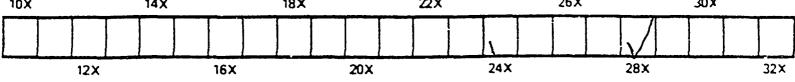
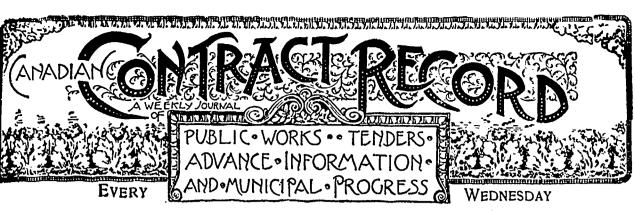
The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below. L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

| TOX | 14× | 18X | 22X | 26X | 30× |
|-------|--|--------------------|------------|---|-----------|
| Ce do | tem is filmed at the reduction ratio checl cument est filmé au taux de réduction in | idiqué ci-dessous. | | | |
| 1 1 | Additional comments:/ Commentaires supplémentaires: | | | | |
| | | | | Masthead/ Générique (périodiques) de la | livraison |
| | nais, lorsque cela était possible, ces page pas été filmées. | | | Titre de départ de la livraison | |
| | Il se peut que certaines pages blanches a lors d'une restauration apparaissent dans | | F1 | Caption of issue/ | |
| | been omitted from filming/ | | | Page de titre de la livraison | |
| | Blank leaves added during restoration ma within the text. Whenever possible, thes | | | Title page of issue/ | |
| | distorsion le long de la marge intérieure | | | Title on header taken from:/ Le titre de l'en-tête provient: | |
| | La reliure serrée peut causer de l'ombre o | ou de la | | | |
| | Tight binding may cause shadows or dist along interior margin/ | ortion | | Includes index(es)/ Comprend un (des) index | |
| | Relié avec d'autres documents | | | Pagination continue | |
| | Bound with other material/ | | | Continuous pagination/ | |
| | Planches et/ou illustrations en couleur | | | Qualité inégale de l'impression | 1 |
| · | Coloured plates and/or illustrations/ | | | Quality of print varies/ | |
| | Encre de couleur (i.e. autre que bleue ou | | | Transparence | |
| r1 (| Coloured ink (i.e. other than blue or blac | :k)/ | | Showthrough/ | |
| | Cartes géographiques en couleur | | | Pages détachées | |
| (| Coloured maps/ | | | Pages detached/ | |
| | Le titre de couverture manque | | | Pages décolorées, tachetées ou | piquées |
| (| Cover title missing/ | | | / Pages discoloured, stained or f | |
| | Couverture restaurée et/ou pelliculée | | | Pages restaurées et/ou pelliculi | ées |
| r1 (| Covers restored and/or laminated/ | | [] | Pages restored and/or laminate | :d/ |
| | Couverture endommagée | | LV_ | Pages endommagées | |
| 1 C | Covers damaged/ | | | / Pages damaged/ | |
| | Couverture de couleur | | | Pages de couleur | |
| 1 0 | Coloured covers/ | | | Coloured pages/ | |





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 IO.

JANUARY 24, 1900

No. 52.

THE CANADIAN CONTRACT RECORD,

PUBLISHED EVERY WEDNESDAY san Intermediate Edition of the "Canadian Architect and Builder."

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

, H. MORTIMER PUBLISHING COMPANY of Toronto, Limited. Publishers.

ONFEDERATION LIFE BUILDING, TORONTO. Telephone 2362.

Branch Office : You York Life Insurance Building, Montreal. Bell Telephone 2299.

Advertising Rates on application.

information solicited from any part of a Dominion regarding contracts open to ader.

Subscribers who may change their address suild give prompt notice of same. In doing give both old and new address. Notify the ublickers of any irregularity in delivery of paper.

LECTRIC LIGHT-ALL-NIGHT SERVICE L stated in Town of Palmerston; tenders restred as rate per light. Address, S Caswell, Jack.

FOR SALE

Two Double Cylinder, Double Drum HOISTING ENGINES. For full particulars address, P.O. Box 60, Kingston, Ont.

WANTED

The publishers will pay 25 cents for a complete copy f the CANADIAN ARCHITECT AND BUILDER for Nomber, 1830. Address, THE C. H. MORTIMER PUB-JANUS CO. OF TORONTO, Limited.

Position Wanted

CNGLISHMAN (33) SEEKS ENGAGEMENT L in Canada as Clerk of Works or Builder's Manag w Fotcann; 17 years experience on first-class works. horocok knowledge building trades, also well up in social and mechanical engineering. Good draughts un. Highest references and testimonials. Address, om: Hulban, Ashbourne Road, Rocester, Staffs., legland.

DATE OF PUBLICATION.

Architects, Engineers, Municipal Auborities and others are reminded that the CONTRACT RECORD is printed every fuesday afternoon, and that advertisenents should reach the office of publicaion not later than 2 o'clock p.m. on that lay to ensure insertion in the issue of the urrent week. Advertisements are freuently received too late for insertion, to void which special attention is directed o this announcement.

CONTRACTS OPEN.

OLDS, N.W.T.-A new residence will be built by Jas. Marshall.

BALSAM, ONT.-J. R. Jones is preparing to build a new residence.

HARRISTON, ONT.- R. F. Dale will erect a block of three stores.

DUGALD, MAN.—A. & J. Thompson will erect a machine shop here.

BEDFORD, QUE. - Mr. Laraway is preparing to build a dwelling house.

NINGA, MAN. - The farmers of this district may erect a grain elevator.

GRENFEL, ONT. - The ratepayers have decided to build a new school house.

PUGWASH, N.S.—The Maritime Clay Works are about to build a large kiln.

MILVERTON, ONT. - A new residence will be built in the spring by D. Smith.

PORTAGE LA PRAIRIE, MAN. - F. Evans will build a large implement warehouse.

GALT, ONT.—Shurley & Dietrich, saw manufacturers, will erect a new business office.

SHOAL LAKE, MAN. - M. W. Thomson will erect a two-storey stone building next spring.

SEBRINGVILLE, ONT.-E. Kiehna has under consideration the erection of a dwelling.

TEMPLETON, QUE.—The trustees intend building a new school house on King's road.

WILLISCROFT, ONT.—It is the purpose of E. H. McArthney to erect a new house next summer.

PRESCOTT, ONT.—There is some talk of the Connors' Syndicate building elevators at this place.

TOTTENHAM, ONT.—The Steele Furniture Co. will proceed at once to build a furniture factory at this place.

CARDSTON, N.W.T.—The trustees of the Cardston school district are considering the erection of a new school.

LAKEHURST, ONT.—Tenders are invited by H. D. Nisbett, up to February 1st, for building a cheese factory.

MARSH BRIDGE, N.B.- Tenders are invited for the erection of a church at Golden Grove. Plans at this place.

DUNDAS, ONT – The Presbyterian con gregation have under consideration extensive improvements to their church.

STANTON, ONT.-W. J. Pearson purposes building an addition to his sash and door factory and putting in new machinery.

BRANTFORD, UNI.—Mrs. Allen has purchased property on Richmond street and intends erecting a dwelling house thereon.

DUNNVILLE, ONT.— The by-law to grant a bonus to F. R. Lalor to establish a canning factory was carried on Monday last.

WHIIBY, ONI.- J. E. Farewell, county clerk, invites offers up to 26th inst. for

purchase of \$11,000 of four per cent. debentures.

PORT HOPE, ONT.—A party of G.T.R. surveyors have been laying out the route of a proposed line from this place to Port Union.

HARRISON RIVER, B.C. - The Harrison Mills, Timber & Trading Co. have invited tenders for the erection of a saw mill at this place.

BRY50N, QUE.—A civil engineer has been surveying in this vicinity for the proposed extension of the Kingston & Pembroke Railway to this place.

TRURO, N.S.—A deal has been completed by which the Hervey railway to Sheiburne via New Germany and Windsor, thence to Brule, will be built.

NEWCASTLE, N.B.— The corporation offers a bonus equal to 20 per cent. of the capital invested to any person who will establish a furniture or woollen factory

BRANDON, MAN.—The trustees of Knox Presbyterian church have decided to proceed with the erection of a new edifice, of pressed bruck and stone, to cost \$25,000.

INGERSOLL, ONT.-W. R. Smith, town clerk, invites tenders up to Thursday, February 1st, for the parchase of \$4,000 twenty year permanent improvement debentures.

SHERBROOKL, QUL.—The Scotttown Mills Co. are applying for incorporation, to conduct a saw null and general lumbering business. H. R. Fraser, of this town, is interested.

WOODLANDS, MAN. – Tenders are invited by E. P Langrell, clerk of bridge committee, up to Saturday, 27th inst., for construction of pile bridge over the arm of Long Lake.

ALTON, ONT. - Wm. Algie will shortly commence the construction of a stone addition to his knitting factory, and equip same with machinery for the manufacture of fine underwear.

WOODSTOCK, ONT. —A special committee of the town council have refused to grant a franchise for 50 years to the Woodstock, Thames Valley & Ingersoll Electric Railway Co.

DEPOT HARBOR, ONT.—The Canada Atlantic Railway Co. have decided to erect a second elevator at this place, to have a capacity of 1,500,000 bushels and to cost about \$250,000.

ARMOW, ONT.—R. B. Campiell, clerk of Kincardine township, wanist tenders by February 7th for supply rs a quantity of rock elm, hemlock, tastarac and cedar planks and round timier

GREENWOOD, B.C. The Hunter Ken drick Company have purchased property and intend building an addition to their block in the spring.—P. Burns & Co. purpose building a meat market.

KINCARDINE, ONT.-James E. Harrison wants tenders by February 10th for erection of brick house on lot 28, concession 11.—Tenders are invited up to February 1st for bricking the Presbytenan church at Pine River. Plans at residence of John Walson, lot 38, concession 5.

FORT WILLIAM, ONT. — Additional hose is required by the fire brigade.—T. Kenrick & Co. will remodel the building recently vacated by the Journal Frinting Co.

ST. CATHARINES, ONT. — The city council have granted right of way for the proposed electric railway to Port Dalhousie. —The city will ask authority from the Ontario Legislature to raise \$100,000 for street improvement.

PARRI SOUND, ONI. - The question of erecting a six room school building will be considered at an early meeting of the School Board.- Thos. McGown, Jr., A. J. Guure and Mr. Lipscombe each purpose building new residences.

STRATIORD, ONI.—No. 2 Committee has recommended to council that tenders be asked for tile, lumber and cement for the year; also that the construction of sewers, granolithic walks and macadam roads be proceeded with.

GUELPH, ONT.—J. White & Son, of London, have made a proposition to the corporation to remove their bolt works to this city. They agree to erect a new building and employ 64 workmen in return for a bonus of \$15,000.

AMHERSTBURG, ONI. —A petition is being circulated to extend the Gore street sewer to Murray street.—The county council have passed a by-law to raise \$16,000 by the issue of debentures for the establishment of a House of Refuge. It has been decided to erect the building on the Wilson farm near Leamington.

MUSQUASH, N.B.- The Musquash & Bonny River Telephone Co. has been organized, for the purpose of building a telephone line from the city of St. John to the offices of the Bonny River Lumber Co. at Bonny River and Musquash. J. Knight and A T. Dunn, of this place, are interested, A.P. Barnhill being solicitor for the company.

SMITH'S FALLS, ONT.-The Beckett sash and door factory has again changed hands, Capt. Foster being the purchaser. The buildings will be overhauled.—Willis Chipman, C.E., of Toronto, will immediately prepare plans for several sections of the water works and sewetage system. It is expected that plans for sections 2, 3 and 4 will be completed early in February.

ROSSLAND, B. C.—A site has been selected for the new post office building to be erected by the Dominion government.—The owners of the Velvet mine purpose constructing a railway from this place to the mine. It has not yet been decided whether the motive power will be steam or electricity, a director of the British Electric Co. now being on his way from England to determine this point.

ST. JOHN, N.B. -- J C. Dumaresq, architere, of Halifix, has been commissioned to inspect the building on Prince William St. known as Chubb's corner, and report upon the changes required to convert it into a branch for the Merchants Bank of Halifax — In view of the demand made by the Underwriters' Association, the council are now considering improvements to the water works system. It is believed that the necessary improvements and extensions will cost \$200,000.

VICTORIA, B. C.—Tupper, Peters & Potts, a local legal firm representing a responsible syndicate, have made a new proposition to the city council in regard to the proposed extension of the Victoria & Sydney Railway and the ferry connection with the main land. The by-law now before the council provides that the city shall take stock to the extent of \$500,000, the company agreeing to raise

a sufficient amount, estimated at \$2,000,-000, to carry out the undertaking.

BARRIE, ONT.—The Barrie Tanning Co. have asked the corporation to guarantee their debentures to the extent of \$30,-000 to assist them in remodelling their present plant or rebuilding on an entirely new plan. The Board of Trade has endoised the proposition.— The Underwriters Association have pointed out to the council the need of an electric fire alarm system and of waterworks extension.—It is probable that the electric light system, controlled by the corporation, will be extended to Allandale.

VANCOJVER, B.C.—Tenders for clearing the route of the Vancouver and Lulu Island railway from Fairview to the north arm of Fraser river will be received by H. Abbott, director, up to 29th inst.—G. W. Grant, architect, has invited tenders for the erection of a three storey brick and stone warehouse on Pender street for Mc-Lennan, McFeely & Co. Same architect has invited tenders for erection of a frame building, containing stores and dwellings, for G. D. Mackay.—A large new three storey brick hotel is to be erected on the present side of the Bodega, to have a frontage of about 75 feet.

HALIFAX, N.S.—The county council has recommended that the provincial government provide a stone crusher for the municipalities unable to use the present road machine.—Hon. Isadore LeBlanc, of Artchat, was in the city last week on business in connection with the Canso & Louisburg Railway Co., which purposes constructing a railway from the Straits of Canso to Louisburg, a distance of 95 miles. A meeting of the share-holders will be held in Boston on January 25th.—The Nova Scotia Telephone Co. are considering the advisability of extending their long distance service to Sydney, C B. It is understood that the expenditure incident to this extension will be about \$50,000.

TORONTO JUNCTION, ONT.—The council is considering the enlargement of the electric light plant.—The chairman of the Waterworks Committee, in his introductory address read at council meeting last week, recommended the brick paving of Dundas street from Bloor to Humberside, the extension of the water mains to St. Clair school house, and the extension of the sewerage system to King, Queen and Albany road.—Arrangements have been made by which Alex. Roy, mining engineer, of Toronto, will establish a foundry and machine shop here for the manufacture of mining machinery. The building will be erected on Pelhamavenue, and will be 100×50 feet, costing about \$to,000.

KINCSTON, ONT. - The governors of the general hospital have decided to remodel the Nickle wing, plans for which will be prepared by Power & Son, architects, of this city. - James Thompson's bottling works on Princess st. were completely wrecked last week by an explosion of carbonic acid gas. - The governors of the School of Agriculture, in this city, are taking steps to establish a cold storage watehouse in connection with the institution. The plant will cost \$25,000. - The directors of the School of Mining will ask the Ontario Government for a grant towards the erection of a new laboratory, to cost about \$10,000.

WINNIPEG, MAN.- The Stuart-Arbuthnot Machinery Co. will erect a new warehouse adjoining their present premises on Main St.-C. H. Wheeler architect, has prepared plans for a stone block to be built on Main St. for the Great West Insurance Co., to be of Cleveland stone, 32x120 feet. Work on the foundation will be commenced in the early spring.-It is expected that the plans for the new hotel and station to be built by the C.P.R. will be decided upon this week.-At a meeting of the Y.M.C.A. Building Com-

mittee held last week, the architect, Ge Browne, presented two floor plans, a free elevation and a sectional view of the pr posed building. The plans were t, prose and the architect instructed to proceed to once to prepare full details and specific tions. These will likely be ready in abor three weeks.

HAMILTON, ONT. — On account of the road improvements to be carried out this year, it is probable that another road roller will be purchased. — The House c Refuge Committee have found that im provements are required at the House of Refuge, including storm windows, electind wiring, repairs to roof, fire extinguishers and heating apparatus for the building for incurables. — The city engineer has recommended that specifications be prepared/or new centrifugal pumps, rendered nets sarv by the addition to the sewage a Wentworth st.—Mayor Teetzel has pointed out to council the need of the immediate extension of the water works systea Chairman Nelligan, of the Sewers Cosmittee, has instructed the city engineers where permanent pavements are to be faid. He has also pointed out that it rabe necessary to consider a scheme for the disposal of sewage in the west end of the city.

MONTREAL, QUE.-A. J. Corriveau La submitted to the Chamber of Commen a scheme for the construction of a cau from Longueuil to St. Therese, a distant of eighteen miles, and the enlargement of the Chambly canal from St. Therese Bu to St. Johns, a distance of four miles-The Grand Trunk Railway Co. have per chased property near the Bonavenier station for freight purposes. New build ings will be erected thereon --It is under stood that the Montreal Street Railwa Co. are negotiating with the Chambi Manufacturing Co. for the supply of power for the operation of their street car system Should the deal be completed, the cap city of the Chambly plant will be increase —The Board of Managers of the Moz treal Maternity Hospital have received donation of \$15,000, to be used in the erection of a new building.—The city der will receive tenders until the 24th inst for the supply of 150 toise of unbroke stone, for the construction of asphalt mas tic and composition sidewalks require during the year, and for the supply of flag stone, curbstone and artificial paris blocks for sidewalks and crossings, als until February 15th for the supply of material required by the Road Committee including vitrified clay pipe and inverts cement, lumber, brick, iron castings, et

OTTAWA, ONT.-A conference will bebe this week between the city and com authorities to decide upon proposed alien tions to the Court House.-N. J. Ke assistant city engineer, states that plus and specifications for the Glebe drains system are now under way.—A plan under consideration for the enlargent of the Glebe Presbyterian Church— party of engineers, working under the direction of Henry F. McLeod, MICE has recently completed the soundings lake Deschenges to determine the motion Lake Deschenes, to determine the ma of the Ottawa and Georgian Bay canal-A change is proposed in the route of se tions one and two of the sewerage system and O'Leary & Robillard have submit an offer to cross the Rideau River Somerset St. and pass through Janen and Gloucester to the outlet at Jo Street, New Edinburgh. The engle estimates that the extra cost will be ab \$20,000.-A motion has been passed council to appoint a committee to inter-gate the civic lighting plant question L. K. Jones, secretary Department Railways and Canals, wants ter let Monday, February 5th, for con traine of two non-condensing marine estat and a Clyde boiler. Plans at above de ment and at the superintending engine

office, Cornwall.—The Minister of Public Works states that he will recommend the placing in the Dominion estimates of a large sum to improve the French river from its mouth to Lake Nipissing, a distance of 50 miles. The building of three dams and three locks will be required.

TORONIO, ONT .--Symons & Rae, architexts, 35 Adelaide st. East, want tenders by 5 p m Thursday, 25th inst., for the erection of a hospital at Upper Canada College, including carpenter, plastering, painting, plumbing, heating and con-crete work.—At the annual meeting of the Bloor Street Baptist church held last week, it was stated that it was proposed to enlarge the present auditorium so as to provide increased seating capacity for 300 persons. At a meeting of the Board of Manapement of the Working Boys' Home held last week, it was decided to begin the new building in the spring if the pres-ent premises on Frederick St. can be disposed of.—The authorities of the G. T. and C. P. Railway Companies are considering plans for increasing the baggage and express facilities at this place.county offices in the new municipal building will be furnished immediately. -Ald. Burns, Chairman of the Property Commiltee, points out that questions to be considered this year will include the extension of the cattle market and improvements and extensions to fire halls and police stations.—The Heinze Pickle Co., of Pittsburg, Pa., have decided to erect a herory in this city, and have been in communication with the Assessment Commissoner regarding a site.-W. Mortimer Clark gives notice of application to parliament for the incorporation of a company to build a railway from this city to Collog wood.—Building permits have been granted as follows. W. Willis, two storey bick dwelling, south side Bismark ave., rost \$1,400 (M. Wilmott, architect); T. J. Applegath, alterations to store front, word and glass, 145 Yonge street, cost \$850 (F. H. Herbert, architect, R. G. Kirby, builder); Arthur Mitchell, two-storey wood and rough-cast dwelling, Wright avenue, near Sorauren, cost \$900; Arthur Harvey, two two-storey wood and rough-cast dwellings, Wright avenue, cost \$1,000 each; Robert Simpson Co., six-storey brick, stone and steel addition to store, 164 Yonge street, cost \$40,000 (Paula & Hormood architector F. Witchell (Burke & Horwood, architects, E. Witchall & Co., builders).

FIRES.

J. W. Beck & Co.'s wholesale warebouse at Winnipeg, Man.; loss \$20,000, covered by insurance.—Furniture factory of R. S. Porteous at Stratford, Ont.; loss \$5,000, insurance \$3,000.—Office of the Pictou Advocate at Pictou, N.S.; plant valued at \$6,000.—A report from Skagway states that a large part of the business portion of Dawson has been destroyed by fre, the loss exceeding \$500,000.

CONTRACTS AWARDED.

PORT COLBORNE, ONT. - Residence for 1 help Grobb. Reichman & Anthes, contractors.

MULGRAVE, N.S.—Simmons & Burpee, of St. Marys, have been awarded the contract for building a wharf at this place; price about \$25,000.

ST JOHN, N.B.—The Lordly Manufacturing Co. have been awarded the contract for furniture for the new Indiantown school.—Alterations to Merchants' Bank Masonry work, John Flood; carpenter work, Edward Bates.

BUCTOUCHE, N.B. — James Barnes, M.P.P., of this place, has secured the contract for execting a telephone line between Fred victon and Chatham, for the New Brun wick Telephone Co. He will supply the necessary poles, cross-arms, etc.

STEEL AND CEMENT FACING FOR A PROTECTION PIER.

The pivot pier of the draw span for the Davenport, Rock Island& Northwestern Railway at the Davenport crossing of the Mississippi River, is exposed to floods and very heavy ice flow, and is protected by an upstream fender pier. This is a continuous timber crib 26 feet wide, 250 feet long and 28 feet high, built in water 7 feet deep at its low stage. The crib is strengthened by four interior longitudinal walls and by transverse walls 8 feet apart. At the upstream end the sides converge to form a nose with an angle, measured in plan, of 90 degrees at the point and 45 degrees at each shoulder. The cutting edge is battered 6 inches to the foot.

A facing of heavy steel plates was proposed to protect the inclined surfaces of the nose, but as this involved a plank sheathing and it was difficult to secure the plates, it was determined to use old rails instead. These were procured, practically from scrap, in 28-foot lengths, and of a section which had originally weighed 56 pounds per yard. They were spaced 5 inches apart centers, and spiked on each side in the ordinary way to each horizontal course of the crib. In addition they were secured by drift bolts through holes drilled in both sides of the base so as to afford additional resistance to overturning, and for the same reason several of the tails on each side of the nose and at the shoulder were bolted together through their webs.

The space between the rails was filled with one-to-one mortar of Portland cement, well tamped. This work was done as low down on the crib as possible, in a season of low water. The weather at the time was cold and the materials for the mortar were heated and applied only during the middle of the warmest days. The work was subjected to an unusually heavy flow of thick ice during the first winter and in the following spring showed no signs of wear or deterioration. The work was executed by the employees of the railroad company under the supervision of Mr. C. F. Loweth, chief engineer.-Engineering Record.

BUSINESS NOTES.

Caron & Racicot, plumbers, Montreal, have dissolved partnership.

Chatillon & Page, plumbers, Montreal, have registered partnership.

The dissolution is annunced of Gamelin & Huot, architects, Montreal.

Andrew Clanahan, builder, of Glencoe, Ont., is reported to have assigned to C. B. Armstrong.

A meeting of the creditors of J. A. Frappier, architect, Montreal, was held on Monday last.

Cossette & Frere, builders, Valleyfield, Que., have dissolved partnership, O. Cossette continuing.

Labelle & Deschamps, plumbers, Montreal, are said to be offering to compromise with their creditors.

Alex. Desmarteau has been appointed curator of the estate of C. Narbonne, contractor, Longueuil, Que.

PRIZE FOR BRIDGE DESIGN.

The government of New South Wales, Australia, is offering a prize of $\pounds_{1,000}$ for the best competitive design submitted be before August 1st, 1,900, for a bridge to be built across Sydney harbor. The estimated cost of the bridge is $\pounds_{500,000}$.

The great difficulty hitherto experienced with cast or wrought iron objects coated with enamel is the unequal expansion and contraction of the two substances, this causing a splintering of the enamel, but M. Saghot lately brnught before the French Societe d'Encouragement pour l'Industrie Nationale the results of his experiments in this connection, that have enabled him to constitute a whole series of enamels having various degrees of expansion. It appears that enamels containing cryolite, flourspar, and a little rutile, or native titantic acid, possess very high degrees of dilation, and that cast or wrought iron, coated with calcareous enamels containing no lead, which are not at all injurious, may be formed by using boric acid.

The paper by Mr. Bernard Drake on "Some Practical Hints on the Production and Use of Electricity for Lighting Country Houses," mentions many points often neglected in the management of the electric lighting of a house which, when atttended to lead to greater economy and a more restful illumination. For example, when lamps are placed against walls, it is better to shade them only in front, and so obtain the full advantage of the reflection of the wall. An eight-candle power lamp under these circumstances produces a better illumination than a sixteen power lamp shaded all round. Mr. Drake showed a very striking experiment, proving conclusively that a frosted glow-lamp produced a better illumination than a clear lamp of the same candle power as measured by a photometer. Each of the lamps was placed in a box open at the top and covered with dark green cloth inside .-The Builder.

A very important point has been elucidated by Dr. Heinics, who conducted in Germany the following experiments : He took equally large perces of oak, poplar, and pinewood and of iron and cement plates, and covered each piece with oil paint, size paint, lime plunt, or enamel paint, as well as with a few proprietory compositions. After the paint had dried perfectly, the plates were coated with cul-tures of various disease inciting bacteria. In this condition the plates were laid in an incubator, in which an ordinary room temperature was maintained. From time to time a little was scraped off from the surface of the plates in order to examine them as to the amount of live bacteria present. The result was that upon oil paint coatings the bacteria were found to die off quicker than on articles coated with other pigments. On enamel paint the bacteria die more slowly, and still slower on lime and size paint. This heterogenon lime and size paint. This heterogen-ous behavior is probably not due to the chemical properties of the paints, but to the different physical qualities, especially to the fact that the liquids containing bacteria dry more slowly or quickly upon the various paints. Professor Loeffler attaches considerable practical importance to, the result, and recommends the use of only oil paint in hospitals, schools, barracks, and other buildings.

ZINC COATING ON IRON.

The Zeitschrift fur Elektrotechaick says on this subject that a coating of zinc on iron acts quite different (a fact not generally known) than when the iron is plated with other metals, such as nickel, silver, or copper. Unlike these other metals, zinc protects the iron electrically by virtue of the fact that in the presence of moisture a galvanic couple will be formed between the zinc and any exposed parts of the iron, which will cause hydrogen to be formed on the exposed iron, and this tends not only to keep rust from forming but will also reduce any rust which may have been formed. To successfully plate iron with zinc is therefore much more important than to nickel plate it, but much more difficult. The Zeitschrift gives the following recipe for the process : The bath should have a specific gravity of 1135, or contain about 1/2 lb. of zinc sulphate per quart of water. Its current density should be about o'r to 0'2 amperes per square inch, and the solution should be kept stirred. The articles must be very carefully cleaned before plating, and the bath should be replenished with a mixture of zinc dust with about twice its weight of powdered coke suspended in a bag.

Firemen like Sir E. M. Shaw, who have had great experience with building material, generally express confidence in the endurance of sound timber amidst flames. The British Fire Prevention Committee's latest publication contains an account of an experiment of a solid timber floor in March of last year. The floor measured 10 feet by 10 feet, and consisted of 9 inch by 12-inch fir beams laid flat on the walls and bedded in fire clay. The pieces had been used as strong struts, but the holes in them for bolts and mortising were filled with grouting. On the floor a load of bricks weighing a little over a ton was placed. The test lasted from 3.20 p.m. to 4.35 p.m., and the highest temperature was 19.55° Fahr. On examination it was found that the fire had penetrated from $1\frac{1}{2}$ to 21/2 inches, while the remainder of the beams were in as good condition when removed as when first operated on. The fire clay in the joints and holes prevented the fire from going through and, there, as in the bedding, remained perfectly soft. The boarding on the top of the beams was not scorched or damaged. The experiment is important from its confirmation of the opinion of experts. It was conduct-ed by Messrs. F. R. Farrow, C. E. Goad and Ellis Marsland.



The Hamilton Bridge Works Co, Limited, Hamilton, Canada STEEL RAILWAY and HIGHWAY BRIDGES STEEL ROOFS and Every Description of STEEL LATTIEs and GIRDER WORK Estimates Furnished on Application.

MUNICIPAL DEBENTURES BOUGHT ÆMILIUS JARVIS & CO. (Toronto Stock Exchange) 82 King St. West, TOROITO

January 24, 1900



CANADIAN CONTRACT RECORD.



6

THE GOOD ROADS MOVEMENT.

The standing committee of the Provincial Municipal Good Roads Association met in the office of the clerk of York County, at Toronto, on Jan. 12th. Present --Chas. E. Lundy, chairman, Newmarket; J. F. Beam, vice-chairman, Black Creek; J. A. Ramsden, secretary, Toronto; M. Richardson, Flesherton; D. H. Moyer, Camden; W. H. Pugsley, Richmond Hill; M. Buchanan, Ingersoll.

It was decided to have published not less than 5,000 copies (in bulletin form) of the proceedings of the recent good roads convention, for the distribution by county councilmen, and copies to be sent to each member of the legislature.

It was agreed that the resolutions of the convention for presentation to the Ontario Government should take the form of a petition, and a draft petition was agreed upon.

After some time spent in deliberation on this and other matters, it was arranged, through Provincial Road Instructor A. W. Campbell, to have an information conference at 3 p.m. with Hop. Mr. Ross, and show him the draft petition, which it is proposed to present formally to the Government at a later date, about the time of the meeting of parliament. The conference with the Premier was a very satisfactory one, and the views presented are now "under serious advisement.

The Premier asked for more time to read up more fully Massachusetts, New Jersey, and other state aid road laws, and stated his desire to have another conference with the members of the committee early in February, before the next meeting of the legislature. Mr. Ross said as there had not been any previous organized action of the people asking for provincial aid for good roads, the Government could not be expected to take up the question in advance of public opinion.

LEGAL DECISIONS AFFECTING MUNICIPALITIES.

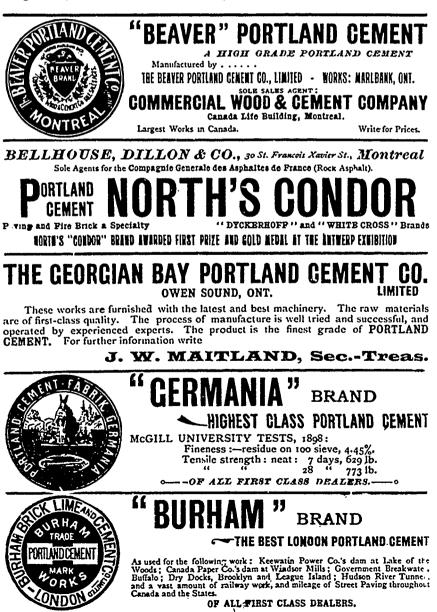
TOWNSHIP OF CHINGUACOUSY V. MC-LELLAN.-Judgment on appeal by defendant from judgment of Rose, J., granting an injunction and mandamas. In 1883 the plaintiffs, pursuant' to an agreement between them and defendant, filled in two old culverts, and constructed a new one across the highway in front of defendant's lands, and dug a ditch or water course across his lands to the river. The defendant objected to the ditch being dug without paying him a compensation, and had partly filled it in when this action was commenced. Appeal dismissed with costs.

VILLAGE OF HINTONBURG V. OTTAWA ELECTRIC RAILWAY CO.-Judgment on

appeal by plaintiffs from judgment of Mac-Mahon, J., who tried the action without a jury at Ottawa, dismissing it with costs. Action to recover \$723.22 which the plaintiffs were obliged to pay to the George Mathews Company, pork packers, for injury to the property of that company by reason of the raising of the grade of a street in the village, and for costs of an award made against the plaintiffs, and for their own costs made by plaintiffs of the arbitration between them and the George Matthews Company, which sum they sought to recover by reason of an agreement of indemnity entered into by defendants with plaintiffs. The trial judge held that it was not by reason of the exercise by defendants of any of its powers, or by improper conduct of defendants, that the injury was caused to the lands of the George Mathews Company. Held, that the company were exercising pow. rs under the Street Railway Act, and not as agent, and must indemnify the corporation. Appeal allowed with costs.

COUNTY of YORK v. ROLLS.—Judgment on appeal by plaintiffs from the judgment of MacMahon, J., dismissing action with costs. Action to restrain defendants from further proceeding with the filling in or obstructing of the course of the River Don, where i runs along-side or crosses Yonge street, on lot 10 in the first concession west of Yonge street, in the township of York. The plaintiffs allege that the fill ing in injures their bridge over the river at York Mills. It was contended that no right of action existed against defendants as sued in their capacity as executors of will of the late Charles Rolls, and that defendant, Charles Rolls, as tenant for life of the land in question, had a right to reclaim and restore the river to its original channel, as existing before the occurrence of a flood in the year 1878. Held, that on the facts and the law the judgment below was right. Appeal dismissed with costs. C. C. Robinson for plaintiffs. Ludwig for defendant Hunter. William Cook for defendant Rolls.

The Peterborough town council has had printed for distribution posters in which it is proclaimed that the council enacts as follows : On and after the first day of July, 1901, no person shall on any street in the town of Peterborough use for the conveyance of articles of burden, goods, wares and merchandise, any vehicle the tire or wheels of which are less than four inches in width and the weight of which vehicle with its load exceeds 2,000 pounds, or any vehicle the tire or wheels of which are less than 3 inches in width and the weight of which vehicle with its load exceeds 1,000 pounds.



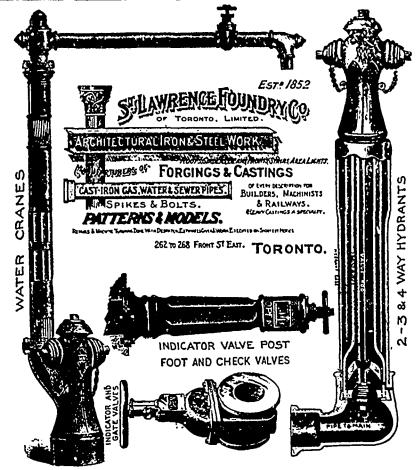
MUNICIPAL ENGINEERS, CONTRACTORS AND MATERIALS

VILLIS CHIPMAN Hon. Grad. McGill University. M Can. Soc. C.E. M. Am. Soc. C.E. Mem. Am. W.W. Ass'n. WATERWORKS, SEWERAGE WORKS, GAS WORKS, ELECTRIC LIGHT AND POWER PLANTS Reports, Surveys, Construction, Valuations 103 BAY STREET - TORONTO **RODERICK J. PARKE** Consulting Electrical Engineer MUNICIPAL BLECTRIC LIGHTING COMMERCIAL POWER INSTALLATIONS Manufactories. Estimates, Specifications, Advice on Tenders, Valuating. 409-410 Temple Building, TORONTO, CANADA W. T. ASHBRIDGE, C.E. A. M. CAN. Soc. C.E. 609 Temple Building, - TORONTO Special Attention given to MUNICIPAL IMPROVEMENTS Sewerage Works, Water Supply, Pavements. Concrete Construction, Etc.

J. EMILE VANIER CIVIL AND HYDRAULIC ENGINEER (Graduate of the Polytechnic School.)

IMPERIAL BUILDING, MONTREAL SPECIALTIES: Waterworks, Sewers, both Steam and Hydraulic Power Plants, Foundations, Paving, etc. Valuations made of Waterworks Systems, Arbitrations, etc. Plans and Estimates for Public Buildings.

Please mention the CONTRACT RECORD when corresponding with advertisers.





SPECIAL CASTINGS FLANGE PIPE BRANCHES HYDRANTS

LONDONDERRY PIPE FOUNDRY

DRUMMOND, MCCALL PIPE FOUNDRY Com MANUFACTURERS OF

> C1223335/1

VALVES VALVE BOXES

Orrices MONTREAL CANADA LIFE BUILDING Cast Iron Water and Gas Pipes, etc.

Londonderry, Nova Scotia

Notice to Contractors

For Sidewalks, Pavements, Heavy Masonry and Concrete.

Granolithic or Crushed Stone of any size, as we have the most complete plant in Canada. You will consult your own interests by getting our prices. We also make a specialty of Slate, Tile, Granite and all kinds of Stone. Crusher at Jarvis street whorf. THE POWELL GRANITE & MARBLE CO'Y, Phone 3440. Office, 482-484 Yonge St., Toronto

WE can save you money on.....

MANUFACTURED BY . . . Write for Circular

and Prices.

The **R**athbun Gompany DESERONTO, ONT.

JAS. THOMSON, Vice-President and General Manager. J. G. ALLAN, Secretary and Treasurer. ALEX. GARTSHORE, President.

CARTSHORE-THOMSON PIPE & FOUNDRY CO. LIMITED.

HAMILTON ONT.

Manufacturers of ::::

Flexible and Flange Pipe, Special Castings and all kinds of Waterworks Supplies.



3 inches to 60 inches diameter. For Water, Gas, Culvert and Sewer

| CANADIAN | CONTRACT | RECORD. |
|----------|----------|---------|
|----------|----------|---------|

WATER Works PUMPING MACHINERY

Ŕ

We are prepared to equip Municipal or other Water-Works Plants with Pumping Machinery of the latest and most approved designs. We are the largest manufacturers of Steam and Power Pumps in Canada; they are built in all sizes and capacities, and can be implicitly relied upon wherever used. Several excellent second hand pumps in first class condition for water works service on hand at close prices.

SEND FOR CATALOGUE.

NORTHEY MFC. CO. LIMITED 1015 King Street, Subway, TORONTO, CAN.

Prices of Building Materials.

| FILLES OF DUILUN | lig . | maiti | 1015 | |
|--|------------|----------------|--------------|-------------------------|
| PRESSED BRI | ICK | , Per | X ; | |
| TORONTO PRESSED BRICK AN | | • | | OBKS. |
| TORONTO TREBORD DRIVER MI | | .0.B. | | |
| | | on, Ont | | |
| Red No. 1 | | | \$1 | |
| " 2 | | | | 6 <u>1</u> 0 |
| " 3 | | 8 00 | . | 3 10 |
| Buff No. 1 | | | | 000 |
| | | | | 8 50 |
| Brown | | 20 00 | | 5 50 |
| Roman Red | •••• | 25 60 | 3 | 0 50 |
| "Buff | •••• | 38 00 | 3 | 35> |
| | | 35 00 | 4 | 0 50 1 50 |
| Hard Building " Sewers | •••• | 600 | 1 | 1 50 |
| Roofing Tiles, \$20 00 per 1, | ~~~~ | Su mi | Montre | a). |
| | • | - | | |
| DON VALLEY PRESSE | | | | |
| | | .0.B. | | |
| | Dop | Valley | . Mon | treal. |
| Red A | | 18 00 | | 34 CO |
| Red B | | 16 00 | | 20 00 |
| Red C Trojan and Co inthian | | 13.0 | | 17 00 |
| Porpeiian | | 21 (0 | | 28 00 |
| Athenian and Egyptian | | 22 00 25 00 | | 29 00 31 00 41 00 |
| Tyrian | | 35 00 | | 31.00 |
| Sicilian | | 40 00 | | 45 00 |
| Roman | | 35 00 | | 40 00 |
| Carthaginian | | 40 45 | | 45 00 |
| Ornamental | 0 00 | 100 00 | 30 00 : | |
| Common insides | | 6 00 | | |
| Hard sewers | | 7 50 16 00 | | |
| Vitrified pavers, 1sts | | | | 22 00 |
| 11 11 2nds | | 10 00 | | 15 00 |
| COMMON BRI | CK, | Por 2 | Ы. | |
| | | F.O.B. | F.0 |).B. |
| | | Foronto | | |
| Common Walling | 70 | o 8 oo | 7 59 | 800 |
| Good Facing | 80 | 0 0 0 0 | | 8 <u>5</u> 0 |
| Sewer | | o 90) | 8 <u>s</u> o | 000 |
| STON | E. | | | |
| Common Rubble, per tosse, | | | | |
| delivered Large flat Rubble, per toise, | | 10 0 | | 11 CO |
| delivered | | 14 CO | | 18 co |
| Foundation Blocks, per c. ft. | | 30 | | \$0 |
| Granite (Stanstead) Ashlar, 6 | | 30 | | 20 |
| in. to 12 in., rise ofn., per ft. | | | | 25 |
| Amherst Red Sandstone, | | | | -3 |
| Amnerst, ri.S., per cab. it. | | I CO | | 75 |
| Kent Free stone Quarries, | | | | |
| Montion, N.B., per cu. ft. River John, N. S., brown | | 1 00 | | 95 |
| Kiver John, N. S., brown | | | | |
| Freestone, per cu. ft Port Philip, N. S. Brown | | 95 | | 95 |
| Sandstone | | | | |
| | | | | |

| INDEX | TO ADVERTISEMENTS | 5 |
|--------|-----------------------------------|---|
| in the | "Canadian Architect and Builder." | |

Architecte. Ontario Directory....III Quebec Directory....viii drohitectural Sculp-tors and Carvers, Holbrook & Molling-ton.....i Architectural Iron Work. Dominion Bridge Co. 1 Art Woodwork Southampton Mfg.Co. II Artists' Materials. Hearn & Harrison... 111 The Art Metropole... 111 Builders' Supplies. Brenner, Alex. ... i Montreal Directory. x O'Neil, Wm..... vii Ontario Lime Association.... x Rice Lewis & Son.... IV Toronto Directory... x

 Toronto Directory... x

 Building Slone

 Dealors.

 Amherst Red Stone

 Quarry Co.....iii

 Brodie, James....iii

 Credit Forks Mining & M'g. Co.....iii

 Fssey, W. H....iii

 Hood & Sonviii

 Hood & Sonviii

 The Longford Quarry Co.....iii

 Deditional Co., D...iii

Builders' Hardware, Rice Lewis & Son.... IV Rice Lewis & Son.... IV BRICKS. Beamsvi le Brick & Torn Cotta Co.... ix Ton nto Pressed Brick & Terra Cotta Co.... iii Contractors' Plant and Machin My Rice Lewis & Son.... IV Comonts. Commerta. Bremner, Alex.... i Commercial Wood & Cement Co...... IV Owen Sound Portlant Cement Co..... IV The Rathbun Co... ix

"Scories" Faving Blocks, "X34"×5"..... "Scories" Paving Blocks, B'×34"×4"..... Masillon..... Quebec and Vermont rough granite for building pur-poses. per c.ft. fo.b. quarry For ornamental work, cn. ft. Granite paving blocks, S in t 12 in.x6 in.x44" in. per M. Gran te curbing stone, 6 in.x 20 in. per lineal foot.... CREDIT VALUE

Rubble, per car or 15 tons... Brown Coursing, up to 10 in , per sup. yard..... Brown Dimension, per cub.ft. Grey Coursing, per sup. yard Grey Dimension, per cub. ft.

Rocfing (¥ squars).

LONGFORD STONE. Rubble, per 30. M. car Ashlar, per cub. vd. Dimeasion, per cub. it

untaling green black

CEMENT, LIME, etc.

Tena Cotta Tile, per sq.... Orramental Black Slate Roofing

45 00 30 00

40 40

SLATE. Toronto. Montreal.

700

CREDIT VALLEY STONE. F.O.B Quarries.

I CO

50 00 70

5 00

20 00

1 Ú5 1 50 I 50

50 2 50

Creosote Stains Cabot, Samuel..... IV Interior Decoration Elliott & Sen Company iv Lime. Ontario Lime Associa-tion..... Drying Apparatus Cammer & Son Co... 2: Drain Pipe Brenner, Alex..... i Hamilton and Toronto Sewer Pipe Co..... ix Luxfer Prisms. Luxfer Prism Co..... vi Legal. Quinn & Morrison.. 111 Elevators Fenson, John..... I Leitch & Turnbull.... I Miller Bros & Toms.. iv Morse, Williams & Co. ix Mantles, Grates, and Tiles. Chas. Rogers & Sons Co.....iv Holbrook&Mollington i Rice Lewis & Son....IV Kinbossed Moulding Boynton & Co..... Mail Chutes. The Cutler Mfg. Co..viii Mortar Colors and Shingle Stains. Cabot, Samuel IV Muirhead, Andrew.... i Folding Partitions. Seaman, Kent & Co.. vi Springer, O. T..... vii Fireproofing. Montreal Terra Cotta Lumber Co x Rathbun Co ix Ornamental Iron Work. DennisWire& Iron Co iv Toronto Fence & Orna-mental Iron Works. iv Flagstaffs and Windmills. Gould, Shapley & Muir..... Paintors. Montres Directory... Toronto Directory.... 11 Grilles and Railings. Dennis Wire & Iron Co. iv Toronto Fence & Orna-mental Iron Works. iv Southamptor Mfg. Co II Plasterers Hynes, W. J..... 22 Paints & Varnishes Muirbead, Andrew ... 1 Parquetry Floors Elliott & Son Company 19 Granite Brunet, Jos iii Brodie, James..... iii Stanstead Granite Quarries Co..... iii Plate Glass The Consolidated Plate Glass Co..... i Toronto Plate Glass Co..... iv Heating. Boston Blower Co.... III Dominion Radiator Mfg Plumbers Montreal Directory... x Toronto Directory.... x Reflectors Frink, I. P..... 111 Booting Materials Ormsby & Co., A B... 1 Metallic Roofing Co. Inks Stueber, Harry..... III 55

| Th | e fol | lowing | are the Montrea | quota | tions to | builder | s for na | il |
|-------|---------|----------------------|--------------------|-------|----------|--------------|----------|----------|
| | | | 6od, per | | | 2 65 | 2 | 65 |
| | | | | | | 2 75 | | 75 |
| | | | | | | | | |
| | | | • | | | | | |
| | | | r 100 lbs | | | 2 65 | | 65 |
| | | | ut | | | 2 75 | | 75 |
| 8d, 9 | а, а | | :: | | | 2 8c | | 8) |
| 6d, 7 | | | " | | | 2 95 | | 95 |
| 3d, | 241 | 14 64 | " | | | 3 05 3 30 | | 05 30 |
| 2d, | | | " | | | 3 65 | | 65 |
| | t sni | ikes. re | cents pe | | | | 3 | •, |
| Št | eel P | fails. 1 | oc. per k | | rtra. | ••• | | |
| | | | to pase t | | | | | |
| | | | Iro | n P | ipe: | | | |
| Iron | pipe | , 3 <u>(</u> in | ch, per lo | ot | | óc. | 60 | : |
| 11 | - U | - 25 - 1 |) [–] 11 | •• | | 7 8]4 | 7 | |
| ч | | - 54 N | | •• | | | 8 | 6 |
| - 11 | | X | | •• | | [2 | 12 | |
| •1 | 11 | I 1 | | • | | 17 | 17 | |
| | 11 | 14 | | • | | 24 | 24 | |
| | | - 236 - | | •• | | 30 | 30 | |
| | • | 2 1 | | •• | | 43 | 43 | |
| | | | | | ipe: | | | |
| Lead | l pip | e, p er l | b | •••• | | 79 | 25 pe | ŗ. |
| WAS | te pi | pe, per | 16 | •••• | | 772] | cent. d | 12 |
| | | | Galvar | iizea | l Iron | : | | |
| Ada | n'e- | Mars | Best and | One | en's Hea | ad and (| Doollo: | |
| 16 | to 2 | 4 91189 | e, per lb. | | AVC. | AYAC. | 4 | ¥ |
| 20 | gua | ZC, | | | 4% | 5 | | Х |

| 472 |
|-------------------|
| 4% 4% lcst. |
| |
| 2 jo 2 31 |
| 2 60 |
| 2 OS 7 30 |
| |