

CANADIAN Contract Record

*A Weekly Journal of Public Works, Tenders,
Advance Information and Municipal Progress*

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. 15.

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THE CANADIAN CONTRACT RECORD

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TENDERS WANTED

for the Bricking in of a pair of 66"x14" Boilers at Oshawa Water Works.

Plans at specifications can be had from
CANADA FOUNDRY CO., LIMITED,
14 King Street East, Toronto.

Tenders for Debentures:

Sealed tenders will be received by the undersigned up to 4 o'clock p. m., on the 14TH DAY OF NOVEMBER, 1904 for the purchase of the following separate series of debentures of the Town of Walkerton, viz:

1. 18 Debentures aggregating \$3398.51 repayable in annual instalments of principal and interest at 4 per cent. for a period of 18 years. These are issued for the extension of the water works system.
2. Local improvement debentures amounting to \$2343.34 payable in 20 years with interest yearly at 4 per cent. These debentures will be available to the purchaser after 2nd January, 1905.

The highest or any tender not necessarily accepted.

D. McKECHNIE,
Acting Town Clerk.

Walkerton, October 25, 1904.

CONTRACTS OPEN

WOLSELEY, N.W.T.—R. A. Magee will build a business block here next spring.

HULL, QUE.—The city council will issue \$47,500 of debentures for local improvements.

NELSON, B.C.—The Canadian Oil Co. of Toronto are establishing an oil warehouse here.

TEESWATER, ONT.—The by-law granting a loan to Arscott Bros. was carried last week.

NEWCASTLE, N. B.—The Rose Bank Lumber Co. intend building a large saw-mill at this place.

ARCOLA, N.W.T.—J. J. Murison desires bids by December 1st for purchase of \$17,000 of debentures.

FISKERVILLE, ONT.—The Presbyterian church will likely be remodelled and a furnace installed.

ST. JOHNS, QUE.—A by-law was carried here last week granting a loan of \$6,000 to the St. Johns Brick Co.

WELLAND, ONT.—E. Hughes has purchased property on which he will build a confectionery store and restaurant.

EDMONTON, N.W.T.—A movement has been started looking to the erection of a Y. M. C. A. building in this town.

RAT PORTAGE, ONT.—Gallagher, Holman, La France & Co. are about to erect a large abattoir in this town.

KILDONAN, MAN.—A by-law was carried here recently to provide funds for the building of three new schools.

PEMBROKE, ONT.—It is proposed to submit a by-law to the ratepayers to borrow \$10,000 for local improvements.

BRUCE MINES, ONT.—The Methodist congregation purpose building a church next spring, to cost about \$5,000.

ST. ALEXIS, QUE.—The Department of Public Works, Ottawa, are this week taking tenders for completion of the wharf here.

ROSSLAND, B. C.—The city is arranging to provide an additional water supply next year, at an estimated cost of \$50,000.

ORILLIA, ONT.—It is stated that S. O. Church & Bro., of Sand Point, Ont., will establish a coeprage stock mill here.

KINCARDINE, ONT.—A. McD Allen, of Goderich, has submitted a proposition to the town council to build a summer hotel here.

STEWARTVILLE, ONT.—The bridge over the Madawaska river at Clay Bank will be reconstructed or a new structure erected.

PAKENHAM, ONT.—The Dowd Milling Co. have completed the repairs to their dam and are about to build an addition to their elevator.

CALGARY, N.W.T.—The contract for erection of a six-story building for T. J. S. Skinner has not yet been awarded. F. J. Lawson is architect.

ST. BONIFACE, MAN.—It has been decided to begin street improvements by having Tache and Provencher avenues paved with asphalt.

PALMERSTON, ONT.—A by-law was carried here to provide money to extend the electric light plant and to furnish the public library building.

DIGBY, N.S.—The Dominion Atlantic Railroad contemplate building a large hotel at Battery Point here, to be four stories, with 200 bedrooms.

COBOURG, ONT.—John Coates,

president of the Ottawa Gas Co., has purchased the Cobourg Gas Works and intends to improve the plant.

GODERICH, ONT.—James Thomas is excavating for a new house to be built on Elgin ave. Robert McCaw will build a residence on Waterloo street.

PINCHER CREEK, N.W.T.—The Town Council are figuring upon the installation of a waterworks system, the supply to be brought about three miles.

CRANBROOK, B.C.—The Bell River Falls Power & Light Co. have commenced work on their electric power plant. A flume two miles in length will be constructed.

FERNIE, B.C.—The Elk Lumber & Manufacturing Co. are busy preparing a site for their proposed new saw mill.—A new Episcopal church has been commenced here.

DUTTON, ONT.—The by-law granting certain concessions to J. B. Coates to assist him in extending his manufacturing establishment was carried by the ratepayers last week.

OTTAWA, ONT.—It is probable that the Public School Board will purchase a site for a new school in Dalhousie Ward and erect a building as soon as the money can be obtained.

DELORAIN, MAN.—D. L. Livingston, Secretary-Treasurer of the Corporation, will receive bids up to November 18th for the purchase of \$6,000 fire protection debentures.

PETEWAWA, ONT.—F. Gelinas, Secretary Department of Public Works, Ottawa, is asking for tenders up to Friday, November 11th, for the construction of a pile wharf and approach here.

GAINSBORO, N.W.T.—Cameron & Sons, of Glencoe, Ont., have notified the Council of their acceptance of the offer made them to build a 100 barrel grist mill here. Work will begin next spring.

ARCOLA, N.W.T.—The erection of a town hall has been postponed until next spring.—It has been decided to form a joint stock company for the purpose of building a skating and curling rink.

GUELPH, ONT.—The Boundary Line Committee of the County Council have decided to build a steel structure to replace the bridge across the Speed river on the lane between Nichol and Eramosa.

RAINY RIVER, ONT.—Several contractors have inspected the site of the proposed power dam at Coochiching Falls with a view of tendering on the work, which will be commenced early next spring.

AMHERSTBURG, ONT.—Tenders for certain dredging at this place will be received at the Department of Public

Works, Ottawa, up to Tuesday, November 15. Plans on application to the Postmaster.

WINDSOR, ONT.—Owing to inability to make suitable arrangements with property owners, it is said that the Belt Line railway project has been abandoned for the present. The road was to have run from Walkerville to Sandwich.

BRANDON, MAN.—W. A. Elliott, architect, is preparing plans for a brick residence for E. L. Christie, cost about \$8,000, to be commenced next spring.—Same architect has prepared plans for addition to Beaubier Hotel here, to cost \$6,000.

BRANTFORD, ONT.—Stewart, Stewart & Taylor, architects, have been instructed to prepare plans for the complete remodeling of the Kerby House for Peter Wood.—Same architects will have charge of the alterations to be made to the interior of the post office in this city.

FORT GREVILLE, N. S.—Tenders are invited by the Department of Public Works, Ottawa, up to Saturday, 12th inst., for the construction of an extension to the breakwater at this place. Plans on application to the Postmaster here, at the office of C. E. W. Dodwell, Halifax, and at the Department at Ottawa.

QUEBEC, QUE.—Dr. E. Morin has been granted a permit for the construction of a building on Mountain Hill, to cost \$13,000.—It is understood that plans are being prepared for another large addition to the Ross rifle factory in this city, to comprise new shooting gallery and testing room.

SOUTH AUGUSTA, ONT.—Edwardsburg and Augusta Township Councils are about to call for tenders for the construction of a bridge on the town line between the two townships, in accordance with plans prepared by G. L. Brown, township engineer; estimated cost, \$1,800.

KAMLOOPS, B.C.—A company has been formed here to erect a commodious summer hotel on Fish Lake. Dr. M. S. Wade is president, and D. Lusk vice-president and manager.—The Board of Managers of the Royal Inland Hospital will shortly take up the question of enlarging the building.

NIAGARA FALLS, ONT.—W. R. Price will build a residence on Ellis street.—The Governor-in-Council has approved of the by-law to issue \$8,000 of debentures for waterworks extensions, and similar action is expected in connection with the by-law to raise \$15,000 for extending the electric light plant.

HALIFAX, N.S.—During the first two weeks of October seventeen permits were issued by the Building Inspector for repairs and alterations, including one for the restoration of Pickford & Black's stone buildings, offices and warehouses, destroyed by fire. Three permits for new houses were taken out.

KIRKFIELD, ONT.—Tenders are invited by the Department of Railways and Canals, Ottawa, up to Wednesday, December 14, for the construction of a hydraulic lift lock at this place. Plans at the Department at Ottawa and at the office of the Superintending Engineer of the Trent Canal, Peterboro.

GLACE BAY, N. S.—The ratepayers have decided to spend \$25,000 for the purpose of extending the electric light plant.

RAT PORTAGE, ONT.—The by-law to raise \$4,000 for building a foot bridge over the C.P.R. tracks at Julius street and \$1,000 for approaches for new bridge over east branch of the Winnipeg river was carried by the ratepayers last week.

VICTORIA, B.C.—George H. Webster, Division Engineer C.P.R., Vancouver, is prepared to receive tenders

until December 29 for the erection of a seven-storey stone and brick hotel in this city. Plans at the office of F. M. Rattenbury, architect.—Mr. Rattenbury has just taken tenders on the erection of a hotel at Oak Bay.

OWEN SOUND, ONT.—The Carney Lumber Co. are purchasing property on which to build their saw mill, although the by-law to confirm the agreement made by the council with the company will not be submitted to the ratepayers until the January elections. At the annual meeting of the Rink Company, held last week, it was decided to make improvements to the Boyd street rink, the work to be commenced next spring. An addition will be built, the basement fitted up as lavatories, and a hot air heating plant installed.

STRATFORD, ONT.—Willis Chipman, C.E., of Toronto, has submitted to the City Council his report on the waterworks system. He recommends an expenditure of upwards of \$100,000 on improvements, and suggests the sinking of two artesian wells.—J. W. Leonard, president of the Guelph and Goderich Railway, was in the city last week and stated that not only would a branch be built from Stratford to Hawkesville, but that the extension of the Port Burwell Ingersoll road from Thamesford north to Stratford was under consideration.

FREDERICTON, N. B.—C. H. LaBillico, Commissioner of Public Works, will receive tenders up to November 28 for building Ketchum's wharf over Kennebecasis river in King's County, and for rebuilding Louison Brook bridge in Restigouche County. Plans of the former at office of Hon. William Pugsley, Attorney General, St. John, and of the latter at the office of the Dalhousie Mercantile Co., Dalhousie, and at the post office, Charlottetown.—Tenders for the construction of an addition to the drill hall in this city close at the Department of Public Works, Ottawa, this week.

LONDON, ONT.—Herbert Matthews, architect, is preparing plans for a residence for E. Jeffrey, of this city.—Plans have been prepared for a new power house for the Southwestern Traction Co. and as soon as the site is chosen tenders are to be called for. The building and equipment will cost about \$200,000. A. E. Welch is manager of the company.—During the month of October 34 building permits were issued from the city engineer's office.—The sum of \$20,000 for the enlargement of the post office in this city was included in the last Dominion government estimates, and it is understood that plans for the work are now being prepared.

VANCOUVER, B. C.—Thomson Bros. have leased the property corner Hastings and Abbott streets and have decided to build another storey to the new block they are now building on that site.—The property and buildings of Ross & Howard, founders, on Carrall street, have been purchased by Hop Wah & Co. of Nanaimo, who intend erecting on part of the property a brick business block, to cost about \$20,000, on which work will be commenced about the first of the year. Ross & Howard, who have extensive works in the east end, purpose building a large addition there.—Armstrong, Morrison & Co. will install a plant on False Creek for the manufacture of cement blocks. They will also build a warehouse for the accommodation of cement, sand, etc.

HAMILTON, ONT.—The City Engineer has reported that the roadway between the car tracks should be repaired. The estimate of the cost is: Vitrified brick, \$51,520; cedar block, \$18,318; macadam, \$13,739. A by-law will be submitted to the ratepayers to raise the

money.—Dr. Wolverton has purchased the property at the north-west corner of Bay and Dale streets and will next spring erect a dwelling thereon.—The lot owned by the estate of the late James Cummings, on south side of Main street, east of Spring street, is to be utilized for building purposes. A building is also to be erected on the north-east corner of Hannah and Queen streets.—George Clark will build two brick houses on the Britannia Park property on Wentworth street, at a cost of \$3,200.

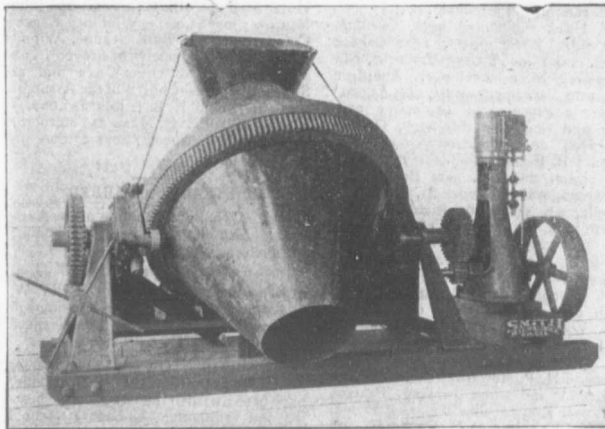
WINNIPEG, MAN.—Tenders close Tuesday, 8th inst., at the City Clerk's office, for supply of 42,300 feet of sewer pipe and a quantity of bends and junctions.—J. H. Cadham, architect, has taken tenders for additional storey on the Woodbine Hotel, Main street.—Inspector Howe, of the Canadian Underwriters' Association, recommends the immediate construction of a high pressure system of water mains for fire purposes only, with a complete system of new pumps and high pressure engines, the pumping station to be located on the Red river.—The City Electrician has recommended that the wires for the fire alarm system be placed under ground.—The new retail block to be built by the J. H. Ashdown Company will be six-storey. Work will be commenced at once.—It is learned this week that the plans for the Canadian Northern Railway depot are not likely to be decided upon for a few weeks. In the meantime the site is being prepared and work will be commenced early in the spring.—Engineers are locating a site for the new Canadian Northern Railway bridge to be built across the Assiniboine river, east of the Main street bridge. It will be a steel structure, with concrete abutments.

MONTREAL, QUE.—Plans of seven-storey stone and brick hotel to be built by the C.P.R. at Victoria, B.C., may be seen at the company's office in this city. Tenders close December 29.—It is understood that the Department of Militia, Ottawa, are preparing plans for a new barracks to be built in this city.—The new buildings to be erected by the Canada Car Company will cover 360,000 square feet. Work will likely be commenced this fall. W. P. Coleman is president and manager of the company.—The Incline Railway Co. have asked the Council for an extension of franchise for 25 years and the privilege of building an electric railway on the mountain top.—Plans are being formulated to rearrange the present Montagnard rink and remodel it on the lines of the Arena.—L. R. Montbriand, F. G. Todd, and J. Marchand have each submitted plans for a lock-out to be built on the mountain by the Parks & Ferries' Committee. The cost of executing the plans ranges from \$14,000 to \$25,000.—The following building permits have been granted: Odilon Duelle, two-storey house, Frontenac ave., cost \$1,600; Theop Sagols, two-storey house, Huntley st., cost \$2,000; F. Giroux, five-storey house, Chambord st., cost \$2,500; W. Clark, house and warehouse, Wolfe st., cost \$12,000 (W. E. Doran, architect); Miss Anna Larose, two-storey house, Labelle st., cost \$1,500; R. G. Noel, two-storey house, Ash ave., cost \$2,000; Fred Schnauffer, one-storey house, Charbeuioix st., cost \$6,000 (Isaac Collins, contractor); Isidore Labelle, two-storey house, St. Hubert st., cost \$1,800; F. Tremblay & Co., pair three-storey houses, St. Denis st., cost \$10,000; P. Smirlie, one-storey house and two stores, St. Charles Baromee st., cost \$4,000 (J. Bulmer, contractor); William Tatley, three-storey house, Oxenden ave., cost \$9,000 (A. F. Dunlop, architect); W. Labrecque, three-storey house, St. Urbain st., cost \$3,000; Jos. Ferron, two-storey house, St. Hubert



st., cost \$1,400 storey house, \$1,000; H. St. Hubert st., Smith, nine-st. cost \$12,000; Roy Domina, ings, St. Edwa

TORONTO architect, is p post office to b to be 80x35 fe North Americ phia, have pur property on l convert the bu factory.—A sy Platt residence build an apart C. F. Wagne street, is askin inst. for ill tra tion of a brick Queen street e at 22 August three pairs of l Bell, 77 Adel ders for plumb of new house.—bu lt at Echo l the office of H tion Life build is about to be road, opposite of Education v Kindergarten school, with children. Ha High schools: Institute are o that a new hig built in the nei architect, will a power house Falls, Ont., fo Company.—Th that it will be t can be comm sewerage syste ment have offi wards the ere hospital on cor an equal sum south-east co streets has bee Hammond, w fine office bui dredging to be may be seen at Confederation Building permi follows: G. S.



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st., cost \$1,400; P. Paquette & Son, one-storey house, De Montigny st., cost \$1,000; H. Filteau, two-storey house, St. Hubert st., cost \$1,800; Jos. Leath Smith, nine-storey building, Selkirk ave., cost \$12,000 (J. S. Smith, architect); Roy Domins, two pair two-storey buildings, St. Edward St., cost \$8,000.

TORONTO, ONT. — S. G. Curry, architect, is preparing plans for a new post office to be built in North Toronto, to be 80x35 feet, finished in oak. The North American Saw Co., of Philadelphia, have purchased the old Dougherty property on Lombard street and will convert the building into a branch saw factory.—A syndicate has purchased the Platt residence on Jarvis street and will build an apartment house on the site.—C. F. Wagner, architect, 28 Toronto street, is asking for tenders by the 4th inst. for all trades required in the erection of a brick and frame dwelling on Queen street east.—Tenders are wanted at 22 Augusta ave., for brick work of three pairs of houses on Euclid ave.—R. Bell, 77 Adelaide street east, wants tenders for plumbing and hot water heating of new house.—Plans of pile wharf to be built at Echo Bay, Ont., may be seen at the office of H. A. Gray, C.E., Confederation Life building, this city.—A residence is about to be commenced on Crescent road, opposite Lampport ave.—The Board of Education will build an annex to the Kindergarten room at Elizabeth street school, with seating capacity for 80 children. Harbord and Jamieson ave. High schools and Jarvis street Collegiate Institute are overcrowded and it is likely that a new high school will have to be built in the near future.—E. J. Lennox, architect, will shortly call for tenders for a power house to be built at Niagara Falls, Ont., for the Electric Development Company.—The City Engineer states that it will be three months before work can be commenced on the east end sewerage system. The Ontario government have offered to give \$100,000 towards the erection of a new general hospital on condition that the city give an equal sum.—The property on the south-east corner of King and Jordan streets has been purchased by Osler & Hammond, who will probably erect a fine office building on the site.—Plans of dredging to be done at Amherstburg, Ont., may be seen at the offices of H. A. Gray, Confederation Life Building, this city.—Building permits have been granted as follows: G. S. Ransom, pair two-storey

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concrete and brick dwellings, e.s. Mutual st., near Wilton ave., cost \$6,000; Herbert Galbraith, pair two-storey brick dwellings, east side Delaware ave., near Bloor st., cost \$2,400; H.H. Suydam, two two-storey brick dwellings, east side Rathnally ave., near Cottingham street, cost \$5,400; George Phillips, four two-storey brick dwellings, 570, to 584 Huron street, cost \$18,000; W. A. Elliott, pair two-storey roughcast and concrete dwellings, Fern ave., near Sorareun, cost \$2,400; Robert Hewitt, two two-storey stone and brick dwellings, 26 and 28 Fuller street, cost \$3,000; F. H. Squires, two-storey and attic stone and brick dwelling, east side Euclid ave., near Herrick street, cost \$3,800; Joseph Estate, five-storey brick and cut stone warehouse and office building, 76 Bay street, cost \$16,000; A. B. Crosby, two-storey and attic brick and cut stone dwelling, 136 West Roxborough street, cost \$4,500; John McLeod, pair 2 1/2 storey brick and cement dwellings, 6 and 8 Roseberry ave., cost \$6,000; J. J. Walsh, 2 1/2 storey stone and brick dwelling, 137 King street west, cost \$4,500; J. H. Vivian, one-storey brick and cement warehouse, east side Bellwoods ave., near Robinson street, cost \$3,000; Joseph Bryant, pair two-storey brick dwellings, west side Montrose ave., near College street, cost \$3,200; John Kee and Joseph Swain, three pair two-storey brick, stone, and cement dwellings, west side Dundas street, near Birtle ave., cost \$10,000; Fred Julian, two-storey roughcast dwellings, east side Macdonell ave., cost \$1,100; Monetary Times Co., one-storey concrete and steel addition to building for storage purposes, north-west corner Court and Church streets, cost \$2,200; Consumers Gas Co., one-storey

corrugated iron storage shed, Front street east, near Parliament, cost \$3,000; J. F. Hass, 2 1/2 storey brick dwelling, west side Clarence ave., near College street, cost \$6,000; Cecil Horrocks, pair two-storey brick dwellings, Aberdeen ave., near Parliament street, cost \$3,000; Benjamin Pryce, pair two-storey concrete and roughcast dwellings, Ossington ave., near Harrison street, cost \$2,200; R. Brundle, two-storey concrete and plaster dwelling, near Bloor street and Ossington ave., cost \$1,500; C. R. Rundie, 2 1/2 storey brick dwelling, 25 Scarth road, cost \$6,000; H. S. Alexander, pair 2 1/2 storey brick and stone dwellings, 43 and 45 Chicora ave., cost \$5,800; Wm. Saul, two-storey stone and brick dwelling, south side Davenport road, near Hazelton ave., cost \$2,000; J. J. Walsh, four 2 1/2 storey stone and brick stores and dwellings, northeast corner Queen and Fuller streets, cost \$14,000; H. P. Howard, two-storey and attic brick and stone dwelling, Pearson ave., near Roncesvalles ave., cost \$2,000; W. G. Chisholm, pair two-storey and attic stone and brick dwellings, 2 and 4 Delaware ave., cost \$6,000; M. Shuttleworth, pair two-storey and attic stone and brick dwellings, east side Bathurst street, near College, cost \$4,500; T. J. Madill, two two-storey and attic brick dwellings, north side Walker ave., near Yonge street, cost \$5,000.

FIRES.

Grand Trunk station at Simcoe, Ont., totally destroyed; loss \$5,000.—Premises of the Toronto Picture Manufacturing Co., 50 Esplanade street east, Toronto, damaged to extent of \$8,000.—Saw mill of the Laurie Lumber Co., Marysville, B. C.,

totally destroyed; loss \$5,000.—Globe Hotel at 220, B. C., owned by John Morrow; loss \$3,000.—Winnipeg Casket Co's factory on Selkirk avenue, Winnipeg, almost completely destroyed; loss \$30,000.—Ford & Greer's saw mill at Stoneleigh, Ont.—Church of the Assumption, St. John, N. B.; loss \$42,000.—Planing mill of E. H. Mann at Peterboro, Ont., totally destroyed; loss \$7,000, insurance \$4,500.

CONTRACTS AWARDED.

NELSON, B.C.—Roofing of the Agricultural Exhibition building; S. Thomas, contractor.

HESPELER, ONT. — New wood-working shops for Clark & Demill; W. A. Krebs, contractor. Main building will be 212x67 feet, with boiler house 24x28 feet.

WESTPORT, ONT. — The James Smart Manufacturing Co., of Brockville, have been awarded the contract for heating and ventilating the Separate school building here with two Kelsey generators

RIDGEWAY, ONT.—Hanna Bros. have secured the contract to supply the building material for a large summer hotel to be built at Snake Hill, near Fort Erie, by C. D. Carrick, of Buffalo.

ST. JACOBS, ONT. — Woolwich Township Council have sold \$25,000 of bridge debentures to the Dominion Securities Corporation, Toronto, at \$24,735. William C. Brent, Toronto, tendered at \$24,638.

BARRIE, ONT.—Thomas Kennedy, architect, has awarded the following contracts: Residence for P. Dale to Thomas McKessik; stable for Dr. Ross, carpenter

ter work to A. to S. W. Cline.

WINNIPEG and Light Con purchase a fire capacity per m. Engine Works at \$6,950, and Nott Manufact at \$6,750.

HAMILTON Elevator Co., th ed the following A. A. Allen & C passenger eleva Davis Leather ford Chair Co., Winona; Cana ers, Wingham; Cannington.

NIAGARA l house for Ontar Leod, contract \$12,000.—Subs Electrical Dev and brick, The Falls, \$40,000; dry Co., Toro work, T. Gea and glazing, E. ized iron work, to; roofing, Hu contracts agre Lennox, Toront

TORONTO, ing & Paving C contract for lay water main on 450. There w highest being \$ secured the oth as follows: 20- \$1,592; excava \$1.35 per lineal additional \$1; per cubic yard George street, 1 inch main, \$1.10 cents; 6-in. cation, \$1 per of Education ha for excavation a Broadview ave. Son, at \$7,950. the highest: bein

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ter work to A. Campbell, the brickwork to S. W. Cline.

WINNIPEG, MAN.—The Fire, Water and Light Committee have decided to purchase a fire engine of 1,200 gallons capacity per minute from the Waterloo Engine Works Co., of Brantford, Ont., at \$6,950, and a similar engine from the Nott Manufacturing Co., of Minneapolis, at \$6,750.

HAMILTON, ONT.—The Parkin Elevator Co., this city, have been awarded the following contracts for elevators: A. A. Allen & Co., Toronto, freight and passenger elevator; freight elevators for Davis Leather Co., Newmarket; Stratford Chair Co., Stratford; E. D. Smith, Winona; Canada Furniture Manufacturers, Wingham; G. H. Woodward & Co., Cannington.

NIAGARA FALLS, ONT.—Store house for Ontario Power Co.: Alex. McLeod, contractor; 100x150 feet, cost \$12,000.—Subsidiary power house for the Electrical Development Co.: Concrete and brick, Thomas Mumford, Niagara Falls, \$40,000; steel work, Canada Foundry Co., Toronto, \$55,000; carpenter work, T. Gearing, Toronto; painting and glazing, E. Bolton, Toronto, galvanized iron work, Wheeler & Bain, Toronto; roofing, Hutson & Son, Toronto. The contracts aggregate about \$25,000. E. J. Lennox, Toronto, is the architect.

TORONTO, ONT.—The Constructing & Paving Co. have been awarded the contract for laying a 36-inch cast iron water main on Bathurst street, at \$36,450. There were seven tenders, the highest being \$93,658. They have also secured the other pipe laying contracts, as follows: 20-in. main, Dupont street, \$1,502; excavating for 20-inch main, \$1.35 per lineal foot; 12-in., 80 cents; additional \$1; concrete buttresses, \$6.25 per cubic yard; laying 16-in. main, St. George street, \$2,900; excavating for 16-inch main, \$1.12 per lineal foot; 12-in., 80 cents; 6-in., 40 cents; additional excavation, \$1 per cubic yard. The Board of Education have awarded the contract for excavation and masonry work of new Broadview ave. school to H. Lucas & Son, at \$7,950. There were three tenders, the highest being \$10,525.

BUSINESS NOTES.

Robert Ball & Company, marble cutters, Montreal, have dissolved.

The plumbing firm of Cuthbertson & Company, Edmonton, N.W.T. has been dissolved.

The Canadian Vault Company, Limited, Winnipeg, Man., is applying for a charter of incorporation.

Oscar Cournoyer and Arthur Gagne have registered as proprietors of the busi-

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ness of Cournoyer & Gagne, painters, etc., Montreal.

E. James & Company, roofers, etc., Montreal, have dissolved.

Joseph Ethier is president of the St. Lawrence Construction Company, Limited, Montreal.

Noel Paquet, tinsmith, Montmagny, Que., is announced to have assigned to V. E. Paradis.

The capital stock of the Winnipeg Paint & Glass Company has been increased from \$75,000 to \$250,000.

The assets of the London Builders' Supply & Manufacturing Company, London, Ont., are to be sold by auction.

A demand of assignment is reported to have been made upon C. E. Brouder, plumber and tinsmith, St. Hyacinthe, Que.

The Grand Trunk Railway are constructing a siding from Atwood, Ont., to the marl beds of the Atwood Cement Company at that place.

Mr. John S. Fielding, consulting engineer, has removed from 20 King street east, Toronto, to more commodious offices at 15 Toronto street.

About a hundred shareholders of the Raven Lake Portland Cement Company last week visited the new works of the company at Elliott's Falls. They found a modern plant in operation.

The James Smart Manufacturing Company, of Brockville, Ont., have received a request from Pekin, China, to prepare

and forward a plan, with specifications, for the heating and ventilating of a new church being built there.

The British Columbia Plate Glass & Importing Company have purchased the leaded glass business of James Bloomfield at Vancouver, B.C. The new company is composed of A. P. Bougardus and C. A. Wickens. They intend to confine their efforts to leaded glass and painting and interior decoration and have secured the agency for Ramsey's celebrated paints.

REMOVAL NOTICE.

On the first of November, 1904, the Winnipeg office of this Journal will be removed to Rooms 720 and 721 of the new Union Bank Building. This building, which is just nearing completion, is thoroughly fireproof and in construction and equipment is the equal of any on the continent.

A standing invitation is given readers and friends of the Journal to call when in Winnipeg. Any possible information or assistance will be gladly furnished them.

THE WEAK LINK!

Contractors are particular that their cement is of a good quality and will stand the test. They use the best brick and stone to be had, but when it comes to mortar many think that any old SAND is good enough even if yellow with earth and loam. Water Washed Sand makes mortar 50 per cent. stronger and costs no more. Why not specify and use it?

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NEW COMPANIES.

Ballarat Mining Company, Limited, Toronto, incorporated, capital \$300,000. Directors, J. S. Lovell, accountant, William Bain, book-keeper, and others.

Electric Water Heater Company, Limited, incorporated at Victoria, B. C., capital \$50,000, to acquire and manufacture the Instantaneous electric water heater.

Toronto Home Building Company, Limited, Toronto, incorporated, capital \$100,000. Directors, James E. Day, J. M. Ferguson, barristers; Hugh F. McIntosh, manufacturers' agent, and others.

Dominion Natural Gas Company, Limited, Hamilton, Ont., incorporated, capital \$500,000. Directors, W. J. Aikens, Henry Cockshutt, E. L. Cockshutt, J. S. Hamilton and Edmund Sweet.

Grafton & Co., Limited, Dundas, Ont., incorporated, capital \$500,000, to manufacture clothing, carpet, etc. Directors, J. B. Grafton, J. J. Gratton, W. A. Davidson, and C. J. O'Connor.

The Hay Foundry Co., Limited, Listowel, Ont., incorporated, capital \$40,000, to manufacture implements, machinery and castings. Directors, J. C. Hay, F. W. Hay, and J. M. Hay.

Leeds Lumber & Power, Limited, Brockville, Ont., incorporated, capital \$40,000, to carry on lumbering operations. Directors, J. G. Gardner, F. B. Cossitt, C. T. Wilkinson, of Brockville, and others.

Canadian Straw Fuel Machine Company, Limited, Toronto, Ont., incorporated, capital \$250,000, to manufacture straw fuel machines. Directors, J. H. Macabe, agent, W. D. Earney, barrister, and James A. Morden, broker, all of Toronto.

The Portland Cement Company, Limited of Manitoba, Springfield and Winnipeg, incorporated, capital \$1,000,000, to manufacture and deal in cements, brick and general building supplies. Incorporators, D. A. Keizer, civil engineer, T. C. Dougherty, financial agent, R. R. Sutherland, barrister, of Winnipeg, and others.

Stewart Straw Cutter Manufacturing Company, Limited, Toronto, Ont., incorporated, capital \$50,000, to manufacturereshing separators and straw cutters. Directors, D. A. Stewart, of Molesworth; David Lamonte and T. W. Murray, of Toronto, and others.

Algoma Power Company, Limited, Berlin, Ont., incorporated, capital \$100,000, to construct and operate works for the production and distribution of electricity. Directors, D. B. Detweiler and C. K. Hagedorn, of Waterloo, and others.

Peterboro Shovel and Tool Company, Peterboro, Ont., incorporated, capital \$50,000, to manufacture shovels, tools, etc. Directors, Thomas Fortye, Alexander Elliott, Henry LeBrun, Wm. H. Hill, and F. J. Jameson, of Peterboro.

IMPROVEMENTS IN WIRE GLASS MANUFACTURE.

New machinery for the manufacture of wire glass has made it possible now to make large sheets, whereas in the past it has been impracticable to manufacture this glass only in small size to have it absolutely satisfactory. The largest size

manufactured under the improved method is 60x140 inches, which is a big pane of glass.

The wire used is the common mesh wire, the meshes being about an inch in diameter. This wire is laid on one of the large tables upon which the molten fluid is poured over it. A heavy roller is rolled over the table, and the glass is worked into the proper thickness. At the same operation the wire is worked into the glass, and when the process is completed, the wire has become evenly imbedded in the glass. When this glass is finished it is possible for a 200-pound man to walk on a piece three-eighths of an inch thick without breaking it, and a stone thrown from a distance of ten feet will not break it. This glass is specially adapted for skylights.

By another process it is possible to manufacture large sheets of prismatic glass, both plain and wired. The old method for the manufacture of prismatic glass was to apply the mould over the whole surface at once after the roller had been applied and the glass was the proper thickness. It

was practically impossible to cast a large pane of glass in this manner, for by the time the mould would be applied the end of the glass that was rolled first would be cooled, and the prisms would be uneven. By the new process, a machine containing several moulds has been constructed. These separate moulds are about three inches wide, and when the roll is passed over the glass, these moulds are impressed on the glass immediately after the roller has passed a point sufficient to admit lowering the section. By this means the mould is applied to the glass at once, and there is no danger of the glass cooling to such an extent as to affect the application of the die. The prisms can be set at any desired angle, to suit individual requirements, and the prismatic glass can be furnished in the same sizes as any other style that is manufactured.—Paint, Oil and Drug Review.

Speight & Van Nostrand LAND SURVEYORS, ETC. Room 405 Temple Building, TORONTO, CAN. Field Notes of the late F. F. Pasmore.

INDEX TO ADVERTISEMENTS

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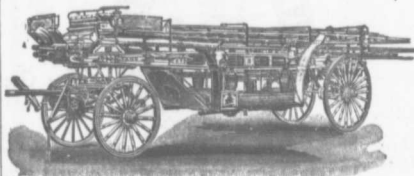
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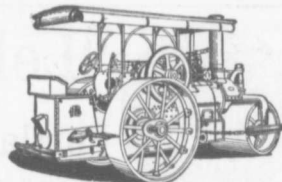


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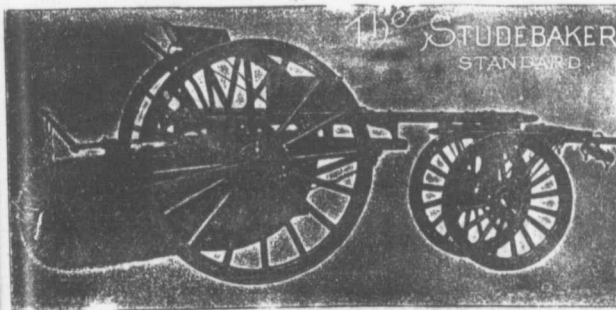
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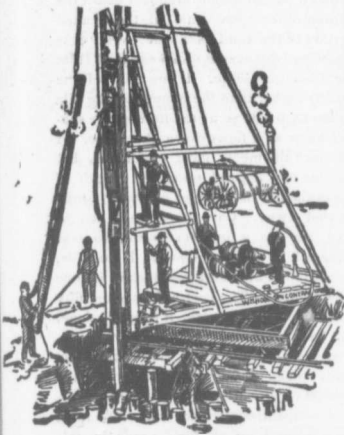
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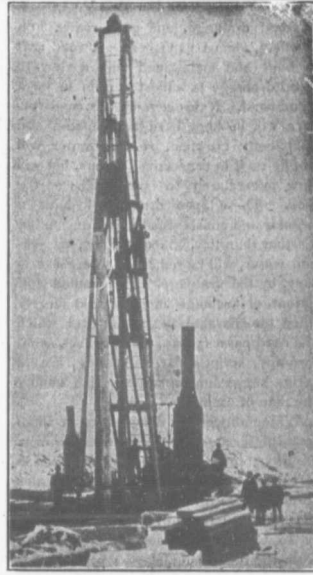
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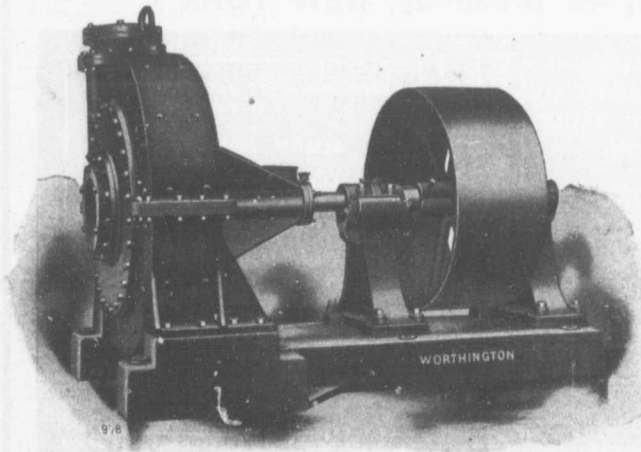
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Water should be disposed of in small quantities, along natural watercourses. If carried long distances and gathered in large bodies along the roadside, it gains force and headway, resulting in extensive wash-outs, and is in every way more costly to handle. It should be taken away from the roads as quickly as possible, for an excess of water is the great destroyer of roads.

The drainage usually found on existing roads consists of open ditches on each side of the graded portion, with a depth of about eighteen inches. They are frequently carried through rises of ground, past natural watercourses. Little atten-

* From the Annual Report of the Commissioner of Highways for Ontario.

tion is given to the regularity of the grade in the bottom, or to the amount of fall, as evidenced by the varying depths of stagnant water at wet seasons. The object of these drains was more to procure earth to raise the centre of the road above the water line than to lower the water.

A drain without an outlet is useless—or worse than useless. If there is not an outlet, the water is held in elongated ponds by the roadside, to soak into and soften the travelled roadway. This water is drawn up into the entire roadway by capillary attraction, just as a sponge will absorb water and hold it in all its pores.

The introduction of graders, wheeled scrapers and modern road machinery requires that a roadway should, in order to construct it economically without hard labor, be such as the implements will readily form. For this reason, deep, open ditches, with sharp angles and narrow bottoms, are not now suitable; but instead, a cross-section of road should show gentle curves, the rounded surface of the road not sharply defined from ditch. The latter should be about two feet wide in the bottom, where a wheeled scraper can work, and about eighteen inches in depth.

The best practice does not direct that the old open drains should be deepened for the purpose of draining the sub-soil. Deep, open drains are expensive, dangerous and unsightly, and the excavated earth generally does more harm than good to the road when used to round it up,

especially if piled on top of gravel or stone. When the combined cost of construction and maintenance is considered, a tile drain laid under the bottom of open drains is cheaper and more serviceable.

It may be accepted as a general rule that roads tiled without gravel are better than roads gravelled without tile. All roads except those on pure sand can be improved by tile draining. A single line of tile, if placed about three feet below the bottom of the open drain, if the graded portion of the road is about twenty-four feet wide, will accomplish nearly all that tile drainage will do. If one side of the road is higher than the other, lay the tile on the high side so as to intercept the sub-soil water as it flows down the slope. A four-inch tile meets most conditions, but the size will depend upon the length of the drain and the amount of water to be carried away. Care must be taken to give the tile a uniform grade, so that there will be no depressions. If possible, give a fall of at least three inches in one hundred feet. The cost will be about fifty cents a rod. The work, if properly done, will be a permanent and substantial improvement to the road, and will save many times the cost by lessening the amount of gravel needed on the road.

Municipalities need not undertake to at once underdrain all their roads in this manner, following the one rule. The preferable plan is to place these drains where

(Continued on page 12.)



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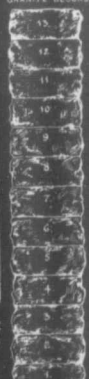
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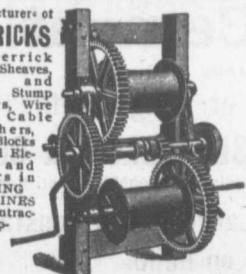
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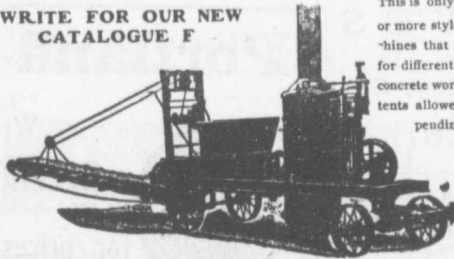
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they are evidently needed most, in low-lying sections, where water is seen to remain longest on the surface in the spring or after a heavy rain, where springs have a tendency to appear, or where the ground is found to be cold and wet during the summer.

The name "macadam" is commonly applied to any road surfaced with broken stone, and in this respect is a very unfortunate misnomer. It is the neglect to provide a dry subsoil that is the greatest cause of the unfortunate condition of roads throughout Canada to-day. Roads which are not well drained are but a repetition of the English roads as they existed before the time of Macadam—they are the roads which the system of Macadam displaced. A roadbed in which sub-drainage is not sufficiently provided is the opposite of a macadam road.

The importance of drainage cannot be too thoroughly impressed. Clay in thick beds, when dry, will support from four to six tons per square foot of surface, according to the quality of the clay. If but moderately dry it will support from two to four tons only per square foot of surface. If the clay is wet and soft it will yield to almost any load. Gravel, if well compacted, forms a much stronger roadbed, is less yielding to the action of moisture, and for this reason, even for a thin surface coating, strengthens the road somewhat. But the real strength of the road must lie in the subsoil. Vegetable mould and alluvial soils are weak, having a sustaining power of only one-half to one ton per square foot, and for this reason

it is well to remove such soils, securing, if possible, a gravel, clay or sand foundation.

A dry subsoil becomes of greater necessity in a cold and humid climate, such as prevails throughout Ontario for a considerable portion of the year. The injury done to roads by frost is caused entirely by the presence of water. Water expands on freezing, and the more there is under a road and above the frost line, the greater is the injury. In freezing, the particles of soil in immediate contact with the water are first compacted. When room for expansion ceases within the body of the soil itself, owing to its saturated condition, the surface is upheaved. When thawing takes place the subsoil will be found honey-combed, ready to settle and sink beneath traffic. It is, therefore, of the utmost importance that the soil should be relieved of all water of saturation as quickly as possible by under-drainage. The impassable condition of the roads during spring, often axle-deep with mud, is to be attributed very largely to a wet subsoil which has been honeycombed in this manner.

The making of a strong foundation thus resolves itself largely into a question of under-drainage, and the means whereby under-drainage is obtained must be adapted to the manner in which water finds its way under the road, and the nature of the soil. A soil retains in its texture, by capillary attraction, a certain amount of water. In the case of a plastic clay soil, which will absorb nearly one-half its weight and bulk of water, the water retained in this way may be the cause of injury. In the case of gravelly, sandy or other porous soil, it is necessary to remove only the water held by hydrostatic pressure in the foundation of the road. The effect of this is, that with a clay subsoil, under-drains are nearly always beneficial in securing a strong foundation, and are necessary for traffic of even moderate degree. With porous soils, on the other hand, the necessity and means of drain-

age will depend upon the height to which the water rises in the foundation, and the direction from which it comes. When a strong foundation is needed these under-drains should be three or four feet below the surface of the sub-soil.

Their location with respect to the road should be varied with circumstances. The most effective type of drainage employed is a system in which there is a tile drain on each side of the roadway underneath the open gutters, with V-shaped drains at intervals from the centre of the roadbed to the side drains. From this the scale descends to drains at the side of the roads only; then a drain at one side only, or in the centre of the road; then only an occasional drain at springy or damp points.

It is of advantage to understand the manner in which underdrains act in different cases. With porous soils, in which the water rises under hydrostatic pressure, the water enters the tile from below. Just as water rising in a vessel finds an outlet in the sides or flows over the top, so the underdrains supply the necessary outlet for this excess moisture at a proper depth from the surface; it "lowers the water line."

With clay the process is different. Absorbing and holding as it does, like a sponge, a large quantity of water, drains are less effective, but none the less necessary. The cracks and fissures which appear throughout the surface of a baked soil during the summer drought, afford a clue to the action of underdrains upon the soil. As the clay yields up its moisture, it shrinks, is torn apart. These fissures, commencing at the drain, spread in different directions, and each fissure thus becomes a new drain leading to the tile. This process goes on, the fissures become filled with sand, vegetable and other porous matter, so that they assume a degree of permanency, and in clay soils, under-drainage is more effective after several years than at first.

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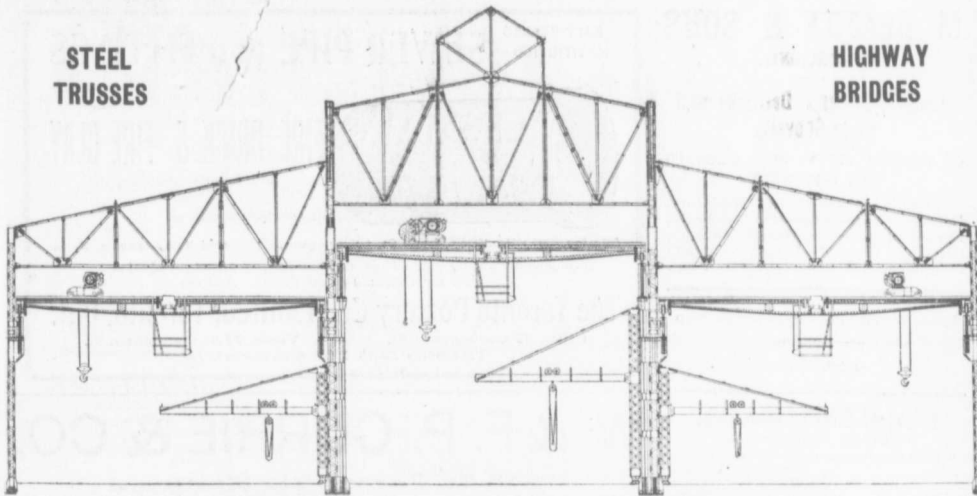
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