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Vol. 3.

Toronto and Montreal, Canada, October 1, 1892.

No. 34

#### THE CANADIAN CONTRACT RECORD.

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

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64 Temple Building. -Bell Telephone 2299. Montreal.

Information solicited from any part of e Dominson regarding contracts open to 

At its Convention held in Toronto, Nov. 20 and 31, 1889, the Ontario Association of Architects signified its approval of the CANADIAN CONTRACT RECORD, and ntedged its members to use this lournal as their medium of communication with contractors with respect to advertisements for

The following resolution was unanimousty adopted at the First Annual Meeting of the Province of Quebec Association of Architects, held in Montreal, Oct. 10th and 11th, 1890 : " Moced by M. Perrault, seconded by 4. F. Dunlop, that we the Architects of the Province of Quebec now assembled in Concention being satisfied that the CANA DIAN CONTRACT RECORD affords us a direct communication with the Contractors.- Resolved, that we pledge our support to it by using its columns when calling for Ten-

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#### NOTICE TO CONTRACTORS.

Tenders will be received by registered post addressed to the City Engineer. Toronto, up to 11 oclock a m. on FRIDAY, I HE 7711 DAY OF OCTOBER, 1892, for the construction of the following works: following works

TRACK ALLOWANCE ONLY.

On Avenue road, from Bloor street to north city limit, asphalt on concrete, with granite or scoria

On Queen street, from the G. T. R. crossing to Lee avenue, cedar blocks on concrete, with gran-

On High Park avenue, from Roncesvalles ave. to High Park, coder pavement with concrete and granite toothing.

Plans can be seen and forms of tender ob-

tained at the Lity Engineer's office on and after

tained at the cuty Engineer's office on and after Tuesday, October 4th, 1892.

A deposit in the form of a marked cheque payable to the order of the City Treasurer, for the sum of 5 per cent, on the value of the work tendered for under \$1,000, and 2\frac{1}{2} per cent. for the value of the work tendered for over that amount, must accompany each and every render, otherwise it will not be entertained. All tenders must bear the bona fide signatures of the contraster and his tureries type specifications. contractor and his surcties (see specifications), or they will be ruled out as informal.

The Committee do not bind themselves to ac-

cept the lowest or any tender

Chairman Committee on Works.

Committee Room, Toronto, Sept. 27, 1892.

### TENDERS

Will be received at the office of the undersigned until 5 p.m., WEDNESDAY, OCTOBER 5711, for taking down a building at the corner of until 5 p.m., WEDNESDAY, Of for taking down a building at Adeliade and Victoria Stre-is. 1 Lowest or any tender not necessarily accepted.

STRICKLAND & SYMONS, architects.

18 Toronto Street.

#### PRESERVATION OF STONE.

Limestones are for many reasons, emi nently suitable for constructive purposes, being cheap and easily worked, but they readily absorb moisture. This, as it usually contains carbonic acid, gradually dissolves away the material of the stone, and in winter, serious injury is often caused by the freezing of this water and its consequent expansion. Several meth ods of rendering this material porous have been proposed, but not frequently has the remedy been worse than the disease. Alkaline silicates were at one time in favor for this purpose, but in its applica. tion, soluble hyeroscopic alkaline car bonates are formed, which seriously affect the utility of the process. Moreover, unless care is taken in the application of these silicates, a hard impervious varnish is given to the surface of the stone, within which the water in dissolving the silicates is imprisoned, and on the first frost serious disintegration takes place. M. M. Faure and Kessler have recently been at work on this duestion, and as a result of their experiments recommend the use of metalhe fluosilicates more especially those of alconinium, magnesium and zinc. The surfaces to be treated are brushed over with a solution of salt chosen, causing on the first application an abundant froth due to the liberation of carbonic acid gas. When dry the operation is repeated once or twice, depending on the quality of the stone, on an average for soft stones 1.7 pounds of solution to 40 Beaume are required, per cubic yard. The advantages are that the process is completed in twenty four hours, it allows the stone to be pol-ished, and by a suitable choice fluosilicate used, different colors can be communicated to it; and lastly, the process is cheap, and applicable not only to stone. but to all cements and mortars containing The theory of the process is, that a double decomposition occurs, forming in the first place, silica, calcium and aluminium flouribes, and carbonic acid gas; secondly a reaction takes place between the limestone and the aluminum flourides, producing aluminium flourides, flouride, and caralumnia. calcium bonic acid. In this manner each grain of the limestone is covered with an insoluble coat, materially increasing its resistance to atmospheric influences... Engineering.

#### CONTRACTS OPEN.

St. Johns, Que,-An improved system of drainage is badly needed.

TRURO, N. S.-Mr. John Chisholm is preparing to crect a new house on Lorne street,

LONDON, ONT. G. Craddock, architect, will receive tenders until to-day for repairs to Button's Hotel.

OTTAWA, ON t. - Mr. G. F. Stalker, architect. is preparing plans for the new Parliament build" ing in Fritish Columbia.

BROCKVILLE, ONT, John Dargavel, Clerk, will receive tenders until the 3rd inst, for building an Isolated hospital in this town

ALLISTON, ONT. - Lenders are asked until the 5th of October for the purchase of waterworks debentures to the extent of \$15,000. J. C. Hart,

MONCTON, N. B.-D. Pottinger, Chief Superintendent Intercolonial Railway, will receive tenders until the 18th of October for the construction of a steam ferry boat.

CALGARY, N. W. T. Mr. W. A. Proctor, a Cincinnatii millionaire, has purchased \$30,000 worth of real estate in this town. He will creet a stone block next spring.

AMBERST N S - The Baptists have decided to erect a new church on the site of their present building. The new building will be of brick and stone, and will cost from \$30,000 to \$40,000.

VANCOUVER, B. C .- A company to be known as the British Pacific Construction Company, with a cupital of five million dollars, is to be formed to build the Canadian Western Railway.

PORT ARTHUR, UNT. -A by-law has been read a first time in conneil to submit a by law to the ratepayers to raise the sum of \$40,000 for the extension of the street railway to West Fort William.

NANAIMO, B. C .- The plans submitted by J. J. Honeymoon, architect, of this place, have been accepted for the new fire hall. I he building is to be situated at the corner of Nicol and Victoria streets, and is to be a two story brick and stone building, constructed in the Gothic style of architecture

HALIFAX, N. S. The foundations of eight new houses on Morris street will be commenced immediately. The cost of the whole work is over \$30,000.--The Novia Scotta Power Co. announces its intention to construct an electric street railway from the deep water termunis of the Intercolonial Railway to the south end of the city, by way of Water street.

PORTLAND, MAINE. - Propositions for the construction of a line of radroad from Mechanic Falls to a connection with the Maine Central radioard at some point between Danville Innetion and Auburn will be received at the office of the company, 34 Exchange street, until Saturday, October 8th, 1892, Frederic Danforth, Chief Engineer.

TORONTO TUNCTION, ONL.-It has been decided to erect a large flour mill near the power house on the north side, with a capacity of 600 barrels daily. The building is to cost \$60,000. There will be a cooperage in connection. Citizens are agitating for a reservoir. - The sewerage Engineer has been instructed to advertise for tenders for materials for the construction of storm sewers.

WINDSOR, ONT. + William M. Boomer, proprietor of the Windsor Street Railway, is negotiating with Detroit capitalists for an extension of the line. If negotiations now pending are carried out \$50,000 of new capital will be added. the line extended on the east to the wine house above Warkerville and on the west to the Michigan't entral depot, and the road equipped with a fine electric system.

WATERDOWN, ONL- A meeting of the citizens of Waterdown and the adjoining municipalities was held this week for the purpose of discussing the advisability of aiding in the con struction of an electric railway from Hamil ton to Guelph. Those present seemed to be in favor of the scheme, and it is thought that a company will be formed at an early date to ob tain a charter and proceed with the construction of the road.

KINGSTON, ONT. Tenders will shortly be asked for the extension of the water pipe. A number of citizens are talking of organizing a joint stock company to build a cable from kingston Mills to the city to transfer power to the various manufacturing industries. -Negotiations between the Street Railway Company and the City Council in respect to the introduction of electricity have been cancelled, and the Committee on Street has been commissioned to negotiate for an electric car service on streets other than those occupied by the present company.

WOODSTOCK, ONT .- It is understood that a prominent citizen of the East End is considering the erection of a flour mill in that part of the town with a capacity of 100 fatrets daily. ratepayers will vote on a by-law on the 12th of October to provide the sum of \$12,000 for the erection of a fire hall and the equipment of a complete fire alarm system. - The Water Commissioners have decided to extend the water mains as follows on Graham street to the north side Brant street, on Mill to Russell street, on Hay to Bruce street, and on Bruce to Spencer

Winstree, Man,-the City Council has advertised its intention to construct a sewer on and ave, south from 9th st. south to 11th street south, and on 10th st. south from 2nd ave. south to Central ave, -- Tenders have been called for the constructing of pipe sewers on Main street north and Prairie street, -It is stated that Mr. James Billings, a Duluth capitalist, contemplates the efection next spring of thirty or forty dw-lling houses in this city, the cost of which will be from \$1,500 to \$2,00 each Robert Jaffray and Geo. 1. Cox, of Toronto, who are interested in Win n-peg property, contemplate erecting a hausome block here. The New York Lafe Assumince Coupany are considering the erection of a large building in this city.

HAMILTON, ONT. -R. Clohecy, architect, will receive tenders until to-day (Saturday) for the mason and carpenter work required in extensive additions and alterations to the Loretto Convent in this city. A building permit has been granted to Thomas Allen, for four two-story brick dwellings on Queen street and six on Pearl street, to cost \$10,800,-lt is proposed to utilize a large amount of electric power to operate a system of street and suburban milways and supply various small manufactories. Including the current required for lighting the cuty, it is claimed that as much as 15,000 H.P. can be profitably used. A Company is being formed by Messis. Jno. Patterson, E. B. Osler and others to develop the scheme—Tenders were asked this week for the construction of of a pipe sewer on Wilson street, between Ashley and Wentworth streets.

MONTREAL, QUE.-A number of capitalists are at present forming a company to undertake the construction of a milroad between lokette and St. Lin. The road will pass through St. Paul, St. Esprit, St. Liguori, St. Julienne, St. Alexis and St. Jacques. Letters patent of incorporation are to be applied for at the next session of the Provincial Legislature. - A meeting of the congregation of Erskine church was to have been held on Thursday evening last to select a site for the new building,-The Parks and Fernes Committee have applied to council for an appropriation of \$2,000 with which to complete the Superintendent's residence.-It is said to be the intention of the City Council to call the tenders for lighting of the streets by electricity by the 1st of November -Mr. J. F. Whitwell is surveying the une for the proposed milway between Stanbridge Station and Philipsburg. Operations will commence early in the spring.

TORONTO, ONT. At a meeting of the City Council held on Tuesday last, a by-law was introduced and passed providing for the mising of money for permanent pavements on the following streets. Dundas street, Sorauren ave, to Bloor st., cost \$12,000, King st., Sherbourne st to River st., cost \$18,100; Spadina ave., Queen st. to Bloor st., cost \$32,650, King st , Dufferin st. to Ronces calles ave. cost \$22,700. Queen st., Davies ave. to railway crossing, cost \$9,200; Howard Park ave., Dundas st. to Roncesvalles ave., cost \$3,800. High Park ave., Roncesvalles ave, to High Park, Cost \$10,100 , Avenue road, Bloor st. to North city limits, cost \$27,000; Queen st., from Railway tracks to East city lumits, cost \$55,000. - Hon. Frank Smith is the promoter of a scheme for the erection of a large hotel to be undertaken by a joint stock company. the capital of which is placed at \$1,000,000. Mr. Smith has offered to take stock to the extent of \$25.000.-A new water main is to be laid to connect with the Isolation hospital.-The City Engineer will be asked to report as to the cost of the work necessary to strengthen the Queen street bridge over the Don in order to allow of the laying of heavier rails for the trolley ears. The Engineer will also be asked to consider the proposed extension of the street railway system in Roncesvalles avenue and Glen road,-It has been decided to advertise for tenders for the erection of buildings at the new rifle range and also for The buildings required the sinking of a well include a caretaker's house, a shelter for the men and a store/house for ammuinition, the cost of which will be about \$5,000.-Building permits have been granted as follows: Geo. Gooderham. 13 story bk. stable, rear residence n. c. cor. St. George and Bloor streets, cost \$6,000; l. Wallace, 692 Euclid ave., pair & d. 2 story and attict bk. dwellings, 437 and 479 Euclid ave., cost \$5,500: Nim. Hutchison, 271 Scaton st., pair s. d. 2 story and attic bk. dwellings, 159 and 161 Sherhourne st., cost \$5.000, J. P. Clatk, pair one story bk. and stone stores, 79 and 81 Queen st. w., cost \$5,000, Doty Engine Co., one story bk. foundry, Niagara st, near Bathurst st., cost \$5,000. - Messrs. Strickland & Symons, architects, 18 Toronto st., are about to let contracts for the new Albany Club building, having a frontage of 70 feet on Victoria street, and also for a new office building on the corner of Victoria and Adelaide streets. Both these buildings are to be of pressed brick and cut stone.

#### FIRES.

The residence of Mr. Thos. Hodgins, of Lyendinage, Ont., was destroyed by fire on the 24th ult.—A disastrous fire occurred at Mile End, a suburb of Montreal, last week, destroying the residences of the following persons: Rudolphe Reinhold, Nazaire Lord, Joseph St. Jean, Ferdinand Chroux, Leandre Valhere, And. e Bernard, Hyacinthe St. Jaynes, Chas. Lebelle, Geo. Hoyne and Mr. Meyard. The total loss is estimated at

\$10,000, the dwellings being all frame. - A fire occurred at Virden, Man., on Thursday last which destroyed the Grand Central Hotel, Virden Hotel-McDougall's implement warehouse, Higginbotham's, Wilcox's and Wyatt's stores and the C. P. Railway sheds.-Mr. Thos. Ecroyd's tannery, at St. Henri, Oue., was totally destroyed by fire on the 20th ult, entailing a loss of \$50,000. The insurance was \$25,000.-Mr. H. Hempworth s woolen mill at Selkirk, Man., was destroyed by fire recently. The loss will be about \$3,000. No insurance.—The St. Croix cotton miliat Milltown, N. B., was destroyed by fire last week. Loss. from \$15.000 to \$20,000. - The Hensall House, at Hensall, Ont. owned and occupied by R. A. Mc-Intyre, was burned on Saturday last. Loss, \$5,-000; insurance \$3.,000.

#### CONTRACTS AWARDED.

SMITH'S FALLS, ONT.—M. Ryan has the contract for enlarging and improving St. John's church, in this town. The price is in the neighborhood of \$13,000.

BRANTFORD, ONT—The T., H. & B. Railway Company has let the contracts for the foundation and stonework of the new bridge to Mr. Wm Gibson, of Beamsville.

CHATHAM, ONT - Mr. John Piggott of this town, has received the contract for supplying all the materials for the seven new railway stations on the extension of the Lake Ene and Detroit Railway between Leannington and Ridgetown.

TORONTO, ONT.—Mr. A. G. McIntyre has been awarded the contract for the galvanized iron work of the new Methodist church, Walkerville, also for the slating, felt roofing and galvanized iron work of three houses on Nassau street, this city.

OWEN SOUND, ONT.—Capt. John Simposn has secured the contract for the building of a fine new steamer for the North Shore Navigation Company, the cost of which is estimated at \$90,000. The contract for the new engines has not yet been awarded.

KINGSTON, ONT,—Tenders for alterations and additions to Mr. Hendry's residence have been awarded as follows:—Masonry, W. McCartney, carpentry, Messrs. McFarlane and Ackroyd; painting, Savage Bros., plumbing and insmithing, McKelvey & Birch.

PRESCOTT, ONT.—Messrs. Ross & Co., have been awarded the contract for furnishing the pews for the new Presbyterian church. The seating capacity will be 1000 and the pews will cost about \$1,000.—Messrs. Ward & Stelle have been awarded the contract for the improvements to be made to the Daniels Hotel

VANCOUVER, B. C.—The tenders for the construction of the First Presbyterian Church have been opened, and the contract has been awarded to Messrs. Friser Bros.—Mr. Horrobin has been awarded the contract for the erection of the brick and stone building to be erected by the Marquis of Queensberry on the site of the o'd St. Charles Hotel building.

# TERMS OF ARCHITECTS' CERTIFICATES.

A curious case which turned upon the terms of an architect's certificate has been tried in Melbourne. The action was brought by a builder to recover the amount stated in a final certificate. In 1890 the plaintiff agreed to erect a house in St. Kilda, according to designs by Mr. Askew, architect, and to his satisfaction, for 8,900l. After the work was completed the builder applied for a final certificate, but the building owner at the same time sent in a protest against the granting of such a document on the ground that he had sundry claims to bring against the builder. The architect gave a certificate to the following effect:—"I hereby certify that the contractor is entitled to receive the sum of 660l. 19s. 10½d. as final payment of contract and extras in erecting residence at St. Kilda. This certificate is issued subject to any counterclaim you may have against him, this being the final instalment. At the same time the architect wrote to the builder saying:—"Herewith I forward you a certificate for 660l. 19s. to ½d. as final payment on account of contract and extras in erecting residence at St. Sinal payment on account of contract and extras in erecting residence at St.

dence at St. kilda. As owner has intimated to me that he has claim upon you for delay and other deductions and omissions than those in my statements of account dated July 16 and 28, the certificate is issued subject to his counterclaims, an account of which he will render to you direct without my intervention." The building owner declined to act on the certificate, and the action was brought to recover the sum named, together with 50%.

10s. for extras.

The defence brought forward was that the certificate was not valid within the meaning of the contract, inasmuch as it not set forth that the work had been performed to the architect's satisfaction that although it purported to be a final certificate, it could not be so, as it was issued subject to any counter-claim defendant might have against plaintiff; that it had been agreed that the contract price should be reduced by 852/, upon certain parts of the plans and specifications being omitted, and that defendant was entitled to set off this amount against plaintfis claim; and as to the extras claimed by plaintiff, that they had never been ordered, and that the wisk had never been done, or, if it had, it was part of the original contract Defendant also claimed to set off against plaintiff's claim the sum of 96%. being penalties for six weeks overtime, at 16*l*, per week, in finishing the work. A counter claim for 2,000*l* damages was also preferred on the ground that the building had not been carried out accordplans and specification, and was ing to therefore very much less valuable than otherwise would have been. On behalf of plaintiff, it was replied that the certificate was a final one within the meaning of the contract, that the architects' satisfaction with the work, though not expressed in the document, must be implied from his issuing it as a final certificate, and that defendant was therefore debarred from going behind it to establish any counterclaim for overtime or defective work or material. It was further contended for plaintiff that all extras were ordered by either defend ant or his architect, and that the contract time was exceeded on account of these extras and of the non-arrival of various fittings from England. It was held by Mr. Justice Williams that the certificate was a final one within the meaning of the contract and that defendant, by that fact, was precluded from pleading negligent or unproper workmanship. He decided improper workmanship. He decided against defendant as regards penalties on the questions of both law and fact. A verdict was given for plaintiff for the 'mal amount of the certificate, 6601, 19°, 10½d, with costs, but plaintiff's further claim for 50% 105, was disallowed, on the ground of both law and fact. There was a verdict for the defendant on the counterclaim for two small items, amounting to 421. 5s, with costs. The judge said that there ought to have been no interference with the architect in the preparation of the certificate.

#### THE NEW EXPLOSIVE.

Herculite, says Iron, is the name of a new explosive, which, owing to its qualities of slow combustion and safety in handling, is claimed by its inventor, A. Pallé, to be superior to the best of the nitroglycerine compounds. It is yellowisheray powder, and is said to be composed of sawdust, camphor, nitrate of potash and several other substances which are kept secret. Experiments conducted in a quarry with the new explosive showed that a shot could not be fired by sparks, flame or detonation. When burning, a flume similar to that of dynamite is produced which can only be extinguished with difficulty. In the tests, a small quantity of the powder was placed on a stone and struck with a hammer without explosion resulting. A half-pound charge of compound was inserted in a blast hole about four feet deep, which was then tamped with sand and earth, and the explosive was fired by means of a special igniter. The result was that a block of stone weighing 30 tons was displaced without being fractured. By the addition

of naphtha or ammonia to the ingredients of the power it can be made quick-burnng. The price of herculite is stated to be only six cents per pound.

#### MUNICIPAL DEPARTMENT.

#### APPRECIATION OF "THE RECORD."

QUEBEC, Sept. 22, 1892.

Editor CANADIAN CONTRACT RECORD.

DEAR SIR,—Your CONTRACT RECORD is becoming very interesting and instructive. The article under the heading of "Municipal Department," on street grades and decisions of court therein, in a recent issue, is extremely important, and throws much light on a much debated question.

C. BAILLAIRGE.

City Engineer.

#### EPIDEMICS OF TYPHOID FEVER.

It would appear that there has been too much haste in admitting that the spread of various epidemic diseases is due to germs in drinking-water exclusively. This very simple explanation is certainly seductive, but from time to time, facts related by observers whose competence is beyond dispute, uppear to have been overlooked.

Among these contradictory observations, must be citied that by Mr. Arnould, of a grave epidemic of typhoid fever which orginating in the garrison of Landrecies, on the 29th of January, 1891, broke out at Maubeuge in Febuary, and on March 10th attacked the troops of Avesnes, where there were 370 cases and 35 deaths out of a force of 1,300 men.

It should be told that Mr. Arnould at first suspected the drinking-water of having engendered and diffused the malady. Yet the researches which were made on this theory, as well as the discussion of elements, brought into the question by the distribution of the cases observed, made it impossible for Mr. Arnould to maintain the accusation against the drinking water, which is so much the fashion at present.

On the one hand, the water of Landrecies, of recognized purity, is used in common by the soldiers and the townspeople, and among the latter there were but five cases of typhoid, while among the garrison there were sixty-three. Moreover, the practice of boiling the water, used from the beginning of the epidemic, was not discontinued. On the other hand, at Maubeuge, water from three different sources is used, yet among the inhabitants who drank the most suspected of these three, there was not a single case of typhoid. Finally, while at Avesnes the water was defective from all points of view, no one ever discovered in it the typical bacıllus.

In the diffusion of the epidemic, the part played by man appeared considerable; either the sick persons or those coming from the seat of the disease contaminated healthy individuals by direct contract, or contagion was brought about by the intervention of clothes, food, air, or even water. Thus at Maubeuge, where there were 250 cases of typhoid fever, one physician and twelve hospital attendants out of fifty-five were attacked by the disease, when as yet but a single man of the garrison had been ill with it. Finally, there were some cases observed among those employed in the work of disinfection, and there were very clear proofs that the

MUNICIPAL ENGINEERS, CONTRACTORS, AND MATERIALS.

malady was carried to six neighboring localities by the intervention of third persons who were not taken ill themselves.

Be it understood that where there have been epidemics of typhoid fever in a garrison, it has always been recognized that an assisting cause of the disease, outside of defects of town hygiene, is the state of the atmosphere; but what appeared to demonstrate very clearly diffusion of the disease by the atmosphere is the fact that while the prophylaxis, based on the idea of a diffusion of the malady by germs contained in the water, was unsuccessful, the temporary abandonment of the seat of the disease by the troops, and the rigorous disinfection of places and objects were followed by the rapid and final distinction of the epidemic .- Revue Scientifique.

#### COUNTRY ROADS.

In the St. Thomas Journal, Mr. Geo. E. Casey, M. P., writes on the subject of country roads. We give his conclusions. In the first place there are certain principles of road making, on which, with proper advice, the municipal authorities should establish certain standards such a standard for main highways, such and such for side lines and concessions. Let the roads be made uniformly on these principles, not all finished at once, but all on the same plan as far as the money goes, "Commute all statute labor as at present assessed on an uniform cash basis, adding what is now spent in grants. Let those who would rather work than pay cash hire their teams or themselves to the township and get some ready money in a slack season of the year. The pathmaster should make and mend like the section boss of a railway, guided by an uniform system of instructions and not by his own whim. He calls attention to the following among other advantages:-Roads should be so built that each year's work would bring them nearer to the standard established, whereas now it often makes them worse. They would be practically permanent when completed. When a road is once well made it takes a great deal of road-making to unmake it. Sometimes the roads badly need mending at seasons when it is not convenient to do road work. Under this plan they could be attended to without troubling the farmer. All this would involve no new cost unless, after trial, it was decided to incur it.

The durability of iron bridges is being investigated abroad, and the conclusions of the English and German experts seem to show that, under the most favorable circumstances, iron bridges are not safe for a period exceeding seventy-five years.

The York Recorder prints extracts from the Road Companies Act with the intent of showing that Reeve Humberstone of York township is right in disputing the authority of the County Council to grant street railway or other franchises over the roads within the township without first securing the consent of the Township Council. If this contention is held good the charters of the Metropolitan, the Mimico, the Junction and other electric railways running over country roads are valueless.

## THOROLD CEMENT

Welland Canal Enlargement. RESIDENT ENGINEER'S OFFICE. WELLAND, April 17th, 1884.

JOHN BATTLE, Esq., Thorold.

JOHN BATTLE, Esq., Thorold

Dear Sir,—Yours of yesterlay, relative to Thorold Hydraulic Cement, is received. In reply, I beg to say that my tests of the Thorold Hydraulic Cement have extended over a period of twenty-eight years, and have been on a large scale, as exemplified in the locks, bridges, culverts and other masonry on the Welland Canal and Welland Railway, and that the record, which has been invariably satisfactory, is to be found in examination of the structures. The necessary tearing down of masonry and concrete, during the Welland Canal Enlargement, has afforded abundant evidence of the reliability of the Thorold Hydraulic Cement, both in masonry and concrete, and above and under water. I desire no better cement for the class of work referred to.

I am, dear sir, yours truly,

I am, dear sir, yours truly, W. G. THOMPSON.
Resident Engineer.

#### ISAAC USHER & SON, THOROLD, ONT.

Manufacturers of

## **QUEENSTON CEMENT**

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7	'oronto.	Iontreal.	Toron	to. Montreal.
Black, lamp	15 15	12 25	3d to 5d cold cut, not polished	
Ulue, ultramarine	15 80	12 25	or blued, per 100 lbs	99 90
Oil, linscool, raw, & Imp. gal.	65 68	63 65	PINK SLUED HAILS	
" boiled "	68 71	66 68		150 150
) TIMICUI	78 85	33		100 100
Putty	** **	3)( 2)4	CASING AND BOX, PLOORING, SHOOK	AND TOBACCO BOX
Paris white, Kng., dry	75 100	0 73	NAILS.	
Litharge, Am.	654 8	634 8	rad to god, per roo lbs	50 50
Sienna, bumt	15 10	22 25	104, " "	<b>6</b> 0 (0
Umber, "	134	12 15	8d and 9d, " "	75 75
		,	od and 70, " "	90 90
CEMENT, LI	MB, etc.		49 10 201	1 10 1 10
	160 230		30,	1 50 1 50
" Thorold, "	t sa		Finishino Hails.	
" Queenston, " "	1 50		3 inch, per 100 lbs.,	85 55
" Napanee, "	1 50		3 to 3 1 " " " "	100 100
" Rull, " "	1 50			11. 115
u Ontario i	1 10		1 1/4 to 1 1/4 " " "	1 35 1 35
n detiliar		265 285	1X	175 175
		3 45 3 90	•	2 25 2 25
0.1.1		2 35 2 50	RLATING HAILS.	
u Ca adian "		23. 240 225 230	5d, per 100 lbs	85 85
u Noman "		* 75	4U,	85 85
Parian		150 475	30,	1 25 1 25
" Superfine "		050 700	2u,	175 175
Keene's Coarse "Whites"		4 50 4 75	COMMON BARREL HAIL	
Calcined plaster, per barrel		135 170		150 150
Fire Bricks, Newcastle, per M	3	0 (0 24 00		1 75 75
" Scotch "		000 35 60	• •	125 225
Lime, Per Barrel, Grey	40		CLINCH NAILS.	
" White	55		inch, per 10 ; lls.	85 85
Plaster, Calcined, N. H	1 00			100 100
N S	2 00		3 grid 3.77	1 15 1 15
Hair, Plasterers', per bag	80 100		174 800 174	1 35
HARDWA	RB.			7 00 2 00 7 50 2 50
Cut nalls, 5 d & 6:d, per keg	2 40	2 25		
Steel " " " "	2 50	# 35	SHARP AND FLAT PRESED	
CUT NAILS, FENCE AN	D CUT STIKES	i		35 35
40d, hot cut, per 10 lbs	5	3		1 50 1 50 1 65 1 65
30d, 11 11 11 11 11 11 11	3.0	10	ski and ski ii ii ii	185 185
rod, 16d and 12d, hot cut, per				250 250
, ico lbs	15	13		300 310
rod, ho; cut, per roalbs	20	20	Structural Iron	
00, 90, 11	*5	25		
00, 70,	40	<b>40</b>		75 250 285 260
4d to 5d," "	93 (	100		250 230
3d, " " " " " " " " " " " " " " " " " " "	1 50	1 50		180 255
4d to 5d cold cut, not polished	. :•	. 30		55 235
or blued, per to lbs	50	50		2 25 2 35
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