along the beach and to construct a large hotel.—Tenders have been invited for the construction of a fire hall in Victoria Park, from the plans of L. H. Hills, architect.—Steps are being taken by the directors of the Y. M. C. A. to provide the necessary funds for the extension of the Y. M. C. A. building next summer. This addition will provide a swimming bath, educational class rooms, boys' rooms and dressing rooms.—Negotiations are about closed for the purchase by A. D. Stewart of the Palace Saloon and Restaurant. Wm. Noble & Son, the present proprietors, will probably erect a substantial hotel at the corner of Cannon and James streets.—The Hamilton Spectator proposes erecting a new office building.

OTTAWA, ONT.—The Board of Trade have passed a resolution requesting the City Council to correspond with Mr. Rudolph Hering, C. E., of New York, to ascertain on what terms he will submit a report for the proposed drainage system.—J. H. Balderson, Secretary Department of Railways and Canals, will receive tenders until the 22nd inst. for the removal of a portion of the timber superstructure of the East pier at Port Dalhousie, Ont. Plans may be seen at the office of the superintending engineer, St. Catharines.—It is stated that the medical staff of the Protestant hospital have decided to build another hospital, equipped with all modern conveniences. The details of the scheme will be made public in a few days.—The school trustees of Ottawa East have requested the council to raise the sum of \$6,000 by the issue of debentures for the purpose of building a new school house.—The directors of the C. Ross Company, Limited, have decided to rebuild at once on the site of the buildings recently burned. It is probable that a six-storey building of modern design, to cost about \$100,000, will be erected, plans for which are now being prepared by A. M. Calderon, architect.—The Nuns of the Precious Blood propose to erect in this city next spring a large nunnery.—A project is on foot by the Irish Catholic Societies in this city to erect a large hall, at a cost of from \$12,000 to \$20,000. Sketch plans for the building have already been prepared, which show that the structure will be four storeys high. In the basement will be bowling alleys and billiard rooms, the second flat will be a lecture hall and reading rooms, and on the third floor will be committee rooms. A gym

nasium will probably occupy the fourth floor.—It is understood that an Anglican church is shortly to be erected on the Powell property of the Glebe Mission. It has been the intention of the Church of England authorities for some time to erect a church there.—The work of cleaning up the debris of the late fire on Sparks street is being pushed ahead, and preparations for the erection of new buildings of a class superior to those which have been destroyed are already under way. The foundations for the new structure for the C. Ross Co. will be built this winter. The upper portion of the structure will be entirely of steel. E. P. Hartney has also decided to rebuild at once, but plans have not yet been prepared. Holbrook & Sutherland will do the mason work, and J. & G. Low have the contract for the ironwork. Mr. Holbrook will not commence the erection of his building until April.

TORONTO, ONT.—The City Engineer has recommended the construction of the following pavements on the initiative: Brick—Bellevue avenue, College street to Bellevue place; Charles street, Church street to Jarvis street; Arthur street, Dundas street to Arthur street bridge; Jameson avenue, King street to Queen street; Sumach street, Amelia street to Gerrard street; Shaw street, Queen street to Arthur street. Macadam—Spadina avenue, King street to Queen street. Cedar block—Buchanan street, Yonge street to Terauley street; Bellwoods avenue, Queen street to Mansfield avenue; Carlton street, Parliament street to Sumach street.—The cost of the proposed water mains for fire protection in the Exhibition grounds is given as \$6,400.—The construction of sewers on Adelaide street west, from Bay to York street, and on Gerrard, from Yonge to Church, is recommended.—By-laws will be submitted to the ratepayers to provide the sum of \$275,000 for the completion of the city hall and court house, and \$26,000 for laying a water main on Front street, between Church and Simcoe streets.—A sub-committee of the Board of Works have requested the city engineer to report on the building of a foot bridge over the Don, between Gerrard and Queen streets.—Should the Metropolitan Street Railway Company be extended to Lake Simcoe, it is probable that an additional power house will be erected at Newmarket or Aurora. The extension of the line to Richmond Hill has necessitated the improvement of the present power house near Mount Pleasant.—The York County Commissioners meet to day (Thursday) to confer with the Metropolitan Railway Company as to the construction of the new bridge at York Mills. If satisfactory arrangements be made the construction will be proceeded with at once.—The property owners interested have petitioned against the tall wing local improvement works. Asphalt pavement on Carlton st., from Sherbourne to Parliament, concrete walk on Bay, east side, from Adelaide street northward, and a wooden walk on Dufferin street, west side, from Dundas to College.—The Minister of Education has promised to provide a sustenance for the Toronto Technical school in case the city will provide permanent buildings therefor.—The City Clerk has received a sufficiently signed petition against the construction of a concrete pavement on the south side of Bloor street, between Yonge and Jarvis streets.

FIRES.

Taylor Bros. saw and shingle mill at Udon, Ont., has been burned. Insurance \$1,200.—A disastrous fire occurred in Ottawa last week, by which the following buildings were destroyed: C. Ross & Company's building, loss \$225,000; Holbrook's building, loss \$55,000; E. P. Hartney's building, loss \$25,000;

the Masonic Hall, loss \$12,000.—The Farrel House and stables belonging to Robert McLean at Cayuga, Ont., have been destroyed by fire. The insurance is \$1,200.—The mills of the Drummond Lumber Company at Forestdale, Que., valued at \$17,000, were completely destroyed by fire on Friday of last week, the insurance being only \$6,500. Mr. Wm. Mitchell is president of the company.—A. Campbell's saw mill at Callendar, Ont., has been burned. Loss \$2,000; no insurance.—The buildings of the Pioneer Beet Root Sugar Company at Coatcooke, Que., were destroyed by fire on the 2nd inst.—The residence of Mr. McPhail at Lachute, Que., was burned on Friday of last week, together with the store of Mrs. Hampton.—On the 3rd inst. fire consumed the drygoods store of J. R. Ink-sater at Paris, Ont. The building is owned by Messrs. Turnbull & Thompson. Dr. Sing's residence in Thurlow township, near Belleville, has been burned, at a loss of \$3,000. The insurance is \$1,900.—

Two of the buildings belonging to James McNally's cooperage works at Aylmer, Ont., have been destroyed by fire. The loss is \$2,500 and insurance \$1,000.—The Barrow stone block on St. James street, Montreal, was the scene of a disastrous fire on Tuesday last, the damage being estimated at \$500,000. The burned portion was occupied by offices and stores of various kinds.

CONTRACTS AWARDED.

FREDERICTON, N B.—\$40,000 of 4 per cent. debentures have been sold, at a premium of \$105.96 1/4.

OTTAWA, ONT.—J. K. Douglas & Co. have been entrusted with the work of erecting metallic ceilings and side wall finish for the Ottawa Trust & Deposit Vault Co.'s premises.

LONDON, ONT.—The Hobbs Mfg. Co., of this city, will supply two stained glass windows for the nave of Christ church,

(Concluded on Page 4.)

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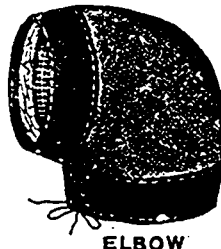
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WRITE FOR PRICES AND CATALOGUE.

Amherstburg.—Tenders for the construction of section "C" of the sewerage works were received as follows: Harding & Leathorn, London, \$10,900; C. Barfitt, London, \$14,863; Simpson & Murray, London, \$14,335; Wm. F. Grant & Co., Toronto, \$9,112.22; J. W. Cawse, London, \$9,973; A. J. Brown, Toronto, \$10,915; Clark & Connolly, Toronto, \$10,180; George D. Cameron & Co., London, \$11,367.89; J. S. Fallows, \$16,272; Geo. F. Webb, Hamilton, \$17,389. The tender of W. F. Grant & Co., Toronto has been accepted. This is over \$1,800 less than was estimated by the City Engineer. The estimate of Mr. Willis Chipman was \$10,980, and of Mr. O. A. Graydon, \$11,000.

MONTREAL, QUE.—J. Rawson Gardiner, architect, has let the contract for alterations to fittings for the Royal Insurance Co. to W. Scott & Son. Same architect has awarded the contract for a mission church at Maussoneuve to A. Strang for all trades.—A. G. Fowler & J. R. Gardiner, architects, have let contracts as follows for fittings to store for the Laing Packing & Provision Co., corner Ontario & Champlain streets: Carpenter and joiner's work, R. Guertin; plumbing, heating and tinsmithing, M. Ballantyne; marble work, Robert Reid.—W. McLea Walbank, architect, has let contracts as follows for reparations and modifications of a house, corner Craig & Victoria streets, for J. D. Davis: Excavating, drainage, masonry and brick-laying, White & Morrison; carpenter and joiner's work, Thos. Ford; plasterer, Knott & Gardiner. Offices of the Lachine Rapid Hydraulic Co., Ltd.—Thos. Ford, contractor; iron work, Canadian Bridge Co.—Building permits have been granted as follows: Three houses to be erected on Berri street for Jos. A. Leguerrier—Jos. Forget & Despatie, architects; masonry contractor, Boucher & Huberdeau. Reparations of a house on Redpath street for C. L. Shorey—architect, A. F. Dunlop; masonry contractor, Wm. Oman; carpenter and joiner's work, Simpson & Peel; brickwork, A. Cowen.

MUNICIPAL DEPARTMENT

SEWAGE DISPOSAL WORKS, HAMILTON, ONT.

The city of Hamilton, which is situated on Burlington Bay, at the head of Lake Ontario, is built on a plateau of slightly elevated ground, winding round the foot of a hilly range which extends from Niagara Falls.

Founded in 1813 by the late Geo. Hamilton, it has had a growth of prosperity rarely equalled in Canada, till now it is a leading manufacturing centre and boasts a population of over 49,000 people. The city, owing to a gentle uniform slope towards the bay, is well adapted for the simple and efficient sewerage system, designed and carried out by the late city engineer William Haskins, M. Inst. C. E. By this system the city is now divided into five independent districts, each district collecting its sewage and storm water into one main outlet, and discharging it into Burlington Bay.

For a number of years the bay, which is about six miles long by two miles wide, was fully capable of disposing of the sewage thus discharged, till recently owing to the increase in the size of the city the waters were gradually getting polluted, especially along the shore line. In the year 1895 matters were brought to a climax by an order from the High Court restraining the city from discharging crude sewage at the east end outlet, on the ground of its being a nuisance; the sewer in this district emptying into an inlet from the bay and not into the bay directly. Whilst the best means for carrying out this order were under consideration the question of the disposal of the entire city sewage naturally suggested itself, and Mr. E. Kuichling, C. E., the eminent sewerage expert of Rochester, N. Y., was engaged by the Council to

report on this subject. After getting the necessary data he presented a very full and elaborate report, the purport of which was the recommendation to collect the dry weather flow of all the city sewage to one station, and then pump it a mile or more out into the deepest part of the bay, considering that the bay was amply capable of receiving the sewage from the present population without rendering the waters offensive.

This solution of the sewage question did not meet with the approval of the city council, the citizens, or the city engineer, there being a repugnance to this mere emptying the sewage into the bay without any treatment at all. The expense of collecting the sewage at one station was also against such a scheme, the estimated cost being nearly \$200,000.

The late city engineer, Mr. Haskins, recommended the purification of the sewage by chemical precipitation, and advised the construction of such works at the outlets of two of the trunk sewers at Ferguson ave. and the east end. A by-law being submitted to the ratepayers, was carried for the construction of this work, the amount voted being \$50,000 for Ferguson ave. outlet and \$35,000 for the east end outlet. It will thus be seen that the character and location of the works are both in accordance with the recommendation of the late city engineer.

The question of applying the sewage to land was gone into, but no site of a suitable nature or at a reasonable cost could be obtained. There was a determined opposition made to the establishment of sewage farms by the surrounding townships.

After careful measurements, the daily dry weather flow of sewage at the east end outlet, where the works are being established, was found to be 500,000 gallons per 24 hours. The sewage is comparatively free from obnoxious components, being largely collected from the rural parts of the city. The works now being constructed consist of a pump house, press house three large precipitation tanks with channel leading

(Concluded on Page 5.)

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from the pumps and mixers, &c. The sewage, after passing through a screen, enters the receiving well, where it is mixed with the proper proportions of lime and sulphate of alumina, and is then

raised by two centrifugal pumps into a channel four feet wide. This pumping is rendered necessary by the outlet of the sewer being almost on a level with the waters of the bay. In passing through

the centrifugal pumps the chemicals are thoroughly mixed by the churning action of such pumps. The sewage is conducted in the channel to the precipitation tanks, which are each 103 ft. by 44 ft., where the sludge settles at the bottom. One or more of these tanks can be disconnected from the rest, when the sludge precipitated at the bottom requires removal, by closing the weirs leading to such tanks. The water is then drawn off by skimmer pipes, after which the sludge is conducted, by means of a small open drain underneath the main channel, to the sludge well. Here any water which may collect on the surface of the sludge is pumped out by a small auxiliary pump, and the sludge itself is then pumped into a press or into wagons direct.

From the press it is turned out in the form of cakes, which are dropped on trucks, running on rails, and thence conveyed outside the building. There are two chemical mixers operated by the pumps, and the effluent after being aerated by falling down steps is conducted by an 18 inch pipe into the bay.

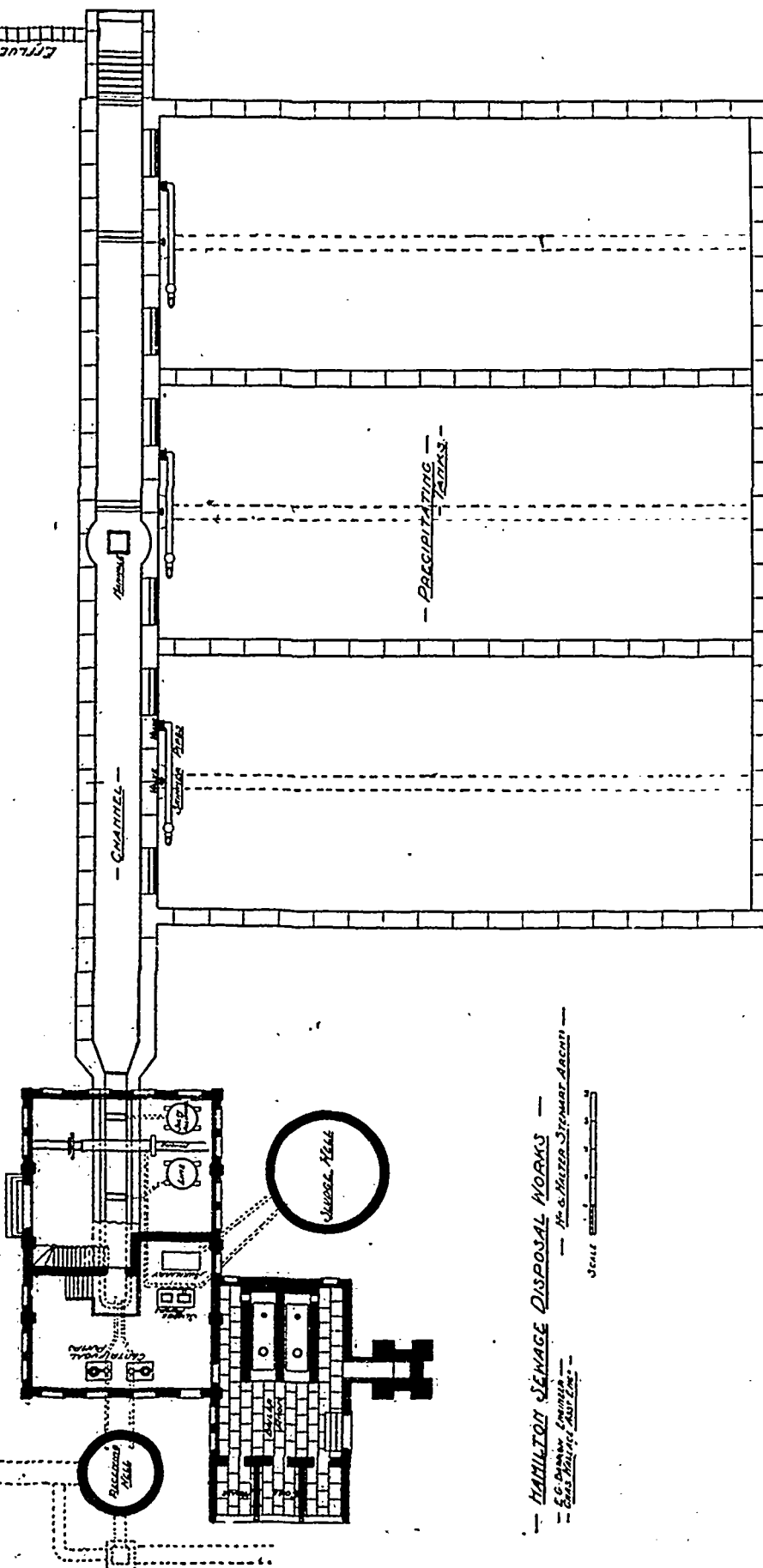
Owing to the fact of the rapid increase in the population of this district, and the building of several trunk sewers in connection with it, the works have been constructed on a larger scale than would otherwise have been considered necessary. The works at the west end will not be nearly so expensive, as the sewage will be treated by gravitation, the outlet being sufficiently high to dispense with the pumps.

It is expected that these works will be among the best on this continent. The present city engineer, Mr. E. G. Barrow, is well qualified for designing and carrying out sewage disposal works, having made himself thoroughly familiar with the different systems both in the United States and Europe. Before laying out the present works he made special visits to the different cities, where similar works have been constructed, and everything which has proved unsuitable has been omitted, and several improvements substituted.

The buildings in connection with these sewage disposal works were planned by and erected under the supervision of Wm. & Walter Stewart, the well known architects, of Hamilton.

Mr. Charles Wallace, C. E., D. L. S., was the assistant engineer in charge of the works, and it is partially due to his instrumentality that they were so correctly and substantially built.

Mr. E. G. Barrow, city engineer, was born at Clifton, Bristol, Eng., on Nov. 7th, 1846. He was for three years an articulated pupil of Mr. Francis Fox, M.I.C.E., chief engineer of Bristol and Exeter Railway, and subsequently became assistant under him on Chard & Taunton branch of that railway. He was on the Midland and Hamilton and North Western Railway, of Canada, and for several years was assistant city engineer under the late Mr. Haskins. He is a member of the Canadian Society of Civil Engineers and an Ontario Land Surveyor.



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 — S. C. Wallace, Engineer —
 — C. E. Barrow, City Engineer —

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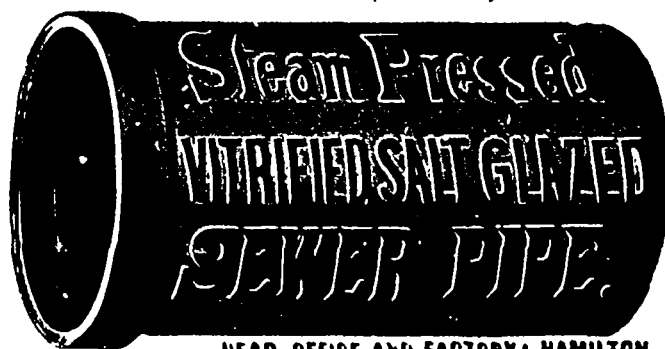
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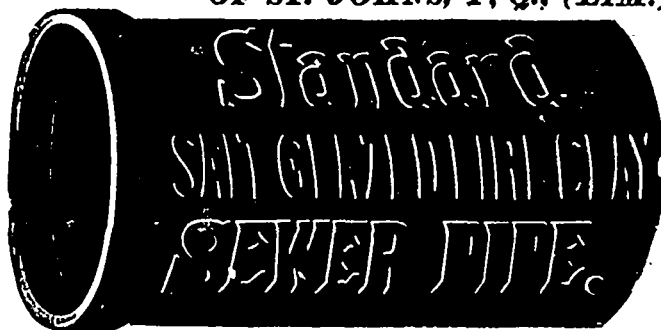
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CONDITION OF THE MARKET.

MONTREAL: General shelf hardware shows considerable activity, but the heavy lines of builders' supplies are quiet. An advance of 5 cents has been made in the United States on wrought iron pipe, which will likely affect the Canadian market. Heavy metals have become firmer, and higher values may shortly rule. English and Belgian cement has advanced 10 cents per barrel, which has been brought about by the cartage charges. A sale of 1,000 barrels of English is reported. There has also been a rise of \$1.50 per thousand on firebricks, the rates now being \$17.50 to \$22.

TORONTO: Trade in builders' supplies is moderate, but for some lines there is an increased demand. Plumbers' supplies are moving with a little more freedom, especially on country account. Cut and wire nails also present an upward tendency, as does also building paper. In the heavy metal trade the demand is scarcely up to the average, dealers purchasing only for immediate requirements. The movement of glass and paints and oils is light.

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Table listing lumber prices for various types of wood, including clear picks, Am ins., 1/2 to 2 pickings, Am ins., 1 inch clear, 1 x 10 and 12 dressing and 1 better, etc.

YARD QUOTATIONS.

Table listing yard quotations for mill cull boards and scantling, shipping cull boards, promiscuous widths, shipping cull boards, stocks, Hemlock scantling and joist, etc.

B. M.

Table listing lumber prices for 1 1/2 inch flooring, dressed, F.M., 1 1/2 inch flooring, rough, B.M., 1 1/2 inch dressed, F.M., etc.

BRICK-M.

Table listing brick prices for Common Walling, Good Facing, Sewer, Pressed Brick, Red, No. 1, f.o.b. Beamsville, etc.

SAND.

Table listing sand prices for Per Load of 1 1/4 Cubic Yards.

STONE.

Table listing stone prices for Common Rubble, Large flat Rubble, Foundation Blocks, Kent Freestone Quarries, River John, N. S., brown Freestone, etc.

OHIO FREESTONE, FROM THE GRAPTON STONE CO.'S QUARRIES.

Table listing Ohio freestone prices for No. 1 Buff Promiscuous, No. 1 Buff Dimension, No. 1 Blue Promiscuous, etc.

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Table listing slate prices for Roofing, red, purple, unslating green, black, Terra Cotta Tile, etc.

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Table listing paint prices for White lead, Red lead, Venetian, Vermillion, Indian, Yellow ochre, Yellow chrome, Green chrome, Paris, Black lamp, Blue, ultramarine, Oil, linseed, raw, by bbl., etc.

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Table listing cement and lime prices for Portland Cements, German, per bbl., London, Newcastle, Belgian, Jossan, artificial, English, artificial, per bbl., etc.

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FINISHING NAILS.

Table listing finishing nails prices for 3/4 inch, per 100 lbs., 2 1/2 to 3 1/2, etc.

CLINCH NAILS.

Table listing clinch nails prices for 3/4 and 2 1/2 inch, per 100 lbs., 2 and 2 1/2, etc.

SLATING NAILS.

Table listing slating nails prices for 5d, per 100 lbs., 4d, 3d, etc.

COMMON BARREL NAILS.

Table listing common barrel nails prices for 1 inch, per 100 lbs., 3/4, 1/2, etc.

SHARP AND FLAT PRESSED NAILS.

Table listing sharp and flat pressed nails prices for 3/4 and 2 1/2 inch, per 100 lbs., 2 and 2 1/2, etc.

STEEL WIRE NAILS.

Table listing steel wire nails prices for Steel Wire Nails, 75c. and 10% discount from printed list.

Iron Pipe:

Table listing iron pipe prices for Iron pipe, 1/2 inch, per foot, 3/4, 1, etc.

Lead Pipe:

Table listing lead pipe prices for Lead pipe, per lb., Waste pipe, per lb., etc.

Galvanized Iron:

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Structural Iron:

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