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CANADIAN CONTRACT RECORD

A WEEKLY JOURNAL

PUBLIC WORKS • TENDERS •
ADVANCE INFORMATION •
AND MUNICIPAL PROGRESS

EVERY THURSDAY

This paper goes every week to 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.

FEBRUARY 6, 1895

No. 1.

THE CANADIAN CONTRACT RECORD, PUBLISHED EVERY THURSDAY

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

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Information solicited from any part of the Dominion regarding contracts open to tender.

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Notice to Contractors

CANADIAN CONTRACTOR'S HAND-BOOK

A new and thoroughly revised edition of the *Canadian Contractor's Hand-Book*, consisting of 150 pages of the most carefully selected material, is now ready, and will be sent post-paid to address in Canada on receipt of price. This book should be in the hands of every architect, tender and contractor who desires to have readily accessible and properly authenticated information on a wide variety of subjects adapted to his special requirements.

Price, \$1.50; to subscribers of the CANADIAN ARCHITECT AND BUILDER, \$1.00. Address

C. H. MORTIMER, Publisher,
Confederation Life Building, TORONTO.

TENDERS WANTED

and Trunk Railway—Union Station

TENDERS FOR UMBRELLA AND VERANDA ROOFING

Sealed Tenders, addressed to Edmund Wragge, Union Station, Toronto, will be received up to 5 p.m. Thursday, the 21st day of February, for the under-mentioned work:—

STEEL FRAMING
GALVANIZED IRON WORK
PAINTING, GLAZING

Plans, specification and form of contract can be seen forms of tender obtained at the office of Messrs. McKim and Symons, Aberdeen Chambers, Victoria Street, Toronto, on and after 7th inst. The company does not bind itself to accept the lowest tender.

L. J. SERGEANT,
General Manager.

Toronto, February 5, 1895.

Send for a copy of the CANADIAN CONTRACTOR'S HAND-BOOK. Price, \$1.50; to subscribers, \$1.00.

TENDERS FOR O'BRIEN'S BRIDGE

Sealed Tenders, enclosing plans and specifications, addressed to me and marked "Tender" will be received up to two o'clock p. m. of

TUESDAY, THE 26TH DAY OF FEB., 1895,

for substructure and superstructure, separately, for a County Bridge in Hastings, about 8 miles north of Belleville.

The superstructure, steel high truss, in three spans, middle span 148 feet and each end span 100 feet long, with 16 foot roadway in the clear.

Each span must safely carry 100 lbs. to the square foot of roadway.

The substructure must be completed by the tenth day of September, and the superstructure by the first day of October next.

Further particulars may be had on application to

WM. R. AYLESWORTH,
County Clerk.

Belleville, Ont., February, 1895.

A FIRST-CLASS MEDIUM FOR TENDERS.

Mr. John Fair, engineer for the County of Brant, Ont., writes: "I wish to say in behalf of the CONTRACT RECORD that I have found by a practical test, it to be a first-class medium in which to advertise for tenders for construction work, and know of no publication which gives as good results for the same charge."

VITRIFIED BRICKS.

What is a vitrified brick? Webster says, "To vitrify is to convert into glass by fusion, or the action of heat, as to vitrify sand and alkaline salts. Vitrifiable—Capable of being vitrified, or converted into glass by heat and fusion, as flint and alkalies are vitrifiable." "Fixed alkalies, soda, and potash, volatile alkali, ammonia."

Hence, a clay to be vitrified must contain sufficient vitrifiable properties to bring about a thorough fusion of its different component parts, converting the whole into one homogeneous mass. A vitrified brick being converted into glass, should, like glass, be impervious to water or acids, and a brick that will absorb water in the slightest degree is not vitrified.

The objection will naturally be raised that a glassy brick is too brittle, and will not stand concussion incident to heavy traffic; but if the bricks are well annealed after being vitrified, instead of being brittle they will be very tough and will stand concussion far better than bricks that are not vitrified.

We hear every day the term vitrified applied to hard-burned bricks. This is a misapplication, as there is a vast difference between a hard-burned and a vitrified brick. There are quantities of clays that cannot be vitrified, for the simple reason that they have not the chemical properties necessary to produce vitrification.

For prices of building materials see page 8.

PUBLISHER'S NOTICE.

OWING to increasing demands on the reading and advertisement pages of the CONTRACT RECORD, it has been found necessary to increase the number of pages from four to eight. At the same time the width of page has been reduced to correspond to that of the monthly edition.

It is proposed to employ the additional space now at our disposal in publishing more complete particulars of new building enterprises throughout the Dominion, contracts awarded, and information bearing on improved engineering and contracting methods.

We are encouraged by the appreciation expressed by municipal officials of the information published in the "Municipal Department" of the CONTRACT RECORD, to devote more space and attention to this feature of the paper. Contributions from municipal officials, on such subjects as public drainage, water supply, fire protection, lighting, street improvement, &c., are cordially invited.

Information is also especially invited concerning proposed building enterprises, of all kinds, whether public or private, in any part of the Dominion, including advertisements for tenders for the carrying out of such works. We have in our possession numerous testimonials similar to the one printed on this page, as to the value of the CONTRACT RECORD as a medium of communication with the leading Canadian contractors in all lines. An advertisement in the CONTRACT RECORD will bring as good results at much less cost as advertisements inserted in half a dozen ordinary newspapers.

A BRIDGE 836 FEET HIGH.

The highest bridge of any kind in the world is the Loe River viaduct, on the Antofagasta Railway in Bolivia, South America. The place where this highest railway structure has been erected is over the Melo rapids, in the Upper Andes, and is between the two sides of a canon, which is situated 10,000 feet above the level of the Pacific. Counting from the surface of the stream to the level of the rails, this celebrated bridge is exactly 836 feet in height. The length of the principal span is 80 feet, and the distance between abutments (total length of bridge) is 802 feet. The largest column is 314 feet 2 inches long, and the batter of the pier what is known to bridge builders as "one in three." The gauge of the road is 2 feet 6 inches, and trains cross the bridge at a speed of thirty miles an hour.

CONTRACTS OPEN.

NORWICH, ONT.—A new public school building will be erected here, to cost \$8,000.

STANLEY, N. B.—W. L. McDiarmid is making preparations to erect a cheese factory.

HUNTINGDON, QUE.—The Council will probably purchase a new steam fire engine.

PRICEVILLE, ONT.—A new manse will be erected in connection with the Presbyterian church.

RENFREW, ONT.—The Mayor advocates the erection of a new town hall and post-office building.

VICTORIA, B. C.—The erection of several large business blocks is in prospect for the present year.

PAKENHAM, ONT.—The congregation of St. Andrews' church are considering the erection of a new edifice.

FREDERICTON, N. B.—D. W. Hoegg & Co. have decided to rebuild their canning factory recently burned.

NANAIMO, B. C.—A stone court house to cost \$35,000 will probably be erected from plans of F. M. Rattenbury, architect, Victoria.

BELLEVILLE, ONT.—George Wallbridge has purchased the Sills block on Front street and will make extensive improvements at once.

HORNBY, ONT.—A new Presbyterian manse will probably be erected here. Messrs. Tusker, Kennedy and Hornby are canvassing for subscriptions.

SEAFORTH, ONT.—Tenders are invited until the 15th inst. for erecting a brick school house in School Section No. 6, Tuckersmith. Address Wm. G. Broadfoot, box 100, Seaforth.

PORT ELMSLEY, ONT.—The Presbyterian congregation of Oliver's Ferry will build a new church, over \$1,000 having already been subscribed. Work will be commenced early in the spring.

KNOWLTON, QUE.—The by-law authorizing the construction of a system of waterworks was carried by the ratepayers on Tuesday of last week, and the work will now be carried out without delay.

SARNIA, ONT.—The erection of a large hotel just below the present Grande Pointe club house on the St. Clair Flats, is said to be receiving consideration. The names of the promoters of the enterprise have not transpired.

THORNDALE, ONT.—Tenders are invited until the 1st of March for the erection of a brick school house on lot 1, concession 9, London Township. Plans at the residence of W. B. Harding, lot 15, concession 1, Nissouri.

MILTON, ONT.—At a meeting of the Halton County Council held last week it moved that a special committee be appointed to report at the next meeting of the council on the question of erecting a county house of industry.

COLLINGWOOD, ONT.—The Municipal Council are asking for tenders for the supply of a large quantity of square timber for repairing the town wharf and for 152 pieces of heavy square timber for crib over intake pipe of waterworks. A large amount of hemlock and tamarac plank is also required for the wharf.

YARMOUTH, N. S.—Tenders are invited by Geo. G. Sanderson, Chairman Building Committee, until Saturday the 9th inst., for the erection of a brick and stone church at the corner of Parade and Second streets. Plans may be seen at the offices of H. H. Mott, architect, St. John, and Geo. G. Sanderson, of this town.

BEAUHARNOIS, QUE.—A meeting of the County Council was held recently for the purpose of further considering the erection of a new manse, and a sum of \$10,000 for the

improvement and extension of the water course from Lake St. Francis through to St. Louis de Gonzague and Ormstown. Addresses were delivered favorable to the scheme, but no definite action was taken.

KINGSTON, ONT.—John McKay will erect a new store on Brock street.—Mr. Booth, C. E., is drawing plans for an English church, to be built in the parish of Rev. W. J. Bate at Sydenham.—The Chairman of the Waterworks Committee estimates that the sum of \$20,000 will be required for improvements to the waterworks system, including the purchase of a new pump.

PRESTON, ONT.—Mr. Cherry has had plans prepared for the rebuilding of his flour mill and for a large warehouse.—Mr. H. J. Powell, architect, Stratford, Ont., has prepared plans for an opera house to be erected here between the present date and the 1st of August. Tenders for the construction work have already been invited. Mr. Otto Homuth, of this town, is the promoter of the enterprise.

NORTH AUGUSTA, ONT.—Tenders are invited by R. L. Joynt, Chairman Building Committee, until Wednesday, the 20th inst., for the hot water heating and plumbing of the House of Industry now being erected near Athens, also for building a frame barn with stone basement in connection therewith. Plans may be seen at the offices of G. A. Allan, architect, at Brockville and Isaac C. Alquire, at Athens.

NEW WESTMINSTER, B. C.—At a recent meeting of the Surrey ratepayers a resolution was adopted requesting the Legislature to pass an act amending Act Chapter 16, 1894, in such a manner that in the event of the failure or inability of the city to proceed with the construction of the combined traffic and railway bridge that the Chief Commissioner of Lands and Works be authorized to have plans prepared, invite tenders, and award contracts for the construction of a traffic bridge at New Westminster.

WINNIPEG, MAN.—The special committee appointed by the Masonic bodies to take the preliminary steps in connection with the erection of a Masonic temple have commenced a canvas for the necessary funds. The proposition from the Y. M. C. A. that a building be erected jointly by the association and Masons is not likely to meet with approval. It is the desire of the Masons to have a building exclusively for their own members.—Osborne street bridge will probably be repaired at a cost of \$7,000.

HALIFAX, N. S.—It has been decided to tear down the present Victoria Infirmary building on Barrington street and erect in its place a handsome brick and stone structure. The new building will be 40 x 90 feet, and will cost \$25,000.—The erection of a public slaughter house has been agitated for some time by the Board of Health, and a committee of the City Council has recommended that authority be asked from the Legislature to borrow the sum of \$15,000 to erect a suitable building.—The Council will probably purchase another chemical engine.

MONTREAL, QUE.—A new school is to be erected by the Catholic Board of School Commissioners, in place of the present one on Cadieux street, near Roy. The building will be erected by the parish St. Louis de France, and will be of brick with stone foundation, and three storeys in height.—The Road Committee has recommended that the sum of \$10,475 be granted to the City Surveyor for paving the Brock street tunnel.—At the last meeting of the Council of the municipality of St. Louis du Mile End, it was decided to light the municipality either by gas or electricity and a committee was appointed to secure tenders.—It is expected that next summer the new parish church of St. Louis de France will

be completed. The total cost will be in the vicinity of \$300.

HAMILTON, ONT.—Wm. Stewart & Son, architects, tenders until noon on Monday, the 12th inst., for the erection of a Sunday school building and for extensive alterations for Centenary Methodist church building.—At the last meeting of the Jail and Court House Committee of the City Council, a sub-committee was appointed to secure plans and an estimate of the cost of constructing a new jail.—The City Engineer will recommend the Council to expend a sum of \$28,054 in the construction of sewers as follows: Robinson street, \$7,300; Wood street, \$4,600; Sanford avenue from Cannon street to the Mount, \$13,990.—The Victoria Yacht Club has been granted permission by the City Council to erect a new club house at the foot of Wellington street.

OTTAWA, ONT.—It is reported that C. P. R. engineers will shortly complete the survey for the unfinished portion of the Montreal and Ottawa road west of Point Fortune, with the intention of pushing construction work as soon as weather permits.—The cost of constructing an asphalt roadway on Bank street for which tenders are now being asked is estimated at \$25,646.—A meeting of the Road and Bridges Committee of the City Council has been called for the purpose of making preparations for the opening of the new Hurdman's bridge. Tenders will likely be called for immediately.—The Winter Trotting Club will probably erect a permanent floating house and stables at Leamy's Lake.—The City Engineer is preparing his annual report on the waterworks system of the city. In it he will recommend an expenditure of \$42,000 on enlargement of mains and new hydrants. The attention of the Council is also drawn to the fact that in the near future it will be necessary to secure additional power for the pumping house.

TORONTO, ONT.—The Kemp Manufacturing Co., of Gerrard street east, are opening up a new department for the manufacture of granite ware, and asking exemption from taxation on the buildings which they propose to erect.—The Parks and Gardens Committee have decided to call for tenders for the erection of a bridge across the lagoon at Island park. The work having already been authorized. Tenders are to be for wooden or iron structure.—The necessary improvements to the Queen's Park are again being considered by the Council, and an interview has been arranged with Hon. Mr. Harty, Commissioner of Public Works, with a view to arriving at a settlement regarding the amount of cost to be borne by the Government and the city. The work will cost upwards of \$25,000.—The Council are taking steps regarding the selection of a site for the proposed hospital for consumptives.—A proposal is being considered by the Council to build a bridge over the Don at the foot of Cherry street. Its erection is said to be very desirable.—The Parkdale Curling Club are desirous of securing a large lot in Parkdale, with an area of 30,000 square feet. It is the purpose to erect a new building. The secretary is W. Webb, jr., 162 Jameson ave.

FIRES.

The residence of Julien Guimond, at St. Louis, N. B., has been burned. No insurance.—The building occupied by the Peoples Bank of Halifax, at Edmunston, N. B., was destroyed by fire on the 1st inst. Insurance on building, \$2,000.—Gibb, Franchoy & McLaren's chemical works at Basin de Lievre, Que., were entirely consumed by fire a few days ago. Loss, \$20,000; insurance, \$8,000.—The flax mill at Elora, Ont., has been burned. The building was owned by the Grand

Rivor Manufacturing Co.—The Queen's avenue Methodist church at London, Ont., together with the Wesley hall, was totally destroyed by fire on Saturday last. The loss will reach \$50,000, the pipe organ alone being valued at \$9,000. Insurance, \$26,000. Reconstruction will be commenced as soon as arrangements can be completed.—The Villa hotel at Stonewall, Man., and three adjoining residences were burned on Saturday last. The buildings were owned by L. A. Nares, of Winnipeg. Loss \$8,000; small insurance.—W. L. Hibbard's saw mill at Farnham, Que., was destroyed by fire on Tuesday last. The electric light plant, situated in the building was also burned.—The Great Northwest Central Railway roundhouse, at Chater, near Brandon, Man., has been burned. The village of Coaticook, Que., was partially destroyed by fire on Thursday of last week, the following buildings being burned: Webster's building, Bachand's block, T. T. Shurleff's block, Cleveland block, and Francoeur's dry goods store. The loss will reach \$70,000, half of which is covered by insurance.—The residence of J. Lincoln, of Sparta, Ont., has been burned.—H. C. Ree's lumber and stave mill at Woodslee, Ont., was destroyed by fire on Tuesday last. Loss, \$7,000; insurance \$3,000.—At Kingsville, Ont., on the 5th inst., fire destroyed the Conklin, Dunlop and Andrew Wigle's blocks. Loss, \$20,000; mostly covered by insurance.

CONTRACTS AWARDED.

MONTREAL, QUE.—Mr. C. St. Jean has awarded the contract for the erection of a Presbytery at St. Mathias, P. Q., to A. Casavant, of Sorel, P. Q., for all trades.

GUELPH, ONT.—R. Mahoney & Son have secured the contract for the erection of Ald. McHardy's block of five houses on Glasgow street. The cost will be about \$6,000.

AMHERST, N. S.—Rhodes Curry & Co. have been awarded a contract by the Dominion Coal Co., for 300 cars. They have also received an order from the Dominion Atlantic railway for 13 box cars of the latest pattern.

TORONTO, ONT.—The contract for a new fence in the Rosedale ravine, through the St. James cemetery lands, has been awarded by the Parks and Gardens Committee to C. H. Clark, of Dowling ave., at 42 cents per lineal foot. The total cost will be about \$690.

HALIFAX, N. S.—Samuel Marshall has been awarded the contract to build the new structure for the Deaf and Dumb Institute. The building will cost \$43,000. The other tenderers were Messrs. Brookfield, Cawsey, Keefe and McInnis & Son. Work on the new building will be commenced at once.

BUSINESS NOTES.

Valuable stone quarries are said to have been discovered, at St. Raymond, Que.

Matheson, Cameron & Matheson is a new firm of contractors and masons in Montreal.

J. B. Tremblay & Co., sash and door manufacturers, Montreal, have commenced business.

The plant of the Hamilton Bridge Company will be offered for sale by public auction on February 18.

H. O'Brien and W. J. Ryan have formed a partnership in Montreal as painters, under the style of H. O'Brien & Co.

A statement of the affairs of Bowman & Moore, hardware merchants, Hamilton, show liabilities of \$30,522.73 and assets of \$54,197.82. T. H. Pratt has been appointed assignee.

The new C. P. R. cement works at Vancouver, B. C., have commenced operations. They have a capacity of 600 barrels a week, and are under the management of S. Warsap.

F. P. O'Leary, of Buffalo, is said to have sold to Hannaford Bros., of Hamilton, Ont., the sole right to manufacture his patent plastering cement in Ontario, Manitoba and British Columbia, and the latter will establish factories for this purpose at an early date.

The Montreal Quarry Co., (Ltd.), applying for incorporation for the purpose of acquiring quarries and quarrying manufacturing building stone. The applicants are P. Alex Peterson, C. E., P. Lyall, D. A. McCaskill, W. G. Reid and George McDougall, all of Montreal. The capital stock will be \$200,000.

CANADIAN SOCIETY OF CIVIL ENGINEERS.

The annual meeting of the Canadian Society of Civil Engineers was held on January 24th and 25th. There were present Messrs. Stuart Howard, N. McNab, R. M. Hannaford, W. McLea Walbank, A. Brittain, E. A. Stone, Granville C. Cunningham, T. R. Henderson, E. S. M. Lovelace, G. de G. Languedoc, J. W. Lesage, E. de B. Leprohon, J. G. McGregor, E. Marceau, James Ewing, Harry Nelson, P. A. Peterson, K. W. Blackwell, R. Bickerdike, Jr., Cecil B. Smith, John Kennedy, J. H. Antliff, Duncan McPherson, G. H. Duggan, P. W. St. George, J. M. McCarthy, F. R. Redpath, C. J. Armstrong, E. P. Hannaford, J. M. Shanly and H. J. Sproule, of Montreal; Thos. Breen, L. A. Vallée, A. Rhodes and E. A. Hore, of Quebec; Hugh D. Lumsden and Henry A. Gray, of Toronto; J. A. Wilde, of Sault Ste. Marie; R. L. Sheraton, of Boston; E. E. W. Dodwell, of Halifax, and M. J. Butler, of Deseronto.

Mr. P. A. Peterson was in the chair. The minutes of the annual general meeting held on the 9th and 10th of January, 1894, were read and approved. The following gentlemen were appointed scrutineers of the ballot for the election of officers and members of council: Messrs. R. N. Hannaford, E. S. M. Lovelace and E. A. Stone. The following were appointed scrutineers for the ballot of the nominating committee: Messrs. W. McNab, F. R. Henderson and R. Bickerdike, Jr. The President then announced that two excursions had been arranged for and that the members could go on whichever they preferred. A dinner had also been arranged for in the evening and the Secretary took the names of those who wished to attend and the meeting then adjourned to Friday the 25th, at 10 a.m.

The following day the convention reopened with Mr. P. A. Peterson in the chair, and the Secretary, Prof. C. H. McLeod read the report on the work of the Society during the past year. It was moved by Prof. Bovey, seconded by Mr. Dodwell that the report be amended so as to include the names of the Committee on "An International Gauge," and that it be adopted and printed in the transactions of the Society.

In the absence of Mr. Macdougall, of the Committee on Professional Status,

Mr. Walter Shanly was requested to read the report of the committee appointed to consider the advisability of making the Society a close corporation. No special recommendations were made in the report but a general recommendation. Mr. Macdougall found that in Chicago and other places that the recommendations made here were not favorably received by other corporations and so the committee had agreed in giving this in very general terms. Mr. Dodwell said the subject was of most vital importance to the Society and the profession at large and regretted that the time at the disposal of the committee had been too short to have a bill prepared to be presented and discussed at this convention. It was moved by Mr. Shanly, seconded by Mr. Dodwell and resolved "That the report of the Committee on Professional Status be received and the Committee be continued." Some discussion followed as to whether power should be given to the Committee to obtain legal advice, and it was finally moved by Mr. M. J. Butler seconded by Mr. Thos. Drummond. "That the Committee on Professional Status be continued and that they prepare a draft bill for a close corporation to be submitted to the Council at the earliest moment. That the Council be authorized to secure counsel's opinion on such bill if in their judgment they think advisable." An amendment was made to this to the effect that the opinion of the members be first secured and then that the committee proceed with the work of formulating bills of incorporation. Being put to vote this amendment was carried.

In the afternoon session of the 25th the following were elected officers and members of Council:—President, Thos. Monro, Coteau Landing; 1st Vice-President, Herbert Wallis, Montreal; 2nd Vice-President, Martin Murphy, Halifax; 3rd Vice-President, Wm. T. Jennings, Toronto; Treasurer, K. W. Blackwell, Montreal; Secretary, C. H. McLeod, Montreal; Librarian, William McNab, Montreal.

Council—H. T. Bovey, D. MacPherson, W. J. Sproule, J. M. Shanly, G. C. Cunningham, Montreal; H. D. Lumsden, J. Galbraith, Toronto; J. D. Barnett, Stratford, Ont.; R. Surtees, Ottawa; W. G. Thompson, St. Catharines, Ont.; H. N. Ruttan, Winnipeg; H. B. Smith, Vancouver; L. A. Vallée, Quebec; P. S. Archibald, Moncton, N. B.; C. E. W. Dodwell, Halifax.

ARCHITECTURAL COMPETITION.

Jos. Ling & Bro., 312 Main street, Dallas, Texas, invite architects to submit plans for a three-story and basement building to be erected in that city, the cost not to exceed \$35,000. The first prize will be \$150, the second \$100 and the third \$50, the author of the design awarded first place to have the preference of superintending the work.

Send for a copy of the second edition of the CANADIAN CONTRACTOR'S HANDBOOK, containing 150 pages. Price, \$1.50; to subscribers, \$1.00.

METAL AS A BUILDING MATERIAL.

It is well within the memory of many persons when metal as a building material was practically unknown. But within a few years building has been almost revolutionized by the use of metal in various forms and for various purposes. Iron beams, columns, girders, rafters, and window sashes have come into use, and now we are to have as a regular addition to our list a great variety of stamped out sections. These have heretofore been made mostly of galvanized iron or some composition of the spelter sort, or, in fine and high-priced work, bronze has been employed. Steel is, however, found to answer all demands far better than any other metal used for this purpose. Door and window casings will be made of metal, and, indeed, almost all parts of a house may be constructed of something besides wood. With paper-pulp doors and floors, metal frames and finish, slate or tin roofs, and Portland cement or concrete walls, our houses may in time come to be actually fireproof, as they have for a long time unjustly claimed to be.

The aluminium process for the decoration and preservation of iron and steel is intended to take the place of nickeling, tinning and coppering. The coating leaves the sharpness of the outline unimpaired, and adheres close to cast and wrought iron work.

A correspondent of Indian Engineering writes that engineers are again coming to the conclusion that red lead and linseed oil is the best paint for iron work, and he refers to the condition of the old Hammer-smith bridge, the iron of which, after more than six years' service was as good as new. Even those parts inaccessible to the brush, and therefore not painted since the time of erection, were quite uncorroded.

J. McDOUGALL, C. E.,
ENGINEER OF THE COUNTY OF YORK
GENERAL MUNICIPAL ENGINEER
Consulting Engineer for Municipalities in regard to Electric Railway and other Franchises.
Specialties: Bridges, Foundations, Electric Railways, and Roads. Surveys made; Plans, Specifications and Agreements prepared, and work superintended.
COURT HOUSE, - TORONTO.

JOHN D. EVANS, O.L.S.
MEM. CAN. SOC. C. E.
LAND SURVEYOR
Civil Engineer : Architect
and Patent Collector.
Special attention given to Consulting and Municipal Work.
GRASS' BLOCK, FRONT ST., TRENTON, ONT.

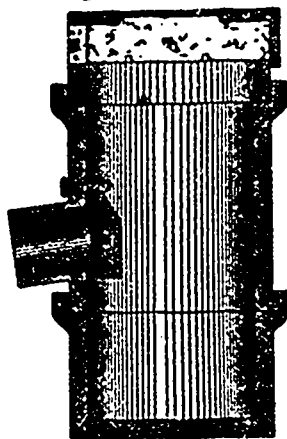
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C. E. AND M. E., M. CAN. SOC. C. E.,
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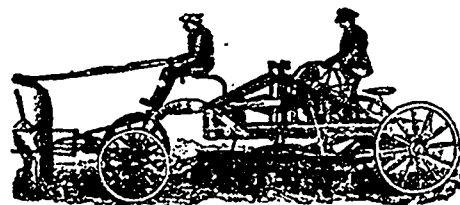
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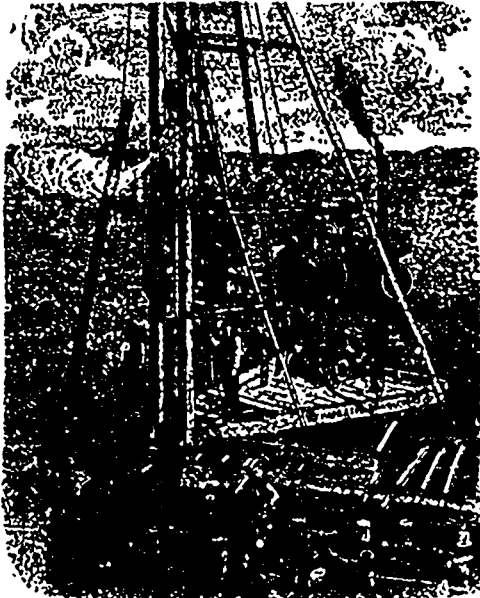
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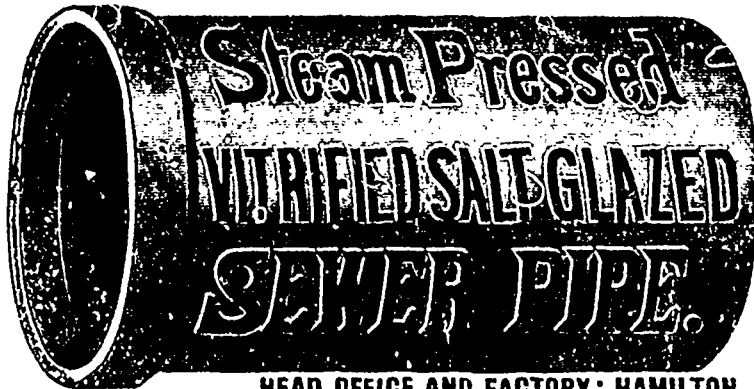
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MUNICIPAL DEPARTMENT

MODEL TENDERING.

THERE cannot be too little secrecy in tendering. In the first place, when full information is given it becomes evident whether dishonest or inadequate prices are accepted. It is constantly said that totals are far too low, and there is consequently a common opinion that the mean between the highest and lowest tenders is usually the fairest, and has the best right to be accepted. When some clue to details is given it can be inferred whether a contractor has special facilities for dealing with a particular class of work. The publication of ample information is also a boon to contractors as well as to architects and engineers. The following announcement of the tenders received by Messrs. Potter & Folwell, engineers, New York, on Dec. 20, for drainage work at West Pittston, Pa., is a model of above-board dealing:—

General conditions.—Character of digging:—Loam, average depth 6 feet, underlaid with gravel. No rock boulders or quicksand. Vitrified pipe, single strength, up to 20-inch, remainder double strength. Brick sewers 8-inch work, inner ring to springing line laid in Portland cement. Concrete bottom in egg-shaped sewers. Right reserved to omit construction of any portion of the work. Monthly payments 85 per cent. Time of completion, July 1, 1895. McGarry & McGowan, Akron O., \$36,459.72; Acock & Son, Trenton, N. J., \$39,266.17; Ryan & Avery, Watertown, N. Y., \$39,553.17; A. Emonson, Carlisle, Ark., \$39,602.61; Headley & Christie, Newark, N. J., \$42,320.11; T. H. Ryan, North Tonawanda, N. Y., \$42,376.65; Corcoran & Connell, Pittsburg, Pa., \$43,022.47; W. Franklin, Buffalo, N. Y., \$43,319.63; A. W. Bryne, West Medford, Mass., \$44,531.35; Henry M. Dowd & Co., Orange, N. J., \$45,481.50; P. J. Cleary, Shenandoah, Pa., \$45,780.3; James McCloud & Co., Williamsport, Pa., \$46,160.90; Coon, Mooney & Co., Kingston, Pa., \$46,268; Sanders & Houston, Pittsburg, Pa., \$46,462.74; Lindsay & Van Loon, Plymouth, Pa., \$47,672.94; Dunn Brothers, Scranton, Pa., \$47,915.79; Hart & Gibbons, Wilkesbarre, Pa., \$51,152.46; Batton & Van Bussum, New York City, \$51,372.57; Brodhead & McConville, Scranton, Pa., \$54,350.3; R. C. Mitchell, Plains, Pa., \$54,929.17; Frederck Hurdler, Wilkesbarre, Pa., \$56,670.93; T. M. Lesher & Son, Easton, Pa., \$62,064.3; Sullivan Brothers, Philadelphia, Pa., \$68,999.9.

The lowest detail figures were:—

Lowest bidder for tile-sewer, Acock & Son, Trenton, N. J.—6,685 feet of 8-inch pipe in trench under 8 feet deep, 33 cents per foot; 3,992 feet of 8-inch pipe 8 to 10 feet deep, 38 cents per foot; 635 feet of

8-inch pipe, 10 to 12 feet deep, 43 cents per foot; 1,225 feet of 8-inch pipe, 12 to 14 feet deep, 48 cents per foot; 330 feet of 8-inch pipe, 14 to 16 feet deep, 53 cents per foot; 250 feet of 8-inch pipe, 16 to 18 feet deep, 58 cents per foot; 455 feet of 8-inch pipe, 18 to 20 feet deep, 63 cents per foot; 180 feet of 12-inch pipe, under 8 feet deep, 43 cents per foot; 750 feet of 12-inch pipe, 8 to 10 feet deep, 48 cents per foot; 4,332 feet of 15-inch pipe, 7 to 12 feet deep, 52½ cents per foot; 565 feet of 18-inch pipe, under 8 feet deep, 63 cts. per foot; 950 feet of 18-inch pipe, 8 to 12 feet deep, 68 cents per foot; 600 feet of 20-inch pipe under 8 feet deep, 75 cents per foot; 1,260 feet of 20-inch pipe, 8 to 12 feet deep, 80 cents per foot; 350 feet of 22-inch pipe, under 8 feet deep, 86 cents per foot; 1,000 feet of 22-inch pipe, 8 to 10 feet deep, 91 cents per foot; 1,230 feet of 24-inch pipe, under 8 feet deep, \$1.23 per foot; 500 feet of 24-inch pipe, 8 to 10 feet deep, \$1.28 per foot; 400 feet of 24-inch pipe, 12 to 14 feet deep, \$1.38 per foot; 540 feet of 30-inch pipe, under 8 feet deep, \$2.24 per foot; 940 feet of 30-inch pipe, 10 to 16 feet deep, \$2.40 per foot; 325 feet of 30-inch pipe, 20 feet deep, \$2.60 per foot; 406 8 by 6-inch Y's, 25 cents each; 30 12 by 6-inch Y's, 45 cents each; 139 15 by 6-inch Y's, 65 cents each; 48 18 by 6 inch Y's, 90 cents each; 58 20 by 12-inch Y's, \$1.20 each; 51 30 by 12-inch Y's, \$4.75 each; 40 22 by 12-inch Y's, \$1.50 each; 63 24 by 12-inch Y's, \$3 each; total \$19,598.16.

Lowest bidder for brick sewers, McGarry & McGowan, Akron, O.—260 feet of 2 feet 4 inches by 3 feet 6 inches, 12 to 16 feet deep, \$2.45 per foot; 410 feet of 2 feet 4 inches by 3 feet 6 inches, 16 to 20 feet deep, \$2.75; 1,205 feet of 2 feet 6 inches by 3 feet 9 inches, 10 to 16 feet deep, \$2.40; 485 feet of 2 feet 10 inches by 4 feet 3 inches, under 8 feet deep, \$2.50; 325 feet of 2 feet 10 inches by 4 feet 3 inches, 8 to 12 feet deep, \$2.60; 363 feet of 3 feet 4 inches by 5 feet under 8 feet deep, \$2.90; 375 feet of 3 feet 4 inches by 5 feet, 8 to 10 feet deep, \$2.95; 150 feet of 36 inches, 10 to 6 feet deep, \$2.50; 257 feet of 50 inches, 8 to 13 feet deep, \$3; total, \$10,018.95.

Lowest bidder for appurtenances, Acock & Son, Trenton, N. J.—Eight flush tanks, \$30 each; 37 manholes under 10 feet deep, \$25 each; manholes over 10 feet deep, per foot extra, \$3 each; 18 intersecting manholes, \$30 each; drop manholes, per foot of drop, \$3; 85 deep-cut connections, 400 feet, at 25 cents per foot; two lamp-holes, \$12 each; 44 catch-basins, \$50 each; 38,600 lbs. cast-iron covers for man-holes, &c., 2 cents per lb.; 1,000 feet, hoard measure, oak timber in foundations, \$30 per M.; 5,000 feet, board measure, hemlock sheathing, \$15 per M.—total \$4,906.

The city water commissioner of Victoria, B. C., reports 178,371 feet of pipe, 4 inches in diameter and upwards, in the city distribution system. The strict enforcement of the by-law requiring a separate service for each tenancy is urged.

THE ABRASION TEST FOR PAVING BRICK.

The ordinary process of putting brick into a foundry rattler and revolving the same with castings for the purpose of determining the comparative qualities of the different brick for resistance to wear, writes, A. Humphreys, in the Clay Worker is far from satisfactory.

It introduces elements which are entirely foreign to the purpose, because the brick are thus subjected to influences which are never present in their actual use as paving material. While the brick withstands a shock of hundreds or thousands of pounds while occupying its place in a well-laid street, where all its strokes and shocks are upon the plain, smooth upper surface, it is well known that a slight stroke or shock from even a light hammer, when applied at a certain angle, and especially upon the flat side of even the best paving brick, may break off a considerable piece from the corner thereof.

Now this latter is just what happens in the ordinary rattler test, as, at present conducted, and the writer knows of instances in which the test of pavers, receiving just this kind of shock from a piece of casting, or even an inferior brick, have emerged from a test with a grade far below what they deserved.

What is wanted for this test is something as nearly as possible like the wear the brick gets when laid on the street, and the writer would suggest the following method: Take a rude cylindrical crate, the length and diameter of which shall equal that of the foundry rattle. Inside of this construct a cylinder of brick, among which are the specimens you desire to test, and place therein the necessary foundry castings. With the ends inclosed, place this brick cylinder within the rattler and revolve it as long and rapidly as is desirable.

By this method the brick all have an equal chance, are subjected to the same kind and amount of wear, and very much more like the ordinary street wear than in the old process.

A trial of a new contrivance for scraping water supply pipes was made in the presence of the Chief Engineer of Water Supply, Victoria, at Geelong recently, when seven chains of 3 in. pipe, considerably corroded, were cleared in three hours by a gang of five men. The instruments consist of a spiral cutter made of spring steel, and acting upon a steel shaft, so that its diameter can be expanded or contracted by operating a screw. The cost of scraping by this efficient means is not more than 6d. per chain.

Interested persons at Mannheim, Germany, have been investigating gas and water meters, with results not at all favorable to the meters themselves. Many of them registered far more than was consumed and, as a rule, they were neither accurate nor regular. The vibrations due to bad plumbing and other causes accounted for some of the waste, and a check-valve and air-chamber were recommended in order to equalize the pressure. It is said that very sudden shutting off of either gas or water will cause the meter to over-register.

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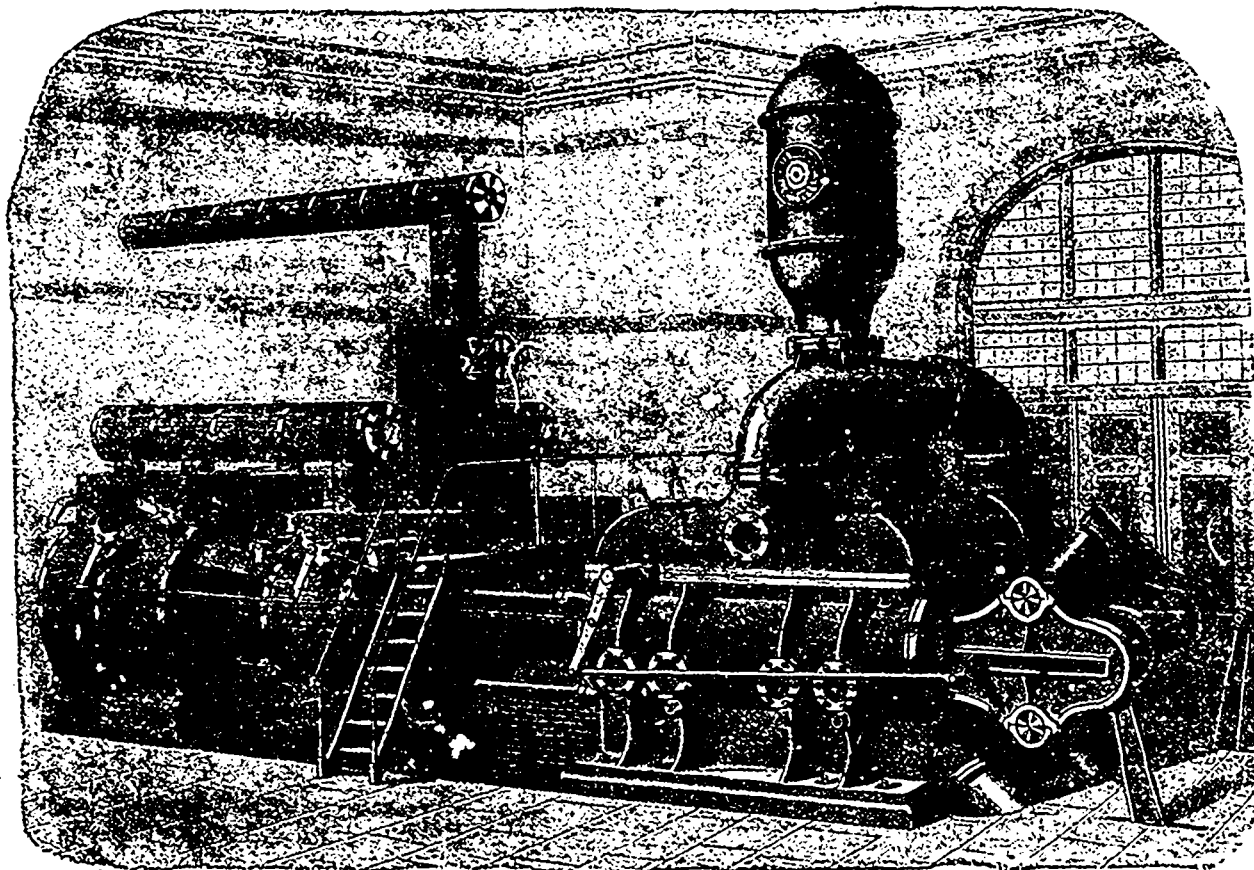
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Toronto. Montreal.

Toronto. Montreal.

CONDITION OF THE MARKET.

TORONTO: Some activity is noticeable in the demand for builders' supplies, and the outlook for the spring trade is said to be getting somewhat brighter as the season advances.

MONTREAL: The business in general hardware is confined to tools and shelf goods, which are in steady demand. In cut nails the jobbing demand is small, and makers do not report any special activity for carloads and larger lots.

LUMBER.

CAR OR CARGO LOTS.

Toronto. Montreal.

Table listing various lumber types and prices, including clear picks, three uppers, pickings, Am ins., and different sizes of siding and flooring.

YARD QUOTATIONS.

Table listing yard quotations for mill cull boards, shipping cull boards, hemlock scantling and joist, and various sizes of cuttings up planks.

B. M.

Table listing lumber prices under the B. M. category, including flooring, sawn lath, cedar, red oak, white, basswood, cherry, white ash, black ash, dressing stocks, and American inspection.

BRICK—M

Table listing brick prices, including Common Walling, Good Facing, Sewer, Pressed Brick (Red, Buff, Roman, Buff, Brown), and various quality bricks at Port Credit.

SAND.

Table listing sand prices, including Per Load of 1 1/2 Cubic Yards.

STONE.

Table listing stone prices, including Common Rubble, Large flat Rubble, Foundation Blocks, Kent Freestone Quarries, River John, N. S., brown Freestone, New York Blue Stone, Granite, Moat Freestone, Thomson's Gatelawbridge, Credit Valley Rubble, Credit Valley Brown Coursing, Credit Valley Brown Dimension, Credit Valley Grey Coursing, Credit Valley Grey Dimension, Clark's N. B. Brown Stone, Brown Free Stone, Madoc Rubble, Madoc dimension floating, Ohio Freestone, and Promiscuous.

SLATE.

Table listing slate prices, including Roofing (red, purple, unslating green, black) and Terra Cotta Tile.

PAINTS. (In oil, # lb.)

Table listing paint prices, including White lead, Red lead, Yellow ochre, Green, Black lamp, Blue, Oil, Putty, Paris white, Litharge, and Sienna.

CEMENT, LIME, etc.

Table listing cement prices, including Portland, German, London, and Newcastle.

Table listing cement prices, including Belgian, Canadian, Roman, Parian, Superfine, Thorold, Queenston, Napanee, Hull, Keene's Coarse, Calcined plaster, Fire Bricks, Lime, Plaster, and Hair.

HARDWARE.

Table listing hardware prices, including Cut nails, Steel, and various sizes of cut nails and spikes.

FINE BLUED NAILS.

Table listing fine blued nail prices, including 3d, 2d, and 1d.

CASING AND BOX, FLOORING, SHOOK AND TOBACCO BOX NAILS.

Table listing casing and box nail prices, including 12d to 30d, 10d, 8d and 9d, 6d and 7d, and 4d to 5d.

FINISHING NAILS.

Table listing finishing nail prices, including 3 inch, 2 1/2 inch, 2 to 2 1/2 inch, 1 1/2 to 1 3/4 inch, and 1 1/4 inch.

SLATING NAILS.

Table listing slating nail prices, including 5d, 4d, 3d, and 2d.

COMMON BARREL NAILS.

Table listing common barrel nail prices, including 1 inch, 3/4 inch, and 1/2 inch.

CLINCH NAILS.

Table listing clinch nail prices, including 1/2 and 3/4 inch, 2 and 2 1/4 inch, 1 1/2 and 1 3/4 inch, and 1 inch.

SHARP AND FLAT PRESSED NAILS.

Table listing sharp and flat pressed nail prices, including 3 1/2 inch, 2 1/2 inch, 2 inch, 1 1/2 inch, and 1 inch.

STEEL WIRE NAILS.

Steel Wire Nails, 75, 10 and 5 % discount from printed list.

Iron Pipe:

Table listing iron pipe prices, including 1/2 inch, 3/4 inch, 1 inch, 1 1/4 inch, 1 1/2 inch, 2 inch, 2 1/2 inch, 3 inch, and 4 inch.

Lead Pipe:

Table listing lead pipe prices, including 7c waste pipe, 7 1/2c waste pipe, and 5c waste pipe.

Galvanized Iron:

Table listing galvanized iron prices, including Adam's-Mar's Best and Queen's Head, 16 to 24 gauge, 26 gauge, 28 gauge, and Gordon Crown.

Structural Iron:

Table listing structural iron prices, including Steel Beams, channels, angles, tees, plates, and Sheared steel bridge plate.