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CANADIAN CONTRACT RECORD

A WEEKLY JOURNAL

PUBLIC WORKS • TENDERS •
ADVANCE INFORMATION •
AND MUNICIPAL PROGRESS

EVERY THURSDAY

This paper reaches every week the Town and City Clerks, Town and City Engineers, County Clerks and County Engineers, Purchasers of Municipal Debentures and leading Contractors in all lines throughout Canada.

VOL. 8.

MARCH 4, 1897

No. 5.

THE CANADIAN CONTRACT RECORD,

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

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TENDERS

Tenders will be received by the undersigned at his office, in the Village of Dunnville, up to and inclusive of MARCH 17TH, 1897, for the Lighting of the Streets of the Village of Dunnville by Electric Arc Lights of 2,000 (nominal) candle power. Specifications may be seen at the Clerk's office.

The lowest or any tender not necessarily accepted.

J. W. HOLMES,
Clerk.

CONTRACTS OPEN.

ARNPRIOR, ONT.—A. W. Reid is asking for tenders for a residence.

RIDGEVILLE, ONT.—Alonzo Kelar is preparing to erect a new residence.

CLINTON, ONT.—W. Doherty & Co. will erect an addition to their factory

GUELPH, ONT.—The County Council will replace Glenallan bridge with a new structure.

BRANDON, MAN.—A. C. Fraser & Co. propose erecting a large addition to their brick block.

FORT WILLIAM, ONT.—Toronto capitalists are talking of erecting a flour mill at this point.

NEW WESTMINSTER, B. C.—It is reported that a vegetable cannery will be erected near this city.

STANSTEAD JUNCTION, QUE.—A new Methodist church will be built in the spring at Graniteville.

RENFREW, ONT.—Mr. Potter, C.E., has made preliminary surveys for water-works and sewerage systems.

AMHERSTBURG, ONT.—The Board of Works have recommended the construction of sewers, at a cost of \$5,000.

CARP, ONT.—The directors of Huntley Township Agricultural Society have decided to build a new hall, to cost \$1,000.

TRACADIE, N. B.—A number of American capitalists were here last week looking for a site on which to build a pulp and saw mill.

RAT PORTAGE, ONT.—Superintendent Whyte, of the C. P. R., has made arrangements to construct a large passenger dock on the lake shore.

WOODSTOCK, ONT.—The Norwich Avenue Methodist church congregation have decided to erect an addition to their church, at a cost of \$2,000.

ST. JOHN, N. B.—The St. John Railway Company will issue bonds to the amount of \$700,000. Weldon & McLean are solicitors for the company.

FENELON FALLS, ONT.—Mr. A. G. Peuchan, of Toronto, proposes to lease the pulp mill here, and convert it into a manufactory for wood, charcoal, etc.

THAMESFORD, ONT.—The trustees of St. Andrews Church, Thamesford, have purchased a lot and intend building a manse, to cost from \$3,000 to \$4,000.

MIDLAND, ONT.—Thos. J. Trueman, Town Clerk, will receive tenders until the 15th inst. for supplying the town with from 200 to 300 printed copies of the town.

BAYFIELD, ONT.—Clinton capitalists propose establishing a large summer hotel here, for which a site has been purchased and the necessary plans prepared.

CHICOUTIMI, QUE.—The Town Council has voted a bonus of \$10,000 to a proposed pulp factory.—The erection of a

market hall is under consideration by the council.

MONCTON, N. B.—The electors have voted down the proposal to issue bonds for \$40,000 to build a new brick school building, postponing consideration for one year.

RICHMOND HILL, ONT. The Board of Education have decided to rebuild the new high school building on the old site Mr. John Harris, of this town, will prepare the plans.

CHAMBLY, QUE.—The Royal Electric Company are said to be considering the question of building another dam further up the river, and surveys have been made for that purpose.

FORT ERIE, ONT.—R. A. Waitte, architect, of Buffalo, is asking for tenders for the erection of a grand stand at this point, including steel construction, carpentering and painting.

SHERBROOKE, QUE.—Mr. Burke, president of the Sherbrooke Electric Railway Company, states that the work is likely to be commenced at an early date and completed before August.

SUSSEX, N. B.—The Comer Hall Co. has been incorporated, to build a hall during the summer.—The foundation is being laid for a new warehouse in rear of G. H. White's brick block.

CHATHAM, ONT.—The City Council have decided upon the construction of a market building, and architects will be invited to submit plans therefor. The building will have a metal roof.

SACKVILLE, N. B.—Tenders are asked until the 5th inst. for the building of a three story structure, 168 x 40 feet, to be used for store, offices and warerooms for Charles Fawcett. Work to be completed in August.

VANCOUVER, B. C.—O. L. Spencer, barrister, of this city, will submit a proposition, on behalf of eastern capitalists, for the erection of a smelter, with two large blast furnaces and a daily capacity of 250 tons of ore.

REVELSTOKE, B. C.—The C. P. R. propose to erect during the coming season a freight shed, warehouse and hotel, the latter to cost in the neighborhood of \$25,000. There will also be added four or five miles of siding.

LONDON, ONT.—The congregation of St. James church, South London, require additional accommodation, and the question of erecting an addition to the present building or an entirely new structure will shortly be considered.

HALIFAX, N. S.—Henry Bush, architect, has completed plans for a two-storey building for Hamilton & Outhit, to be built of brick, with terra cotta trimmings and plate glass front—J. C. Dumaresq, architect, has submitted plans for the repairs to the Truro Methodist church and the erection of a hall in connection with the same.—A gentleman represent-

ing a syndicate is making arrangements to erect a number of dwellings. At present it is proposed to erect forty wooden buildings.

ROSSLAND, B. C.—Messrs. John R. Mitchell, of Vancouver, Lionel H. Webber, of Rossland, and Philip C. Stoess, of Spokane, are applicants for incorporation as the Okanagan Water Power Company, with power to construct and operate a system of electric power and lighting plants at Dog Falls, on the Okanagan River.

OWEN SOUND, ONT.—Work has commenced on the improvements to be undertaken by the C. P. R. The contract for timber has been awarded to Messrs. Maitland, Rixon & Co. and John Harrison.—It is stated that the Grand Trunk Railway Company have in contemplation the erection of a large grain elevator on the west side of the harbor.

PORTAGE LA PRAIRIE, MAN.—Mr. J. T. Fanning, C. E., of Minneapolis, has reported on the proposed water power scheme. He estimates the cost as follows: Flooding the slough, \$56,000; developing a water power at Pratt's Landing on the Assiniboine by a race course from Garroch's creek, at the south-east end of the slough, thirteen feet head, cost \$30,000 extra, or a total of \$89,000; turbine wheels, \$10,000, power house and solid masonry foundations, \$15,000.

WINNIPEG, MAN.—Messrs. Gordon & Ironsides contemplate the erection of a large abattoir at some point adjacent to Winnipeg. The work is likely to be commenced early in the spring.—C. Sharpe has submitted to the City Council plans of alterations proposed to be made to a block on McDermid avenue to convert the premises into an opera house.—It is probable that Mr. Rudolph Hering, C. E., of New York, will be engaged to report on the cost of a system of waterworks for the city.—Joseph Maw & Co. have purchased a lot 50 x 100 feet, corner King and William streets, and will erect a three-story block thereon.—Construction will be commenced at once on the cold storage building for the C. P. R.

VICTORIA, B. C.—The following companies are seeking incorporation: The Okanagan Water Power Company; South Kootenay Water & Power Co.; Revelstoke Water Works, Electric Light and Power Co., of Revelstoke; Fairview Power, Water & Telephone Co., and the Revelstoke, Trout Lake and Big Bend Telephone Co.—A company is seeking incorporation to construct a bridge across the Columbia River between Robson and Waneta.—The Cascade Water, Power & Light Co., composed of Thomas Joseph Jones, Duncan Edward Campbell and George Henry Haynes, all of this city, is seeking incorporation, to construct waterworks at Boundary Creek and Kettle river, in Yale district.

HAMILTON, ONT.—E. B. Wingate, C. E., of the T. H. & B. Railway, has been instructed to prepare plans for a bridge to be built over the marsh, at a cost of \$3,000.—The Lake Medad Portland Cement Company is applying for incorporation, among the promoters being Alderman Dixon, Alderman Montague and W. A. Holton. The company propose to manufacture cement, lime and builders' supplies, and will erect a factory suitable for the purpose.—The butchers at the market have requested the City Council to erect a suitable shelter, at a cost of about \$6,000.—J. F. Rastrick & Son, architects, invite offers until the 10th inst. for the construction of a brick and stone school house for the trustees of school section No. 7, Barton.

KINGSTON, ONT.—The Kingston Elevator and Transit Company has issued its prospectus. The capital is \$150,000, and its objects are to erect a 500,000 bushel elevator, and handle grain and

other products.—The Queen City Oil Co. have under consideration the erection of oil sheds here.—Two plans for protection at the G. T. R. crossing at Collin's Bay are under consideration by the Bath Road Company and the Grand Trunk Railway Company. One plan contemplates the construction of a new highway by filling in a portion of the bay, while the other plan is to construct an overhead bridge at Smith's property.—Arthur Ellis, architect, is receiving tenders for a brick residence on University ave. for J. C. Hamilton.—Nash Bros. will erect a brick dwelling at the corner of Union and Albert streets.

MONTREAL, QUE.—Mr. W. C. Macdonald has donated to McGill University the sums of \$1,185 for the purchase of certain apparatus for the engineering department, \$150,000 for the maintenance of the engineering and physics buildings, and \$475,000 for the erection of a building for chemistry and mining and metallurgy.—Mr. Laforest, superintendent of the Water Department, has recommended the expenditure of \$110,000 as follows: For a new pump at the lower level reservoir for the service of the upper level reservoir, \$50,000; permanent repairs to both reservoirs, \$50,000; new boom at the mouth of the aqueduct, \$3,900; to provide 200 additional hydrants throughout the city, \$9,000.—Mr. E. O. Champagne, boiler inspector, has condemned three of the fire engines used by the city, and as a result the Fire Committee have recommended to council the purchase of two new engines.—A deputation has been appointed by the Council of the Chambre de Commerce to urge upon the Dominion government the extension of the Intercolonial railway from Levis to Montreal.

QUEBEC, QUE.—Two stained glass windows are to be placed in the church of St. Jean Baptiste, at a cost of \$500.—Mr. Marsh has purchased property at the corner of St. Vallier and Orchard streets, which he proposes to convert into manufacturing premises.—Hon. R. R. Dobell has stated that the government has promised to grant a million dollars towards the proposed bridge across the St. Lawrence, provided a strong company is organized to push forward the undertaking.—Andrew Thomson will receive tenders until Monday, the 8th inst., for enlarging the head office of the Union Bank in this city. Plans at the office of H. Staveley, architect.—The contract for masonry and iron work of a swing bridge over River St. Charles will be let next week, tenders for which are asked by W. D. Baillaige.—D. Ouellet, architect, is preparing plans and specifications for repairs and inside decorations of the church of Cedar Hall, and for the church of Humqui. He is also preparing plans for a new church at Consapscal, and for another one at Portneuf, Saguenay.—G. E. Tinquay, architect, is preparing plans for an annex to the residence of A. J. Painchand on Grande Allee st.

OTTAWA, ONT.—A company, with \$1,000,000 capital, is applying for incorporation to build a belt line railway around this city. The company is to be known as the Hull, St. Louis Dam & Victoria Springs Railway Company.—The Sault St. Marie and Hudson Bay Railway Company will apply next session for an extension of time to complete its work.—Incorporation is sought for a company to build and operate a line of railway from the head of Lynn canal in British Columbia, to Fort Selkirk.—It is stated that the American Bank Note Company, who recently purchased property on Wellington street, will commence building operations at once.—J. H. Balderson, Secretary of the Department of Railways and Canals, invites tenders until Saturday, the 20th inst., for enlarging about one and a quarter miles of the Grenville canal, according to plans to be seen at the above department and at the

office of the superintending engineer, Montreal. Mr. Balderson also asks tenders until the 16th inst. for the works connected with the re-letting of sections Nos. 4, 5, 6, 7 and 12 of the Soulages canal.—A deputation from the County of L'Assomption waited upon the Premier last week urging the construction of a traffic bridge over both branches of the Ottawa river at Bout d'Iste. A deputation has also asked for a subsidy of \$3,200 per mile for the Chateauguy and Northern railway.—E. F. E. Roy, secretary Department of Public Works, will receive proposals until the 16th inst., for the construction of a wharf at Hantsport, N. S. Plans may be seen at the post-office, Hantsport, at the office of C. E. W. Dodwell, Halifax, and at the above department.—It is the intention of the Sun Life Assurance Co. to erect a fireproof building in this city.—A company, with a capital of \$1,000,000, is applying for incorporation, to build a belt line of railway around the city of Ottawa. T. G. Brighan makes the application for incorporation.—A scheme is on foot to dredge the Rideau river between St. Patrick street bridge and the Rideau Falls. The government will be asked to expend \$55,000 or \$60,000 on the work.—The government are said to be considering a plan for rendering the western block of the parliament buildings substantially fireproof. The proposition is made to renovate and improve the basement of the block and to remove the wooden flooring at present covering the floors of the corridors in the basement, substituting therefor cemented walks; also to remove all wooden or inflammable material in the basement that can properly be dispensed with.

TORONTO, ONT.—The petition of the Technical School Board, asking for a new school building, at a cost of \$75,000, has been received by the Mayor, and will be submitted to council at the next meeting.—Mr. Bishop, Superintendent of School Buildings, has made an approximate estimate of the cost of enlarging several school buildings, which is placed at from \$44,000 to \$55,000, making provision for twenty-one rooms.—The Park Commissioner has reported that it will cost \$6,800 to replace the stables recently burned at the exhibition grounds.—A sub-committee of the York County Council last week considered the question of building a new bridge at York Mills. It is probable that the bridge will be erected on the old site.—Chief Graham, of the Fire Department, has recommended the construction of the following water mains for fire protection: 12-inch main on King street, from Dufferin street to connect with the 8-inch main on King street west of Close avenue; 6-inch mains substituted for 4-inch mains on streets running north and south from King street; 12-inch main through the exhibition grounds from Dufferin street, on the road south of the main building; 6-inch main on Lodge avenue, where the rubber works is situated; 12-inch main on Albert and Terauley streets; 6-inch main on James street, that mains on Bay, York, Jordan and other streets be connected by four-way connections; 12-inch main on Colborne street, from Yonge street to West Market street.—Tenders are wanted until the 6th inst. for plastering, masonry, plumbing and painting of a dwelling house. Apply 70 Empress Crescent.—The building at the north-west corner of Yonge and King streets, occupied by W. & D. Dineen, is to be replaced by a new structure, work on which will commence in April. The property belongs to the Lawlor Estate, Messrs. Foy & Kelly, Church street, being their solicitors.—The City Engineer, in his fortnightly report presented to the Board of Works on Monday, reports that it will cost \$9,000 to add another span to the John street bridge, while the proposed filling can be done for \$3,000. A brick pavement is

recommended for Fenning street, cost \$2,600; a macadam roadway on Arthur street, from Bathurst street to the Crawford street bridge, cost \$13,900, and a concrete walk on the west side of Victoria street, from Richmond street south to a point 125 feet north of Adelaide street.

The Harbor Commissioners ask tenders until Saturday next, the 6th inst., for the dredging required in the harbor for the present year. Address C. W. Postlethwaite.—The City Engineer presented his estimates for 1897 to the Board of Works on Monday last. The amount asked for roadways includes the following. Macadam road repairs, \$12,000; cedar block repairs, \$15,000; general repairs, track allowance, etc, \$19,000; crossings and kerbs, \$6,000; sidewalk repairs, \$23,000; cleaning gullies, \$7,500; new eastern stables, \$6,000; bridge repairs, \$7,500; new bridge, Queen east, \$56,000; level crossings, \$2,800; street railway, extension to Cherry street bridge, \$4,000; sand pump, \$6,000; cribbing on Esplanade, foot of Lorne street, \$6,000; draining north wall, King street subway, \$2,500. For the waterworks department the following appropriations are asked. Connecting dead ends, \$3,000; laying short length of water mains to provide circulation valves for shortening districts, and extra fire hydrants, \$5,000; road through Reservoir park in valley, \$1,200; waste prevention and detection of leaks in mains and sluice pipes, \$10,000; Green's economiser, \$6,100; Jones underfeed stoker, high level station, \$2,475; converting portion of bottom of reservoir, \$10,000; new brick coal shed at south end of No. 4 boiler room, \$6,020; new weigh scale and house, \$1,200. The estimates for special works are as follows. New water mains—exhibition mains, \$6,400; Queen street subway, \$2,800; Lake street, 12-inch main westerly, \$2,500; 36-inch main to reservoir, \$135,500; 12-inch main, Avenue road, Bloor to Davenport, \$5,500; Albert street, Yonge to Terauley, 12-inch, \$1442.56; Terauley, Queen to Albert, 12-inch, \$1038.29; Bay, King to Esplanade, 12 inch, \$6,274; Yonge, King to Front, 12-inch, \$2329.12; Yonge, Front to Esplanade, 6-inch, \$420.20; Church, King to Wellington, 12-inch, \$1256.75; Melinda, Bay to Yonge, 12-inch, \$4207.61; Colborne, Yonge to Church, 12-inch, \$2084.46; Colborne, Church to West Market, 6-inch, \$572.33; West Market, Front to Colborne, 12-inch, \$556.91; Jarvis, Front to King, 12-inch \$938.81; tunnel and conduit, \$450,000.

EAST FARNHAM, QUE.—The Court of Appeals has confirmed the judgment in the case of Daigneault and the corporation of East Farnham, and dismissed the petition by which it had been sought to compel the corporation to rebuild a certain bridge over the Yamaska river, which had been carried away by flood in 1888.

FIRES.

The Teffer hotel, near Tecumseh, Ont., has been burned. Loss, \$3,000.—A disastrous fire occurred at Brantford, Ont., last week, the total loss reaching \$18,000. The damage to buildings was as follows. Burnley building, \$6,000, plant and machinery, \$1,500; Caudwell's building, \$5,000; Tisdale's building, \$2,000.—A. S. Empey's general store, Scott & Co.'s butcher shop, and A. McKenzie's store at Qu'Appelle Station, Man., were destroyed by fire recently. Loss, \$15,000; fully insured.—A building at Kingston, Ont., owned by Miss Gildersleeve, has been damaged by fire to the extent of \$2,000, covered by insurance.—The foundry of John Allgeo, at Simcoe, Ont., was burned on Tuesday last. Loss, \$5,000; no insurance. The Queen's hotel at Moosomin, N. W. T., has been destroyed by fire. The building was valued at \$9,000.—At Neepawa, Man., the St. James church,

valued at \$2,500, was destroyed recently. Insured for \$1,000. Elliott & Milligan's general store and dwelling at Tottenham, Ont., was consumed by fire on the 2nd inst.—A building at Owen Sound, Ont., owned by S. J. Parker, was partially destroyed by fire on the 26th ult. Loss covered by insurance. Cavanagh's hotel at Elkhorn, Man., has been burned, insurance \$7,000.—The carpenter shops, black smith shop and engine room in connection with the Industrial Deaf and Dumb Institution at St. Louis du Mile End, Que., was totally destroyed by fire last week. The loss on building and machinery will reach \$25,000.

CONTRACTS AWARDED.

TWEED, ONT.—The new school will be erected by R. F. Houston, and will cost \$5,000.

AYLMER, QUE.—The contract for the finishing of St. Sebastian church has been awarded to Edmond Audet.

HULL, QUE.—The School Board has awarded the contract for a new school to Jus. Bourque, at the price of \$11,275.

OTTAWA, ONT.—Mr. Crain, of this city, has secured the contract of building the new Catholic presbytery at Chelsea.

GRANBY, QUE.—The Granby Rubber Company have let the contract for the erection of a two-storey building, 36 x 84 feet, to be used as a factory for the manufacture of boxes.

MEMPHAMCOOK, N. B.—Morse & Co., of Bangor, Me., have closed a contract to furnish interior finish, flooring, etc., and hardware, for the Lefebvre Memorial Hall at St. Joseph's College.

QUEBEC, QUE.—The contractors for reparations and alterations at the Basilica are as follows: Woodwork, Ed. Paquet, \$2,903; masonry, Frs. Parent, \$1,351; roofing, Ph. Lachance, \$205.

WALKERVILLE, ONT.—The Globe

Furniture Co. has been given the contract for seating the new Methodist church in Simcoe. This company will also furnish the seats for the remodelled Baptist church in Windsor

KINGSTON, ONT.—Power & Son, architects, have awarded contracts for completing Captain John Bredens house on Stewart street, as follows: Plumbing, James Jamieson, carpenter work, John McKee, masonry, W. Langdon, painting, A. Savage.

HAMILTON, ONT.—Additions and alterations are to be made to the Y.M.C.A. building, at a cost of \$7,500. Contracts for the work have been let as follows: Brick work, George Mills, carpentry, R. & J. Poag; painting, H. McEwen, electric lighting, Lowe & Farrell.

ST. JOHN, N. B.—The sum of \$3,000 to \$4,000 will be expended on the Aberdeen Hotel, converting interior into offices, etc. Contracts awarded for same as follows: Jas Dandy, heating; Mr. Drury, carpentering; Mr. Lilly, mason work; Jas Pullen, painting.—Tenders for erection of Judge Ritchie's new dwelling have been accepted from W. L. Prinsey, and work has now commenced.

LONDON, ONT.—The contract for sections "F" and "P," of the sewerage system has been let to Messrs. Harding & Leathorne, of this city, at the price of \$13,999 and \$6,149 respectively. The other tenders were: Crawford Beckett, section P, \$6,975; W. F. Grant & Co., Toronto, F, \$15,092, P, \$7,584; Clark & Connolly, Toronto, F, \$13,441, P, \$19,917; J. S. Fallows, London, F, \$22,993; P, \$7,090; George D. Cameron & Co., London, F, \$16,975.90; P, \$8,942.38; Jesse Cook, London, P, \$8,615.52; A. J. Brown, Toronto, F, \$15,778; P, \$6,785; A. Burnett & Sons, London, F, \$15,690.

MONTREAL, QUE.—W. C. Doran, architect, has awarded contracts as follows for

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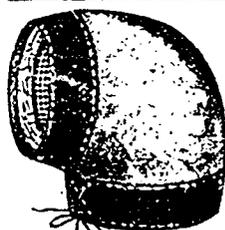
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MONTREAL WINNIPEG

two double tenement houses on Anderson street, for W. H. Cunningham. Masonry, John Quinlan; brickwork, A. Leger; carpenter and joiner's work, C. Dubrule; roofing, Montreal Roofing Co.; plumbing and gas-fitting, Carroll Bros.; plastering, D. Duplessis; painting and glazing, C. O'Brien.—Brown, MacVicar & Heriot, architects, have closed contracts as follows. The "Stanley" apartment house for Roswell Fisher—Foundations and masonry, Geo. Morrison, brickwork, Amos Cowen, carpenter work, Simpson & Peel; roofing, G. W. Reed Co.; plastering, W. J. Cook; painting, John B. Owens; plumbing and heating, John Date; steelwork, R. Donaldson & Son; tile floors and dados, Geo. R. Locker Co. Three houses for A. A. Ayer, Mountain street—Mason work, Heggie & Stewart; brickwork, W. H. Boon; carpenter work, T. Forde, painting, John Murphy; plastering, T. Brethour; plumbing and heating, John Date, tiling, mosaic floors, R. Reid; roofing, Montreal Roofing Co. Alterations to buildings on St. Helen street for Estate Kay—Carpenterwork, Geo. Roberts; plastering, Geo. Roberts, plumbing and heating, Jas. Ballantyne; elevators and enclosures, Miller Bros. & Toms.

Mr. Bell continues the Almonte business, and Mr. Wilkie has removed to Carleton Place.

J. W. Shaw, contractor, of Winnipeg, is announced to have assigned.

Alexander Jeffrey, contractor, Montreal, has assigned on demand of Geo. J. Adams. Liabilities, about \$12,000.

Mr. R. C. Laurie, C.E., of Winnipeg, will likely accept the position of engineer and inspector of public works in Battleford district, N. W. T.

The Young & Bros. Co., of Hamilton, Ont., manufacturers of plumbers' supplies, lamp goods, etc., have assigned. The assets will probably equal the liabilities.

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BIDS.

WINNIPEG, MAN.—Five tenders were received by the Council for the supply of a quarry outfit, the tenderers being the Waterous Company, Brantford; Vulcan Iron Works, Winnipeg; Canadian Rand Drill Co., Montreal; Gatz Iron Works, Chicago; American Hoist & Derrick Co., St. Paul. No award has yet been made.

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BUSINESS NOTES.

Joseph Juneau, contractor, St. Cune-gonde, Que., has assigned.

Messrs. Bell & Wilkie, civil engineers, Almonte, Ont., have dissolved partnership.

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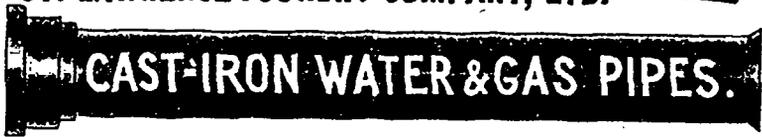
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WALTER MILLS, General Manager

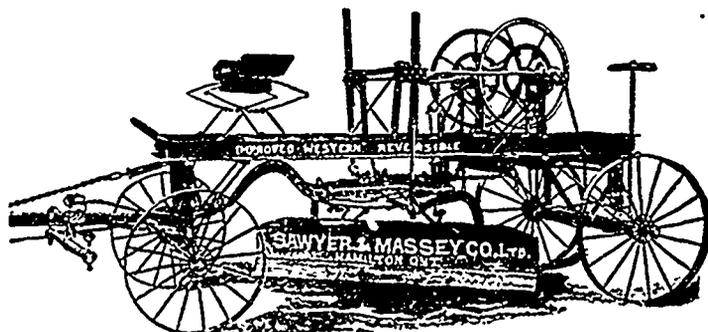
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ONTARIO LAND SURVEYORS

Fifth Annual Convention

THE fifth annual meeting of the Ontario Land Surveyors, incorporated 1892, and the 12th annual meeting of the Association of Provincial Land Surveyors, opened in the repository of the Association, Parliament Buildings, Toronto, at 2 o'clock on Tuesday, February 23rd. Mr. Willis Chipman, the president, occupied the chair, and there were present during the session the following members:

T. Harry Jones, Brantford, vice-president; A. J. Van Nostrand, Toronto, secretary-treasurer; Villiers Sankey, Toronto, Chairman of Council; K. Gamble, H. L. Esten, W. A. Browne, A. W. Campbell, L. B. Stewart, C. Unwin, J. F. Whitson, R. P. Fairbairn, H. G. Browne, G. B. Kirkpatrick, C. J. Murphy and A. P. Walker, of Toronto; H. DeQ. Sewell, Port Arthur; Capt. W. F. Van Buskirk, Stratford; T. H. Wiggins, Cornwall; Peter S. Gibson, Willowdale; E. Stewart, Collingwood; R. H. Squire, Brantford; W. Beatty, Delta; A. Niven, Haliburton; G. C. Charlesworth, Collingwood, A. R. Davis, Napanee; John Davis, Alton; J. W. Tyrrell, Hamilton; O. J. Klotz, Ottawa.

The president, Mr. Chipman, delivered a brief address as follows:

PRESIDENT'S ADDRESS.

GENTLEMEN,—From 1886 to 1894 it was the privilege of the President to deliver two annual addresses, but this is the first time that the duty has devolved on the President of delivering two addresses within two months.

Since our last annual meeting death has removed Messrs. Wm. Haskins, of Hamilton, Alfred Howitt, of Gourock, and James Robert Pedder, of Doon, Augustus Clifford Thomson, of Chicago. Obituaries of Mr. Haskins and Mr. Howitt will be found on page 182 of the Proceedings.

Owing to the enforced absence of many of our members in north-western Ontario, who are doing their part in developing the natural resources of the country, the attendance at this, our twelfth annual meeting, may not equal that of former years, and some of the standing committees may not be able to present reports. Those present should, therefore, make additional exertions to make this meeting equal in interest to that of any preceding meeting.

The work of the Committee on Legislation has been the most important of the year. Your further attention will be called to this matter. Prompt, energetic action is necessary at the present juncture.

The reports of the special committees will be found of more than ordinary interest. The problems being grappled with by the Committee on Polar Research and Exploration in Ontario are gigantic, and too much should not be expected in immediate results.

I will conclude by welcoming you to this the twelfth annual meeting.

The minutes of the previous meeting were then read and adopted.

Captain Killaly Gamble moved that the report of the Committee on Publication be received and adopted, which was seconded by Mr. Foster, and carried.

Mr. Esten then read the report of the Committee on Repository and Biography.

On motion of Mr. Esten, seconded

by Mr. Brown, the report was adopted.

A paper on the "Reminiscences of an Old Surveyor," by Mr. Charles Unwin, was read by Mr. Ager. This was a graphic account of the many rough experiences that befell the surveyor of half a century ago, as well as a number of entertaining incidents in which the writer figured. Mr. Unwin began to learn the profession in 1847 with Mr. Dennis, of Weston. This gentleman was the founder of an association which formed the nucleus of the present Canadian Institute. It is interesting to note also that in 1880, when Mr. Unwin first visited the site of Brandon, there was not a house there. The paper closed with a patriotic and eloquent peroration of much fervor setting forth the glory of the Queen and Empire.

REPORT OF COMMITTEE ON STANDARD MEASURES OF LENGTH.

Mr. M. J. Butler, chairman of the Committee on Standard Measures of Length, reported that the Commissioner of Inland Revenue had the subject under consideration, and had promised to have the necessary change made in the law to bring it in harmony with the wishes and requirements of the surveyors and civil engineers. He thought the standard at the Toronto School of Science would be made an official one, and also the comparator at McGill University, Montreal. Surveyors would be required to provide standard tapes and use them for purposes of comparison with the working measure, but would not be required to work with the stamped measure. He thought the law would be changed to the extent required to give effect to the above, cancelling all fines and declaring measurements to be made in accordance with the law.

On motion of the secretary, seconded by Mr. Foster, the report was adopted.

The president then read the following report of the Committee on Legislation.

REPORT OF COMMITTEE ON LEGISLATION.

GENTLEMEN,—On June 15th, 1896, a circular letter was sent to each member of this important committee by the chairman, requesting each to take up a particular part of the work in revising the several statutes affecting surveyors and the survey of lands.

It was found impossible to call a meeting of the committee until Dec. 30th, when the matter of revision was taken up in earnest.

On Dec. 31st the Draft Bill was presented to the association at the special meeting, and discussed clause by clause. The sections of the act respecting registered and compiled plans were referred to a special committee, with instructions to recast the same and report again to the Committee on Legislation. After receiving the replies from the sub-committee, the Draft Bill was submitted to the solicitors having in hand the revision of the Provincial Statutes. We were then informed that the two acts, Cap. 152, R.S.O., and Cap. 34, 1892, had been recast into two acts, one respecting land surveyors, and the other respecting the surveys of lands.

These two new draft acts do not, however, contain any of the changes desired by the committee, the chief of which are the following:—

A—Act Respecting Surveyors.

1. Term of office of members of Board of Examiners changed from three years to two years.
2. Examinations to be held once per year only—February recommended.
3. Preliminary examination to include grammar, history, geography and linear drawing.
4. Final examination to include botany and forestry.
5. Candidates for final examination to present reports on surveys made during apprenticeship.

6. Shortening term clauses to be recast.
7. Additional schedules.

B—Act Respecting the Survey of Lands.

1. Standard measure to be a steel band 60 feet long, duly tested and stamped.
2. Municipal surveys, when confirmed by the Department of Crown Lands, to be considered final after due notice to all parties interested.
3. Re-survey of city, town and village lots to conform more closely with original survey.
4. Plans for registration to be prepared as now prescribed in the Land Titles Act.
5. Completed plans to be two classes. (a) Plans based on actual surveys and measurements. (b) Plans based on paper titles only.
6. Rearrangement of sections prescribing methods of survey.

The amendments as recommended by the committee are herewith presented for your consideration.

WILLIS CHIPMAN, Chairman.

On motion of the secretary, seconded by Mr. Niven, the report was held over for further consideration.

"Irrigation in the Canadian North-West Territories" was the title of a paper by Mr. Wm. Pearce, of Calgary, Alta., read in his absence by Mr. Foster. In this paper it was stated, on the authority of writers of good repute, what is startling news to the uninitiated, that the Garden of Eden was irrigated. Much valuable information concerning irrigation in the North-West Territories was given. At present there are 157 irrigation canals and ditches in the territories, supplying water to an area of 10,000 acres, and capable of irrigating fifteen times that territory. The cost of irrigation in the United States was stated to be \$8.15 per acre, plus \$12.12 additional, an amount considerably in excess of the cost in the Canadian North-West. The total extent requiring irrigation in the territories was stated to be 80,000 square miles, or 50,000,000 acres.

At 5 p.m. the meeting adjourned.

EVENING SESSION.

At 8.30 p.m. the meeting resumed, the president, Mr. Chipman, in the chair.

A paper entitled "Electric Street Railways," by Mr. T. O. Bolger, City Engineer, Kingston, was read, which was thoroughly discussed by the members.

"The Mines of Ontario" was the title of the paper presented by J. F. Whitson, O.L.S., of Toronto. The writer dealt principally with the gold mines of the Rainy River district. Prefacing his remarks by the statement that his observations and estimates were conservative rather than glowing, he predicted that the Rainy River district would be one of the richest gold fields on the continent within ten years. Within six months he said there would probably be erected twelve stamp mills, two diamond drills, and one reduction works. The great drawback to progressive development was the presence in the field of so many land speculators.

"Hints to Prospectors," by H. DeQ. Sewell, O.L.S., of Port Arthur, was another interesting

paper, which was illustrated by a prospector's outfit, and some very valuable information was given.

The report of the Committee on Exploration in Ontario was presented by Mr. E. Stewart, of Collingwood, who moved its adoption, which, seconded by Mr. Kirkpatrick, was carried.

Mr. J. W. Tyrrell, of Hamilton, then read the report of the Committee on Polar Research. Among other matters of interest Mr. Tyrrell stated that, taking advantage of the fact that an expedition is to be sent to Hudson Straits and vicinity by the Dominion government during the approaching spring, the committee had written the Minister of the Interior with the object of having a small exploring party accompany the expedition to a point on the north shore of the Hudson Straits near the west end, and thence work northerly during the summer and return with the ship in the autumn. In reply the Minister stated that he was afraid the demands upon his department would not permit of any expenditure during the coming year, but that he was pleased to be apprised of their views, and might be able to do something in that direction in the future.

In addition to sentimental reasons, said Mr. Tyrrell, there were many substantial objects to be gained through judicious Arctic exploration. There was much to be looked for in the development of fisheries, the fur trade and the discovery of minerals. It was well known that for many years the northern portions of Hudson Bay had been the favorite districts of American and Dundee whaling ships, and in this connection he said that a single "right whale" in oil and bone is valued at from \$10,000 to \$20,000. But exclusive of these more or less scanty prizes the Hudson Bay and the adjacent waters abound in other commercially valuable forms of life. He had observed the surface of the water as far as his eye could reach from the deck of a vessel appear an undulating sheet of white, caused by great schools of white whales. Walrus are also found in great numbers, the value of each animal being from \$30 to \$40. In addition there are narwhales, porpoises, several varieties of seals and many species of magnificent fish. Then, as regards furs and the products of the land, he had seen the richest furs stacked by the Eskimos like haycocks upon the shore to await an opportunity for transportation to the nearest Hudson Bay Co.'s trading post. At one locality, which he had occasion to visit, the Eskimos during the preceding winter had trapped over 1,000 white foxes, besides many wolves, wolverines and colored foxes. As to minerals, he said, there was no reason why the limitless rocky plains of the north should not be found to contain as many

and as rich mineral tracts as have been discovered in the temperate or torrid zones. In conclusion Mr. Tyrrell urged that an active interest be taken in Arctic exploration by all the members.

The report was adopted.

Mr. Chipman, as chairman of the committee on Civil Engineers' Bill, reported that the Canadian Society of Civil Engineers had not as yet applied to the Provincial Parliament for an act of incorporation. The bill introduced in the Quebec legislature to incorporate the Civil Engineers' Society was withdrawn at the second reading.

At 11 p.m. the meeting adjourned.

SECOND DAY.

The meeting resumed at 10 a.m. on the following day.

The president read the report presented by the committee on drainage, dated November, 1896.

On motion of Mr. T. H. Jones, seconded by Mr. A. Niven, it was resolved that the report of the Drainage Committee as read be received and adopted.

A volunteer paper on "Ditches and Water Courses Act as Applied," by G. Smith, O.L.S., of Woodville, was read by Mr. Jones.

The president then presented to the meeting Mr. Kivas Tully, who donated to the Association plans of a proposed tunnel under the western channel at Queen's wharf. The meeting acknowledged the reception of the plans in suitable terms.

The report of the committee on topographical surveying, Otto J. Klotz, of Ottawa, chairman, was read by Mr. H. H. Gibson. After some discussion on it Mr. Niven moved that the report be received and adopted, seconded by Mr. Gibson, and carried.

Mr. T. H. Vaggins, of Cornwall, presented his paper on "Water Works," which was very thoroughly discussed by the members present.

A paper entitled "Proposed Sault Ste. Marie and Hudson's Bay Railway," by Mr. Joseph Cozens, O.L.S., of Sault Ste. Marie, was read by Mr. Davis. The author pointed out what he considered would be the great advantages to Ontario by the construction of the Sault Ste. Marie & Hudson Bay Railway. He claims that as Sault Ste. Marie is the key to Lake Superior, so is it also the key to Hudson Bay. A few miles north of the town and of the C.P.R., he said, is an unbroken wilderness—not in the sense of a broken waste, as all the elements of successful settlement are there—but there are no roads and hence no settlers. For the past twenty years Ontario has been depopulated for the benefit of Manitoba and the North-west, leaving her magnificent northern territory, which, according to Dr. Bell, of the Geological Survey, contains in the valley of the Moose river alone, more good land than the

whole of the greatest civilized portion of Ontario, to lie fallow and uninhabited, save by a few miserable Indians. The railway, he said, would open up a grand farming country, easily accessible, close to good markets and close to lake navigation. It would develop the mineral country lying to the north of the Soo, as the C.P.R. has developed the Sudbury district, and more than all, would bring the Hudson Bay close to our doors and enable us to utilize the enormous fishing resources of that great inland sea. "How few," Mr. Cozens said, "realize that the Soo is only 400 miles distant from the coast of the second largest inland sea in the world, a sea which is practically land-locked and entirely within the Dominion of Canada. This sea is closed from the ocean for about nine months in the year, while the season of navigation upon it is longer than on Lake Superior, hence the necessity for a portage to the south by which its enormous resources can be developed and its products marketed." Concerning the railway itself Mr. Cozens said that he hoped it would be the first electric through line in Canada, as there were sufficient water powers on the route to furnish more than sufficient energy. Mr. Cozens further claimed that if, after the line is built, a line of steamships were put on the bay to connect with a short portage railway from Chesterfield Inlet to the connecting waters of the Mackenzie river, it would bring the northern gold fields of the Rocky Mountain chain in closer connection with Ontario than even with British Columbia, and that the enormous oil fields of the section lying between the Mackenzie river and Hudson Bay would also be tributary to the route.

In conclusion Mr. Cozens said that he had spent some of the best years of his life in obtaining a knowledge of the country to be traversed, and he was now convinced that the route proposed was the one most eminently suited by nature for the opening up by Ontario of its northern seaboard.

At 12.50 p.m. the meeting adjourned, and resumed at 2 o'clock.

The proposed amendments in the Survey Act and the Act respecting Land Surveyors was very exhaustively discussed by the members. It was thought that a bill containing certain desired amendments might be introduced during the present session of the Legislature. One of the changes which has been incorporated into the Act is a clause requiring surveyors from elsewhere in Canada than Ontario or from other parts of the British Empire to spend at least twelve months in their profession in this province before taking the qualifying examination. Heretofore surveyors from Quebec were let off with six months, notwithstanding that that province did

not reciprocate to O.L.S. Mr. A. Niven voiced the opinion of many of those present that under the law as it stands many farmers in the newer townships of the province were unable to afford the expensive method that now obtains of having their lines located. Several changes were made to the amendments as amended.

It was moved by Mr. P. S. Gibson, seconded by Mr. John Davis, and resolved that the draft bill respecting land surveyors and the survey of lands as presented by the committee on Legislation and amended by resolutions passed by the Association, be and is hereby approved and adopted, and that the committee on Legislation be instructed to present the draft bill to the Commissioner of Crown Lands, and that they request that the proposed amendments be brought before the House at its present session.

A valuable paper on "Evidence" by Mr. J. L. Morris, Pembroke, was presented.

The report of the committee on Land Surveying with question drawn, by Mr. J. L. Morris, chairman, Pembroke, was read by Mr. A. Niven, who moved its adoption, seconded by Mr. Gibson, and carried. One object sought, that of having a fixed fee for making use of plans in registry offices, has been provided for in the Consolidated Act. Some discussion arose over a clause suggesting that the expense of locating side lines be distributed over those interested, in proportion to acreage, and in the event of any not paying the charges, to levy the same on the municipality, as is done under the Ditches and Water-courses Act. This, it was pointed out, could not be done, as the locating of the line was in no way a public work. It was generally agreed, however, that some method ought to be put in practice to compel each person benefitted to pay their fair share.

A paper entitled "Disputed Posts, Limits or Monuments" by Mr. Henry Carre, C. E., Belleville, was read by the secretary.

A paper on "Hints on Surveying and Instruments," by Mr. Sherman Malcolm, of Blenheim was read.

It was moved by Mr. H. DeQ. Sewell, seconded by Mr. Johnston, and resolved, that the section of the act prescribing the method of subdividing sections of townships surveyed on the Manitoba system be referred to Mr. P. S. Gibson to report to the secretary at his earliest convenience.

At 5.45 p.m. the meeting adjourned.

THIRD DAY.

On Thursday, at 10 a.m., the meeting resumed. Vice-President T. H. Jones in the chair.

The following report of the Committee on Engineering, Mr. Joseph De Gurse, chairman, was read by Mr. Campbell:

REPORT OF THE ENGINEERING COMMITTEE.

MR. PRESIDENT,—Engineering work has for several years been quite inactive, and while your committee cannot find that the prospects indicate any revolutionary change, the outlook promises a healthy development in lines which will require the services of the engineering profession. This is especially the case in municipal branches. The present tendency is for the towns and cities to increase in population more rapidly than the country districts. This, together with an awakening knowledge on the part of the public of the value of waterworks and sewers, is gradually producing a condition in which all towns of any pretensions will demand these public works. The installation of municipal electric systems is a feature which promises to develop. A better class of pavements and improved streets is a branch which will add to the opportunity of the municipal engineer. While the tendency in the past has been to employ the services of the engineer for the first construction of these works, it is further beginning to be felt that a salaried and permanent town official is necessary to look after their proper maintenance.

Mining engineering, in view of the gold discoveries in Rossland, B. C., and in the Rainy River District of Ontario, will create a demand for expert services; while if mining operations become profitable, of which there is every probability, it is likely that a number of railway extensions and spurs will be required.

Various electric railways have been completed during the past year, while others are projected. The Hamilton and Dundas Street Railway will soon be operated by electricity. The track is now laid with 65-lb. steel rails, and will be trollyed early in the spring. From Hamilton to Dundas is the first stage of a line which, in the near future, is to be pushed out to Galt—only fourteen miles, and here the existing Galt, Preston and Hespeler road will be utilized to make the missing link to Berlin from Preston, a distance of 8 miles, so that 22 miles of electric road will complete this chain, uniting Hamilton with a large number of villages. It is quite possible that this will be accomplished, and, perhaps, even Guelph be reached before the end of 1897.

What is believed to be the largest ditch in America has recently been completed. This drain serves the townships of Raleigh, Harwich and Tilbury, and was constructed at a cost of \$40,000, the work occupying two years. It is over ten miles in length, is 90 feet wide at the outlet, and tapers to 45 feet and 9 feet deep. This class of work, which was commenced under the Drainage Act in 1893, is a field which will afford constant and increasing employment.

During the past year an exceedingly important link in the trans-continental system was completed—the Ottawa, Arnprior and Parry Sound Railway. This connects at Parry Sound with the lake grain route from the west. The road is practically an extension of the Canada Atlantic Railway. At present freight is carried through to Boston, but by the building of 90 miles additional, chiefly in the province of Quebec, Quebec city will be made the port of shipment. When completed, the route from Duluth to Liverpool will be 800 miles shorter than by the lakes, Buffalo and New York.

A road is projected from Irontale Junction to Brockville, known as the Irontale, Bancroft and Ottawa Railway. This, by an international bridge across the St. Lawrence, will connect with the New York Central Railway. When completed it will open up an important mineral and timber district in the northern portion of Hastings and Addington. Thirty-five miles of this road easterly from Irontale Junction have been completed, and about \$20,000 has been spent on pier work at Brockville.

Two important roads are advocated, known as the Nipissing & James Bay and the Toronto & James Bay railroads, each with a view to opening up mining and timber districts in the northern part of the province, and creating a port on Hudson Bay for grain transportation.

A feature of the past year was the successful issue of the effort to harness the power of the Niagara river, whereby power is now furnished the city of Buffalo from that source. The question of long distance transmission of electric power in an economical manner remains still to be solved, but should this be accomplished, the possibility of utilizing the water power at the Niagara has been demonstrated.

Your committee of 1896 recommended the consideration of enlarging the scope of the As-

sociation. A special committee on legislation was appointed to deal with this matter, thereby relieving your committee of such work. Your present committee desire, however, to place themselves on record as in favor of extending the scope of the Association on lines laid down by your committee of 1896.

A. W. CAMPBELL, Chairman pro tem.

On motion of Mr. Campbell, seconded by Capt. Van Buskirk, the report was adopted.

A paper on "Sewage Disposal" was presented by Capt. W. F. Van-Buskirk, of Stratford. A lengthened discussion on this paper took place.

It was moved by Mr. Campbell, seconded by Mr. Wiggins, and resolved, that the Association of Ontario Land Surveyors heartily endorse the action of the Committee on Polar Research in its endeavor to promote the exploration of our "Northern Heritage," and that a copy of this resolution, together with a copy of the report of the committee, be sent to Ottawa in the hands of a deputation from this Association, who shall present the matter as forcibly as possible to the Minister of the Interior.

A highly interesting paper on "Macadam Streets in Towns," was presented by Mr. A. W. Campbell, of Toronto, which appears in verbatim on another page. This paper evoked much discussion, and the writer was tendered a vote of thanks for the valuable information it contained.

It was moved by Mr. A. Niven, seconded by Mr. R. Davis, and resolved, that the following clause be added as a sub-section to section 52 of the Survey Act:

"Provided that in the following townships, viz: All townships in Muskoka and Parry Sound districts, and in the district of Nipissing south of the Mattawa River and Trout Lake, all townships of the provisional county of Haliburton, the townships of Dalton, Digby and Lutterworth, in the county of Victoria, together with townships in the unsettled portions of the counties of Renfrew, Frontenac, &c., the lines between all lots shall be run on the astronomic course given on the original plans and field notes of the said townships on record in the Department of Crown Lands."

At 12.50 p.m. the meeting adjourned for lunch.

Reassembling at 2 p.m., President Willis Chipman occupied the chair.

REPORT OF SECRETARY-TREASURER.

The annual statement of the secretary-treasurer, Mr. Van Nostrand, made reference to the literature published during the year, and stated that the exchange of reports for members was continued with the engineering society of the School of Practical Science and the Michigan, Illinois, Iowa and Ohio societies, reports from all these societies having been sent to all the members not in arrears of dues. Some valuable additions to the library had been received, and members of the Association had contributed maps, charts, books, etc. The cash in the savings account was given as \$779.04, and that in current account \$543.05.

The report of the Auditors was presented by A. P. Walker.

The report of the Council of

Management, with report of the Board of Examiners, was presented by Mr. V. Sankey. It was stated that there had been some cases of irregular practice during the year, but that the parties had been written to, with the result that they had ceased operations. Mr. Sankey also reported that in one or two cases the members had neglected to pay their fees, and that in another the member had emphatically refused to pay at all. In this case he said an action at law would be taken at an early date.

The report, including also the report of the secretary-treasurer, was, on motion of Mr. Sankey, seconded by Mr. J. W. Tyrrell, adopted.

RATIFICATION OF NEW BY-LAWS.

Mr. Sankey moved, seconded by Mr. A. Niven, and resolved, that the following by-laws, No. 43 and 44 be adopted.

A resolution expressing condolence was extended to the relatives of the late members, A. Howitt, William Haskins, A. C. Thompson and J. R. Pedder, and expressing the sympathy of the association in their bereavement.

Under the head of new business, the tariff of fees was directed to be again issued to the members, with some slight alterations, on motion of E. Stewart, seconded by A. R. Davis.

It was moved by Mr. T. H. Jones, seconded by Mr. H. L. Esten, and resolved, that the secretary-treasurer be empowered to purchase a suitable photograph album for the use of the association, for the purpose of holding photographs donated to the Association, and that each member of the Association be requested to forward his photograph to the secretary-treasurer.

It was moved by Mr. A. P. Walker, seconded by Mr. Foster, that the report of the auditors be received and adopted. Carried.

ELECTION OF OFFICERS.

Mr. P. S. Gibson nominated Mr. T. H. Jones, of Brantford, as presiding officer. No other nominations being received, the president declared Mr. Jones elected president of the Association.

Mr. Sankey nominated Mr. P. S. Gibson to the office of vice-president for the ensuing year. He was also elected unanimously.

For members of the council Messrs. V. Sankey, H. J. Bowman, A. P. Walker, T. H. Wiggins, J. W. Tyrrell, A. W. Campbell, Capt. Van Buskirk and J. L. Morris were nominated.

For secretary-treasurer the present popular secretary, Mr. A. J. Van-
Nostrand, was unanimously re-elected.

Messrs. H. L. Esten and A. R. Davis were elected auditors.

The president appointed Messrs. H. J. Browne and J. F. Whitson scrutineers. As every member of

the Association is entitled to vote for the council, the mode of balloting is by mail.

Mr. Stewart then moved that the president leave the chair and that Mr. Sankey occupy the same. Mr. Stewart then expressed in very gratifying terms the manner in which the retiring president, Mr. Chipman, had occupied the office of presiding officer during the past year. Mr. Davis followed in the same terms.

Mr. Chipman expressed his heartfelt appreciation of the flattering terms in which his efforts had been spoken of, and intimated his desire to serve the Association in every way in his power.

At 5 p. m. the meeting adjourned.

THE BANQUET.

On the evening of Wednesday, the 24th inst., a banquet was held at McConkey's, at which a large number of the members of the Association were present. Among the guests were Messrs. Kivas Tully, of the Ontario Public Works Department; Aubrey White, Assistant Commissioner of Crown Lands; Prof. Galbraith, principal of the School of Practical Science; and W. King, of the engineering department of the School of Practical Science. Mr. Chipman performed the duties of chairman, and after the numerous dainty dishes provided had been disposed of, proceeded with the toast list, which was responded to as follows: "The Queen," "Canada," by Mr. E. Stewart; "Crown Lands Department," by Mr. Aubrey White; "Department of Public Works," by Messrs. Kivas Tully and R. P. Fairbairn; "Our Northern Heritage," by Messrs. J. W. Tyrrell and L. B. Stewart; "Board of Examiners," by Mr. P. S. Gibson; "Good Roads," by Mr. A. W. Campbell; "City Engineers," by Messrs. W. F. Van Buskirk and T. H. Wiggins; "Sister Societies," by Mr. W. King. Songs by Messrs. Niven and Sewell, a recitation by Mr. T. H. Jones, and selections on the phonograph added to the evenings entertainment.

THE NEW PRESIDENT.

Major T. Harry Jones, who was recently elected President of the Association, and whose portrait appears on this page, was born in Brantford in 1856, and is a son of Stephen J. Jones, judge of the County of Brant, and local judge of the High Court of Justice.

Mr. Jones graduated in civil engineering at McGill University in 1877, and the following year was admitted to practice as a provincial and Dominion land surveyor. He was employed as assistant on the Hamilton and North-Western railway, and on the location and construction of the Hamilton and Dundas railway. In 1880 he formed a partnership with F. H. Lynch-Staunton, of Hamilton, and from 1880 to 1882 was engaged in government surveys in the North-West.

In 1883 he began the practice of surveying and engineering in the city of Brantford, acting as city engineer and as engineer for several townships in the construction of important drainage works in the County of Brant. He was appointed city engineer of the city of Brantford in the year 1887, and in 1892 was elected an associate member of the Canadian Society of Civil Engineers.

As city engineer Mr. Jones had charge of the construction and extension of the Brantford waterworks and sewerage system, and designed and constructed extensive flood prevention works in the city of Brantford. He has also been engaged as engineer in important arbitrations for the corporations of Brockville, Peterboro and Guelph, and by the Ontario government as commissioner for the purpose of making a survey of Burlington Beach, and the ad-



MAJOR T. HARRY JONES,
B.A. Sc., O.L.S., D.L.S., A.M. CAN. SOC. C.E.
CITY ENGINEER, BRANTFORD.
PRESIDENT OF THE ASSOCIATION OF ONTARIO LAND SURVEYORS.

justment of the respective rights of the settlers and the city of Hamilton. He is one of the charter members of the Association of Ontario Land Surveyors, and has contributed several papers which have been published in the proceedings of the Association. Last year he was elected vice-president of the Association, and at the annual meeting in February was unanimously chosen to occupy the president's chair.

Mr. Jones has always taken a deep interest in military matters, and while attending McGill University was a member of the university company in the Prince of Wales Rifles.

In 1883 he took a three months' course in the military school at London, Ont., obtaining a first and second class certificate. He joined the Dufferin Rifles of Canada during the same year, rising to the rank of senior major in that battalion, and retiring in 1894, retaining rank.

Civil engineers and others will confer a favor upon the publisher by forwarding to the CONTRACT RECORD advance information respecting projected works of construction, such as waterworks and sewerage systems, electric light plants, etc.

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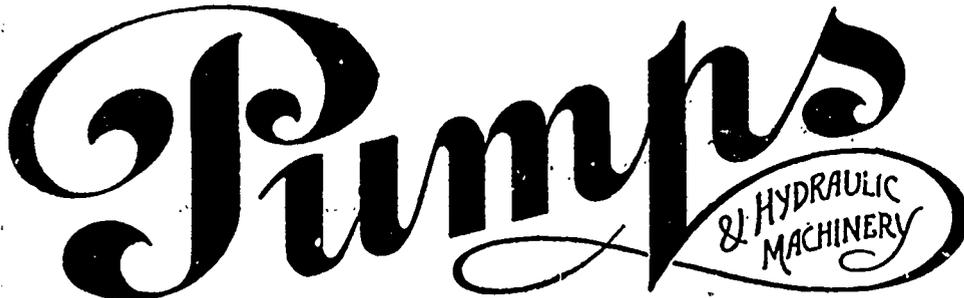
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MACADAM FOR TOWN STREETS.*

By A. W. CAMPBELL.

There is a very common impression among the general masses of the people that macadamized roadways are all very well for country highways, but that, for town streets, a higher grade of paving material—brick, wood, or asphalt—is necessary. This opinion, so adverse to macadam, has no doubt arisen from the common practice of terming as a "macadam" road, any allowance between concessions that has had an irregular layer of gravel dropped along the centre of it. This was somewhat the idea people had of roads before the time of Mac Adam, the main feature of whose road-making, however, was a firm, unyielding sub-soil, maintained in that condition by a thorough system of deep drainage, and a covering of stone, impenetrable to moisture, and so shaped as to shed water quickly to the gutters. All kinds and classes of paving have their proper place, and, in its proper place, there is none more serviceable and capable of giving greater satisfaction than macadam.

One place in which macadam can be rightly employed is in paving certain town and city streets—those of a residential character, not subjected to traffic so great as to render the maintenance of macadam excessively expensive. There are, of course, other limitations which individual cases will suggest. Business thoroughfares, or a street in its business section, requires a less absorbent material, and one which presents a smoother surface, more easily cleaned. With horses standing, moving slowly, tied and pawing, as so frequently is the case on a business street, and generally with an excess of heavy traffic, a macadam pavement retains a great amount of street filth, is difficult to maintain, and should be, if possible, replaced with vitrified brick or asphalt. A well kept macadam driveway is in keeping with well kept boulevards, lawns and shade trees, the characteristics of a residential street; it has a cool appearance, the dust can be readily kept down by sprinkling, and for light driving is the favorite among horsemen. Bicyclists, now an important section of the community, usually favor macadam in preference to the more costly classes of pavement. A comparison of macadam with asphalt or vitrified brick, in point of utility and beauty, will not result unfavorably to the former.

Preliminary to undertaking the improvement of the streets of a town, levels should be taken on all the streets to establish a system of grades which will provide a proper union of street intersections. Care should, of course, be taken to equalize cuts and fills as far as practicable, and to utilize surplus earth in filling up the boulevards or low lots adjoining the street. In this, the handling of considerable earth is often necessary to obtain the best results.

In the finished street it is ordinarily advisable to have the crown of the roadway at the same elevation as the surface of the sidewalk, and, in any case, the sidewalk should not be lower than the crown of the roadway. It will be necessary to excavate below this elevation in the centre of the allowance to provide for the reception of the road metal. The depth of this excavation must provide for the thickness of metal to be used, and for surface drainage. The present tendency is to narrow the width of the driveway. It is found that to occupy a 66 foot allowance with a four foot walk on each side, and to devote the remainder to the driveway, is a needless expense, both in cost of first construction and in maintenance. From 22 to 26 feet is, on the great majority of the residential streets of towns, ample to accommodate traffic. A broad driveway is very handsome, but so also are broad stretches of nicely sodded boulevard, ornamented with shade trees. At present, on improved streets, we ordinarily find a row of shade trees outside the walk. In commencing the

reconstruction of a street, it is generally advisable, if not necessary, to take up the sidewalk to permit a proper grading of the road allowance. When the earthwork is finished, the sidewalk may be placed immediately outside the row of trees, and the space originally occupied by it sodded; and if the fences are removed, the strip is, in appearance, added to the depth of the lawn. This arrangement will usually leave a space for a strip of sod between the sidewalk and the carriageway. If this part of the boulevard can have a width of about two feet or more, it takes away a certain dusty, business appearance which it would otherwise retain. The sidewalk should have a distinct elevation above the sod, sloping slightly towards the roadway, to provide for proper drainage. The strip of sod between the walk and the curb should have a fall toward the curb of six or more inches, and on a 24-foot roadway having a one-foot crown, at the same elevation as the walk, this will leave from 6 to 8 inches of curb exposed.

The crown referred to above, about one inch to the foot, will seem to many, perhaps, excessive. This applies to the newly-made roadway and provides for settlement. Two-thirds of an inch is the convexity ordinarily adopted on newly-constructed English and French roads; but with the material available in most localities of our province it is not sufficient. I do not regard limestone, gneiss, fieldstone and gravel obtainable, as sufficiently durable. Hollows are apt to appear, dust accumulates, and unless there is ample fall for the water, it will be found lying upon the road surface. The tendency invariably is for traffic to use the centre of the roadway, and this is always increased with the narrower driveways. But in choosing between two evils it is better practice, I find, to provide ample crown. It is better that travel should be evenly distributed than that water should lie in pools on the road.

The shape of the crown has been a subject of some discussion. A circular rise I believe to be the best principle to follow in practice. Two planes joined at the top by short curve, do not provide for settlements and wear. A flat ellipse, sometimes advocated, does not provide for settlement, and gives an unduly steep fall at the edges, increasing the wear at the side, and practically narrowing the roadway.

For curbing, flagstone, which is easily obtained in many districts, is the more handsome and more durable material. A good substitute is 3 x 10 cedar, which should be spiked to cedar posts 2½ feet long and 6 inches in diameter. By bevelling the posts, the curbing may be inclined at an angle of about 30 degrees. It presents a better appearance than when perpendicular, the tops of the posts are protected and there is less liability to decay.

In nearly every locality throughout the province, good material will be found within easy distance. Crushed stone is usually regarded as the only material for macadam roads; but Mac Adam really used and advocated any material which would provide a good wearing surface, not readily penetrated by moisture. Thus we have, in Ontario, a choice of gneisses, limestones, field boulders, pit and creek gravels: or if we wish the best material, trap rock is available. Of these materials, we have all qualities from that which is exceedingly good to that which is little better than clay. The gneisses are usually a harder and tougher rock than the limestone, but the latter offset this defect largely by their better cementing qualities. Fieldstone makes a very good metal if care is taken in its selection. Pit gravel usually needs screening and crushing to remove sand and earthy matter, and to reduce the large stones to suitable dimensions. Creek gravel is often sufficiently clean to be applied directly to the road, but some attention should be given to breaking large stones. In choosing the metal, a judicious selection must usually be made between a cheaper and poorer material in the immediate vicinity, and a more expensive but more durable metal from a distance. The selection will be based on the expenditure permissible, and the nature of the traffic which is to be accommodated. The depth of stone needed will vary with the nature and extent of traffic and the quality of stone used. Twelve inches is sufficient for the heaviest travel, and a thickness of seven inches is admissible. The crown should be heavier at the centre than at the curb. These measurements are after consolidation with a roller.

The use of binders is another question of considerable importance. The best that can be had is usually the clean chips and dust, the screenings of the metal used. The amount of vacuum in a surface covering consolidated without a binder is very considerable, but I regard the mechanical grasp which one stone takes upon another under pressure as infinitely preferable to the consolidation obtained by a mixture of sand and stone. Sand attracts and retains moisture, while a vacuum will permit the water to pass away, at the same time affording space for the expansion of the frozen water retained. The action of frost on clean metal is much less serious than upon a roadway having temporary bond of sand. Of course, rolling is an absolute necessity in obtaining a proper surface covering of crushed stone. Broken stone dropped upon a roadway permits water to pass into the sub-soil as through a sieve, and the process of consolidation not only results in a very great wear and waste of metal, but mixes it with the earth, which of itself is very injurious, and in so doing destroys the crowning, and therefore the proper surface drainage of the sub-soil. The sub-soil should be crowned, and, like the covering, thoroughly consolidated by rolling. The metal should be applied in layers three or four inches thick, each layer being thoroughly rolled before the next is applied.

The weight of the roller should be from ten to fifteen tons, the former generally producing the better results. An excessive weight tends to crush the metal, especially if of the softer local varieties, instead of working it into position. The heavy rollers produce consolidation more quickly, but the lesser weights have more permanent results. Less than ten tons is not advisable except in the instances of a horse roller, a cheaper but not very satisfactory substitute for a steam roller.

The necessity of underdrainage has been referred to. The means must usually be common field tile. The location and extent of drainage must depend on various circumstances, the nature of the soil, the opportunity for outlets, and whether or not there is a sewer beneath the roadbed. Ordinarily a three or four-inch tile placed beneath the edge of the roadway on each side, and below frost-line, is best rule to follow, but this, if the soil is loose and porous and has a natural outlet for sub-soil water, may be more than is necessary. A line of tile placed in the centre of the road allowance disturbs the earth foundation, and settlements are likely to occur, a condition which is difficult to repair and is very injurious to the stability of the road.

If gravel or broken stone is used on a business thoroughfare, the gutters should be cobbled-stoned to protect them from the stamping of horses; but on residential streets this is not necessary, the angle between the road surface and curb forming a sufficient waterway. Outlets for surface and sub-drainage must be procured as frequently as possible so as to dispose of water before it gains force and headway. If a system of sewers exists, with provision for storm water, the matter is very much simplified. When necessary through settling basins should be very carefully guarded, to prevent obstruction.

Street improvement in towns is a matter to which municipal engineers have not been called upon in the past to give very much attention, nor have the advantages of well-built and tastefully designed streets received sufficient consideration from municipal councils or the public generally. To discover the best ways and means to do away with the existing shapeless and badly constructed roads which disfigure the most of Ontario towns, and to replace them with works that will give a park-like appearance, is a problem worthy of study; and in its solution the engineering profession must take an active part. The first step is to teach citizens what good streets are: when the public and councilors know this they will know that the engineer's services and advice must be employed in their construction. When a man knows how and why a horse should be shod, he goes to a blacksmith, to the advantage of the horse, the owner and the smith. Economy, a necessary part of the subject, must be measured by the standard of services rendered, as compared with the ultimate, not the primary cost. This primary cost varies very much with different localities, and any estimate would require considerable revision for each district. An average cost of a driveway 22 feet wide may be placed at \$3,000. It is not well, however, to frighten the public with the estimate of a mile of street. Very few streets are a mile in length, and no citizen has to pay more than his own frontage. This, when extended over a term of years, is a very small annual amount, and the benefits resulting from the improvement will popularize the expenditure. A man's standing is judged to quite an extent by the clothes he wears and the house he lives in. A town is criticized from a similar standpoint, and no municipality can afford to leave its public highways in a state of neglect. The condition of the streets of the majority of towns in Ontario is neither in keeping with true economy nor with an age of civilization.

* Paper read at the Fifth Annual Meeting of the Ontario Land Surveyors, February 24th, 1897.

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CONDITION OF THE MARKET.

TORONTO: The spring trade has not yet commenced to move, and consequently there is little activity to report in builders' supplies. At country points a fair amount of building is projected, and common brick seems to be in good demand, as well as cheap lumber. In most lines, however, complaint is heard of slow business. A few light shipments of wire nails have been made, and lots of building paper are regularly called for, while a little better demand is reported for sheet steel and galvanized iron. Plumbers' supplies show no improvement.

MONTREAL: The market for builders' supplies has exhibited more life during the past couple of weeks, and the statement that several projected works of construction are about to be carried out has caused dealers to take a more favorable view of the outlook for spring trade. The sale of 300 barrels of cement is reported, and the tone of the market is steady at recent quotations. Firebricks are in limited demand, at \$17.50 to \$20 per thousand. In paints and oils the volume of business is fully up to the average for the season of the year. Hamilton pig iron sells at \$18.25, but in the heavy metal trade in general very little is doing. An increase in orders for wire nails is reported.

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Table with 4 columns: Description, Toronto Price, Montreal Price, and another Montreal Price. Includes items like 3 and 3 1/2 inch, per 100 lbs., 2 and 2 1/2, etc.

SHARP AND FLAT PRESSED NAILS.

Table with 4 columns: Description, Toronto Price, Montreal Price, and another Montreal Price. Includes items like 3 inch, per 100 lbs., 2 1/2 and 2 3/4, etc.

STEEL WIRE NAILS.

Table with 4 columns: Description, Toronto Price, Montreal Price, and another Montreal Price. Includes item: Steel Wire Nails, 20% of printed list.

Iron Pipe:

Table with 4 columns: Description, Toronto Price, Montreal Price, and another Montreal Price. Includes items like Iron pipe, 1/2 inch, per foot, etc.

Lead Pipe:

Table with 4 columns: Description, Toronto Price, Montreal Price, and another Montreal Price. Includes items like Lead pipe, per lb., Waste pipe, etc.

Galvanized Iron:

Table with 4 columns: Description, Toronto Price, Montreal Price, and another Montreal Price. Includes items like Adam's-Mar's Best and Queen's Head, etc.

Gordon Crown:

Table with 4 columns: Description, Toronto Price, Montreal Price, and another Montreal Price. Includes items like 16 to 24 gauge, per lb., etc.

Structural Iron:

Table with 4 columns: Description, Toronto Price, Montreal Price, and another Montreal Price. Includes items like Steel Beams, channels, angles, etc.

(Corrected up to March 4th)