

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

Coloured covers/
Couverture de couleur

Coloured pages/
Pages de couleur

Covers damaged/
Couverture endommagée

Pages damaged/
Pages endommagées

Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée

Pages restored and/or laminated/
Pages restaurées et/ou pelliculées

Cover title missing/
Le titre de couverture manque

Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées

Coloured maps/
Cartes géographiques en couleur

Pages detached/
Pages détachées

Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)

Showthrough/
Transparence

Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur

Quality of print varies/
Qualité inégale de l'impression

Bound with other material/
Relié avec d'autres documents

Continuous pagination/
Pagination continue

Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure

Includes index(es)/
Comprend un (des) index

Title on header taken from: /
Le titre de l'en-tête provient:

Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

Title page of issue/
Page de titre de la livraison

Caption of issue/
Titre de départ de la livraison

Masthead/
Générique (périodiques) de la livraison

Additional comments: /
Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below /
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	14X	18X	22X	26X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12X	16X	20X	24X	28X	32X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CANADIAN CONTRACT RECORD

A WEEKLY JOURNAL OF 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 THROUGHOUT CANADA.

Vol. 4. DECEMBER 21, 1893 No. 44

THE CANADIAN CONTRACT RECORD,
PUBLISHED EVERY THURSDAY
As an Intermediate Edition of the "Canadian Architect and Builder."
Subscription price of "Canadian Architect and Builder" (including "Canadian Contract Record"), \$2 per annum, payable in advance.
C. H. MORTIMER, Publisher,
CONFEDERATION LIFE BUILDING, TORONTO.
Telephone 2362.
64 Temple Building - Montreal.
Bell Telephone 2299.
Information solicited from any part of the Dominion regarding contracts open to tender.
Advertising Rates on application.

At its Convention held in Toronto, Nov. 30 and 21, 1889, the Ontario Association of Architects signified its approval of the CANADIAN CONTRACT RECORD, and pledged its members to use this journal as their medium of communication with contractors with respect to advertisements for Tenders.
The following resolution was unanimously adopted at the First Annual Meeting of the Province of Quebec Association of Architects, held in Montreal, Oct. 10th and 11th, 1890: "Moved by M. Perrault, seconded by A. F. Dunlop, that the Architects of the Province of Quebec now assembled in Convention being satisfied that the CANADIAN 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 Tenders."
Subscribers who may change their address should give prompt notice of same. In doing so, give both old and new address. Notify the publisher of any irregularity in delivery of paper.



Notice to Contractors

Tenders will be received by registered post, addressed to the City Engineer, Toronto, up to 11 o'clock a. m. on SATURDAY, DECEMBER 23RD, 1893, for the construction of the following

SEWERS:

On May Street, from Hill Street to its north end.
On Hill Street, from South Drive to May Street.
On Severn Street, from Rosedale Drive to Severn's Lane.

Plans and specifications may be seen and forms of tender obtained on and after December 16th, 1893, at the office of the City Engineer.
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 1/2 per cent. on the value of the work tendered for over that amount, must accompany each and every tender, otherwise it will not be entertained. All tenders must bear the bona fide signatures of the contractor and his sureties (see specifications), or they will be ruled out as informal.
The Committee do not bind themselves to accept the lowest or any tender.

DANIEL LAMB,
Chairman Committee on Works.
Committee Room, Toronto, Dec. 11, 1893.

TENDERS WANTED.

Sealed tenders will be received up to 12 o'clock noon, 28TH INSTANT, for the erection of a

Brick and Stone 4-roomed School House at Smith's Falls.

Marked cheque for \$200 to accompany each tender. Plans and all particulars may be seen at Dr. McCallum's office on and after the 11th inst. No tender necessarily accepted. Satisfactory security will be required for the proper completion of the work.

J. S. McCALLUM, M.D.,
Chairman Building Committee,
J. A. ELLIS, ESQ., Smith's Falls, Ont.
Architect, Toronto Junction.



Notice to Contractors

Tenders will be received by registered post, addressed to the City Engineer, Toronto, up to 11 o'clock a. m. on TUESDAY, DECEMBER, 26th, 1893, for the following:

A FIVE-FOOT STEEL PIPE

for the Extension of the Yonge Street Sewer.

Specifications may be seen and forms of tender obtained on and after Wednesday, December 20th, 1893, at the office of the City Engineer.

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 material tendered for under \$1,000, and 2 1/2 per cent. on the value of the material tendered for over that amount, must accompany each and every tender, otherwise it will not be entertained.

All tenders must bear the bona fide signatures of the contractor and his sureties (see specifications) or they will be ruled out as informal. The committee do not bind themselves to accept the lowest or any tender.

DANIEL LAMB,
Chairman Committee on Works.
Committee Room, Toronto, Dec. 19, 1893.

BARTER AND EXCHANGE.

This department has been opened for the speedy barter and exchange of second-hand plant or material, or small lots of new or second-hand materials by builders and others not regularly engaged in the sale of such articles. Advertisements other than those of the above description will not be inserted.

RATES—12 words and under, 15 cents; each additional word, 1 cent (three figures count one word); on two or more subsequent insertions a discount of 10 per cent. will be allowed. Not more than four insertions of an advertisement can be granted.

Replies to advertisements may be addressed to a box at this office, in which case necessary stamps must be sent for re-mailing replies. Advertisements for this department must be prepaid.

WANTED—A quantity of old 12" joisting, various lengths. Address, F. EATHERLY, 35 Howie Ave.

TENDERS

Sealed tenders will be received for \$6,788.75 5 per cent. debentures of the Town of Walkerton up to WEDNESDAY, THE 27TH OF DECEMBER, 1893. First debenture and interest falls due 31st December, 1894. The remaining eighteen annually same date in each year.

For further information apply to
GEO. GOULD,
Walkerton, Dec. 11th, 1893. Town Clerk.

CONTRACTS OPEN.

WINCHESTER, ONT.—The Presbyterian congregation will build a \$10,000 church next spring.

MONTE BELLO, QUE.—Plans are being prepared by Mr. Bourassa for a new Catholic church to be built here.

GUELPH, ONT.—Mr. D. S. Clemens, of Winterbourne, is considering the erection of a stove and heading factory here.

MAISSONEUVE, QUE.—Tenders have been invited for the construction of a number of sewers; J. Emile Vanier, Chief Engineer.

SACKVILLE, N. B.—The authorities of the Methodist college at this place are having plans prepared for a library building to cost about \$20,000.

NELSON, B. C.—The proprietors of the Silver King mine contemplate the building of a concentrator, and have sent out a request for bids for furnishing 1,000,000 feet of lumber for that purpose.

SOREL, QUE.—The St. Lawrence Cotton Company has been incorporated by the Dominion Government with headquarters at this place. It is said the factory building alone will cost \$250,000.

OTTAWA, ONT.—The agreement between the city and the Pontiac and Pacific Junction Railway Company for the construction of a railway and traffic bridge over the Ottawa river, was signed recently.

LONDON, ONT.—The wardens of St. Paul's Cathedral have been granted leave by the Executive Committee of the Diocese of Huron to borrow the sum of \$25,000 for the purpose of completing the building.

WELLAND, ONT.—The Welland Power and Supply Canal Company are applying for incorporation with power to construct a canal from the Welland river to Thorold, for the purpose of developing water power.

BROCKVILLE, ONT.—Mr. Wm. McEwen, of Brooklyn, who purchased the Wagoner point, opposite Alexandria Bay, contemplates the erection of a \$4,000 cottage thereon next spring. Messrs. Samuel Rogers & Co., oil manufacturers, of Toronto, will build a barrel factory here.

YARMOUTH, N. S. Mr. Ambler, C. E. is surveying the locations of the coast railway line to Tusket, and as soon as the plans are completed, tenders will be called for a section of the road. The company require 30,000 sleepers for the first ten miles, tenders for which will be called for early in January.

WINNIPEG, MAN.—A strong company has been formed to build a street car line between Rat Portage and Keewatin.—Mr. J. Macdonnell, of the Public Works Department, recently visited Wawanesa for the purpose of reporting to the Government on the question of constructing a bridge over the river close to that town.

QUEBEC, QUE.—David Ouellet, architect, is preparing plans for the inside decoration of the church of St. Germain of Kamouraska, to be in wood with carvings including pews, altars, pulpit, communion table, etc. Cost about \$7,500. The same architect is preparing plans for a new presbytery in the same parish, to be frame work, with stone foundations. The inside work to be in pine, painted. Cost about \$4,000.

SYDNEY, C. B.—Mr. Hiram Donkin, Chief Engineer, invites tenders until noon of the 26th inst. for the grading and masonry of a section of the Dominion Coal Company's railway extending from a point near Back Lands Row to a point near Bridgeport, about nine miles in length, the work to be finished before the 1st of September, 1894. Profiles may be seen at the office of the Chief Engineer and at the Resident Engineer's office, Cow Bay.

HAMILTON, ONT.—Mr. H. J. Donahoe, of the McCallum Steel Wheel Waggon Company, of Chicago, was in the city recently in connection with the establishment of a branch manufactory in this city. Several sites for the proposed building were inspected, one of which will probably be selected.—The Canadian Bank of Commerce has been granted a permit for alterations to a building on King street east, to cost \$2,000.—At a meeting of representatives of the various athletic clubs held a few days ago, the scheme to purchase the old post office building and erect a large music hall and gymnasium was approved of, and it was decided to appoint a committee to further the scheme.

MONTREAL, QUE.—The scheme to run a continuous line of railway from Gaspé Basin to Sault Ste Marie has been revived. A special meeting of the shareholders of the Atlantic and Lake Superior Railway Company is to be held on the 3rd of January to consider agreements for the purchase of the various railways along the line and also to authorize the issue of bonds for carrying out the schemes of the company. The total distance would be about 1,500 miles. Of the 180 miles of the Baie des Chaleurs railway, from Gaspé Basin to Metapedia, 80 miles are now in operation. Work is to be resumed next season, and the road completed. The line would run over the projected Great Eastern and Montreal and Sorel railway to St. Lambert, a distance of 150 miles. Nearly 60 miles of this road is ready, and some thirty miles are graded. Four piers are constructed in the Nicolet river for the bridge. The intention is to cross the Richelieu river at St. Ours, and the Yamaska river is to be bridged at St.

Anne. The scheme includes a cantilever bridge from Longueuil to the city. An independent line is contemplated to Carillon to cross the Ottawa river.—The project of building a railway bridge from St. Lambert, having a high pier on Isle Ronde and passing over the jail and the city to Sherbrooke street, is again being agitated.

TORONTO, ONT.—The Grand Jury of the General Sessions, in its presentment to the judge, urges the erection of a poor-house where those whose only crime is poverty might be provided for.—The Toronto Ferry Company has made application to the Ontario Government for a lease of the water lot at the island behind the Hotel Hanlan, the object being to move the building some distance back. Other improvements at the island are also said to be in contemplation by the company.—Tenders are wanted until noon of Friday, the 22nd inst. for the plumbing of three solid brick buildings. Plans may be seen at the north-east corner of Shuter and Dalhousie streets.—The Toronto Street Railway Company are making arrangements to provide additional power. The power house will be enlarged to twice its size, and the car sheds adjoining will be refitted for the reception of the new engine and boiler. The plans for the improvements are now being prepared. It is also proposed to increase the power by 6,000 horse power.—The Building Committee of the Public Library Board has been instructed to proceed with the necessary alterations to the basement for the proposed reading room, the cost not to exceed \$750.

FIRES.

A fine terrace of residences on Notre Dame street, Winnipeg, owned by Kelly Bros., were burned on Monday last. Loss, \$35,000.—The polishing room of Raymond's brick factory at Guelph, Ont., was damaged by fire recently, the machinery suffering the greatest loss.—The Oddfellows' block at Tilsonburg, Ont., was destroyed by fire on the 17th inst. The building contained J. Wood's shoe store, Geo. Brasher's general store and C. Thompson's drug store on the first flat, P. Gedde's residence on the second flat, and the Oddfellows' rooms on the third flat. The total loss is about \$40,000.—The axle shop of the Spring and Axle Company at Gananoque, Ont., was damaged by fire last week to the extent of \$2,000, covered by insurance.—A. W. Hepburn's saw mill and sash and blind factory at Picton, Ont., were consumed by fire on the 15th inst. Loss, \$15,000; no insurance.—Phillip Carpenter's residence at Cornwall, Ont., was burned last week.—The villa residence of Mr. Augustus Converse, situated in Lower Melbourne, near Richmond, Que., was destroyed by fire on the 11th inst. Loss, \$4,000; partly covered by insurance.—The dwelling house of D. Hamilton, situated about a mile and a half from the town of Forrest, Ont., was burned on the 13th inst. Loss, \$2,000; partly covered by insurance.—The furniture establishment of Fee & Martin, Montreal, was damaged by fire recently to the extent of \$10,000.—Mr. Cordingley's fine brown sandstone block on Cumberland street, Port Arthur, was completely destroyed by fire on the 15th inst. Loss, \$10,000; insurance, \$4,500.

CONTRACTS AWARDED.

REGINA, N. W. T.—The contract for heating the Assiniboia Club building at this place has been secured by the Gurney Foundry Co., of Toronto.

HAMILTON, ONT.—The directors of the Hamilton, Grimsby, and Beamsville Railway have let the contract to Messrs. Lomer & Rose, of Montreal, for 1,350 tons of steel rails. The contract price is about \$30,000.

LEVIS, QUE.—Messrs. Paquet & Powers, contractors, of this place, have received the contract for the construction of a large section of the Great Northern Railway. They will immediately commence the construction of a bridge over the Lake Ouarreau river.

OTTAWA, ONT.—The contract for heating apparatus for the West Farnham public building has been let by the Public Works Department to Mr. E. Monbleau, of St. Johns, Que. The contract for heating apparatus for public buildings at Lunenburg, N. S., Dartmouth, N. S. and Chatham, N. B., have been awarded to Frank Powers, of Lunenburg; John Boston, of Halifax, and Thos. Campbell, of St. John, respectively.

VICTORIA, B. C.—The contracts for the erection of the new Provincial Government buildings have been secured by local contractors. The following are the successful tenderers: Masons' work, Frederick Adams; carpenters' work, Bishop & Sherbourne; plasterer's work, Richard Drake; coppermith's work, W. H. Perry; plumber's work, H. T. Fleet; ironfounder's work, the Albion Iron Works Co., all of Victoria; painter's work, E. Spillman, Vancouver. The amount at which the several contracts were awarded has not been made public.

BUSINESS NOTES.

Coutlee & Pelletier have formed a partnership as painters in Montreal.

G. Duthie & Sons, roofers, Toronto, have assigned. It is expected that the statement of their affairs will show a small surplus.

The *Legal and Commercial Exchange* reports the following: John Randall, painter, of Ottawa, has assigned to Geo. O'Keefe.—Edward A. Smyth, of the firm of Smyth & Mumford, contractors, Merriton, Ont., died last week.

HOLLOW BONDS IN BRICK WORK.

In the erection of buildings where low cost is a necessity, says the *Brickmaker*, timber is often employed to the exclusion of brick, simply because to use the latter, and at the same time keep the cost within the prescribed limits, would mean using brick of very inferior quality and these would not last much longer than timber. There is a way of using good brick, and yet of keeping the cost low, and that is by employing hollow bonds.

The bonds can only be used in one-brick walls. There are two methods of laying them. The first is to lay all the brick on edge, laying first a header and then a stretcher, and so on throughout the course. The course above is laid exactly in the same way, with the headers in the center of the stretchers below them; the ends of the courses being closed up with closers of the necessary length. The second method of forming hollow bond is first to lay a course of stretchers on edge. This is followed throughout the wall, there being headers flat and stretchers on edge alternately.

Both systems of laying brick produce a fairly strong wall that will safely carry all ordinary weights. For fence walls they may be used with advantage, and for a number of other purposes they may be safely employed.

Hollow bonds are not recommended to the place of solid walls, only where it is necessary to keep the cost low, and where it would be necessary to use an inferior brick if the walls were built solid. Hollow walls erected of good brick are much superior to solid walls constructed of poor brick.

CRACKS IN BRASS PIPES.

Brass pipes may crack from several causes, such as over-pressure, bending strains due to lack of proper support, or to shocks caused by water hammer. But in several cases breaks have been known to occur (says T. H. Bullock) under quite moderate pressure, and where the pipes were entirely free from any external strain or water hammer. He mentions an instance where a piece of 2 in. brass pipe about 4 ft. long burst under a cold-water pressure of 22 lb. The pipe had three level supports in 16 ft., and was supplied from a tank. The tank opened about 1/4 in. wide, and extended 6 ft. A piece 5 ft. long cut from the other end bore simultaneously a

pressure of 200 lbs., and a sharp blow from a hammer, without fracture. That the part which cracked was under considerable internal metallic strain there can be no doubt, for a piece 12 in. in length required a weight of 1,781 lbs. to bring the edges of the crack together again. Probably, what has a good deal to do with the question of why do brass pipes crack, is the hardness of the metal, though why in the case under consideration there should be such different degrees of it within such a short space is puzzling. Mr. Bullock, to satisfy his curiosity, made some experiments in the matter, in which he compared the various tones given out by different pieces of brass tubing when struck with the notes of a piano. These experiments seem to indicate that the inner portion of the metal of the pipe that burst was under a severe compression strain at the point where the break occurred, but that the other end of the same pipe was substantially free from such strain. It also seemed that in some specimens the outside portion was under strain, as the pipe closed slightly when planed open. It also seems that hardness can be ascertained by tone.

NOVEL HARDWOOD FLOORING.

The attention of hardwood dealers has recently been drawn to a novel innovation in hardwood flooring that is the invention of a firm in Chicago. Never until in the last few months has it been practically demonstrated that the ends of hardwood flooring could be tongued and grooved, but this is now an established fact, although it has taken a good many thousand dollars to prove it. Many previous attempts have been made to bring this idea, which is by no means a new one, into practical shape, but the cost of turning out flooring with the ends tongued and grooved by any process known up to this time had been so great that contractors and builders could not see the value in the extra expense, and the manufacture naturally died out. As it is now made, however, such flooring is within the reach of everybody, as it can be manufactured at an extra cost of only one dollar a thousand feet, and the advantages that it possesses makes this small addition of price of very small consequence in comparison. It has taken long time and study to produce the wood-working machinery to bring about such results, but the success that is attending the introduction of this flooring fully compensates for the time and labor spent in perfecting it. Architects and builders for a long time have deplored the fact that the best of hardwood flooring, no matter how well laid it might be, would ultimately shrink to some extent and spring up at the ends. In this new kind of dovetailed flooring all such difficulty is obviated, besides furnishing an even joint that can hardly be detected. Two weeks ago this flooring was an unknown quantity in the Twin Cities, but even now in Chicago Architects have so readily taken to the idea that they are introducing it into their specifications.

MUNICIPAL DEPARTMENT.

LEGAL DECISIONS AFFECTING MUNICIPALITIES.

Perhaps the most important decision given of late years in the matter of street improvement, says the *Contract Journal*, is that recently given by the Sheffield stipendiary, Mr. E. M. Welby. The issue tried was as between the Corporation of Sheffield and certain executors regarding objections made to the proposals of the Corporation to execute certain private street works. The engineer to the Corporation, Mr. C. F. Wike, had, upon instruction, prepared specifications, plans, and apportionment for the works required. Objection had been made to these plans, it being contended that the works were unreasonable and the expenses excessive. There was of course, a conflict of opinion, and in the end the magistrate decided against the Corpora-

tion. The decision will probably be upset upon the appeal. However, the strangeness of the decision is that the magistrate decides certain questions by which he assumes new duties. A full account of the case appears elsewhere in our columns, and it will be seen that the magistrate decided what kind of material was to be used for the roadway, and that it is not necessary for a street to have a sewer before it is taken over by the corporation. It is hardly necessary to refer to the powers of corporations in relation to private streets. These will be found set forth and discussed in Mr. Spink's admirable book on "Paving, etc." It has usually been held that the authority will decide as to materials, etc., and indeed, it seems to us that no other party is in a position to decide. There must be a continuity of design in the roads and streets and sewers, otherwise the authorities might be led to great and unnecessary expense in maintenance and reconstruction. The duly appointed engineer to an authority is certainly a specialist, and it may be taken for granted that engineers to our large towns have had great experience in street construction, and are the very best men to say what is or what is not required. They have no reason for unreasonableness, but they have very good reasons to see that the new streets and sewers are constructed in a proper manner and in accord with the general engineering of the town. As far as we can see, Mr. Wikes's plans, which were supported as reasonable by colleagues from other important towns, are just such as might have been expected from so competent an authority. The continuation of this case in the Court of Appeal will be interesting, and we shall then find if it is competent for a magistrate to decide upon tar macadam when the authority says granite randoms ought to be used, or that an open channel is a sufficient sewer when the authority decides upon a properly constructed underground channel.

LANGLEY VS HARMAN.—In this case lately decided by the Michigan Supreme Court—The plaintiff Langley is a contractor in Detroit, and three years ago sent in his tender for certain sewerage work required by the city of Windsor, Ont. His tender was accompanied by the usual certified check for \$2,000, and he was given the contract. He refused to take it and the contract was given to the next lowest tender, which was \$1,400 higher than Langley. The city concluded that Langley was to pay this, but when they presented it for payment at the Detroit bank it was found that an injunction had been served on the bank ordering them not to pay it. The chairman of the Board of Works, was made defendant, and the Detroit court held that the city had no right to the amount. The city carried it to the Supreme Court of Michigan, which reversed the decision.

CORPORATION OF TORONTO V. ATTORNEY-GENERAL OF THE DOMINION OF CANADA.—This was a petition for leave to appeal from the judgment of the Supreme Court of Canada to the Privy Council in England. The city of Toronto is authorized to give a discount for prompt payment of water rates. The system upon which they have proceeded to collect rates is, in some cases, by meter; in others by assessing a sum upon each house, charging so much to those who consume the water and allowing a discount. But they have declined to allow this discount to those who are exempt from all other city taxation, on the ground that they have contributed nothing towards the expense of building the waterworks, and it would be unreasonable, therefore, to give them the same advantage and to supply the water to them at the same price as they do to the others. The question presented to the Court was as to the city's right to do that. The Privy Council were of the opinion that the judgment of the Supreme Court holding that the city had no right to discriminate was so plainly correct that they refused leave to appeal.

MUNICIPAL ENGINEERS, CONTRACTORS, AND MATERIALS.

To remove varnished wallpaper scrape off strips about an inch apart. Then give a coat of hot water, which will soak through in a short time. If this is not effectual, a liberal coat of thick paste may be applied. This will hold the water, preventing it running down. In very obstinate cases, a second coat of paste may be necessary, and it should be applied before the first coat is entirely dry.

Municipal Officers, Contractors and others are requested to mention the CONTRACT RECORD when corresponding with advertisers.

DEBENTURES WANTED.

Municipalities issuing debentures, no matter for what purpose, will find a ready purchaser by applying to **G. A. STAMSON, 9 Toronto Street, Toronto.**
N.B.—Money to loan at lowest rates on first mortgage.

Established 1841.

THOROLD CEMENT

MANUFACTURED BY
ESTATE OF JOHN BATTLE,
Thorold, Ontario.

GRAND TRUNK RAILWAY CO. OF CANADA.
CHIEF ENGINEER'S OFFICE,
HAMILTON, ONT., Oct. 17, 1893.

REPRESENTATIVES OF THE
ESTATE OF JOHN BATTLE,
THOROLD, ONT.

Gentlemen: In reply to yours of September 19th last as to the cement manufactured at the John Battle Works, Thorold, Ontario, we have been using it on this Division of the Grand Trunk Railway for many years, and have found it to be of good quality.

Yours truly,
JOSEPH HOBSON,
Chief Engineer.

Drummond McCall Pipe Foundry Company,

MONTREAL

MANUFACTURERS OF

CAST IRON WATER AND GAS PIPES

WORKS: LACHINE, QUE.

PRICES ON APPLICATION.

Ontario Water Meter Co., Ltd.

MANUFACTURERS OF

WATER METERS

Meter Supports, Dial Extensions, Fixture Locks, Water Cart Registers, Strainers, Coupling Seals and Reservoir Indicators.

Send for Price Lists and Testimonials. Our meters are adopted and in use in over 500 cities and towns in Canada and the United States. Highly endorsed by leading Engineers. A guarantee for five years given with all Meters. All information furnished on application to

A. C. WINTON, Secretary-Treas.

Office: No. 23 Toronto Street, Toronto, Ont.

MUNICIPAL OFFICIALS should see to it that in the erection of town and city PUBLIC BUILDINGS, the installation of water works plant, etc., the advantages of . . .

MINERAL WOOL



are made use of for deadening sound in floors and partitions, insulation of heat and cold, fireproofing, etc., also SECTIONAL MINERAL WOOL COVERING for steam pipes, boilers, exposed water pipes, etc.

CANADIAN MINERAL WOOL CO., Limited, 122 Bay Street, Toronto.

Montreal Agent: **GEO. A. COWAN, Room 23, 204 St. James St.**

GEO. R. THOMPSON & CO.,
Agent, Winaipeg, Man.

WILLIS CHIPMAN, B. A. Sc.,

M. Can. Soc. C. E.; M. Am. Soc. C. E.;
M. Am. W. W. Ass'n.

CIVIL AND SANITARY ENGINEER

Water Works - Sewerage
Sewage Disposal

103 BAY STREET - TORONTO.

J. McDougall, C. E.,

ENGINEER COUNTY OF YORK,

Consulting Engineer for Municipal Work.

Electric Railways and Bridges.

COURT HOUSE, - TORONTO.

JOHN GALT

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

Consulting Engineer.

20 Years' Practical Experience in England, United States and Canada in Civil, Sanitary, Hydraulic, and Mechanical Engineering.

SPECIALTIES:

WATERWORKS, SEWERAGE, ELECTRIC RAILWAYS.

Office - Rooms 99 and 100,

CANADA LIFE BUILDING. - TORONTO.

Fire Bricks and Cement

DRAIN AND WATER PIPES

SANITARY EARTHENWARE

LONDON PORTLAND CEMENT

GUARANTEED GENUINE.

Paving and Scoria Bricks for Stables, Sidewalks, Yards, etc.

Large quantities on hand and to arrive. We handle only the best quality. Prices lower than ever.

F. HYDE & CO.

31 Wellington Street, - MONTREAL,

Sole Agents for

THE "GRANTRYX" SMOKE TEST AND DISINFECTING MACHINE.

PORTLAND CEMENT

BEST AND CHEAPEST IN TORONTO.

JOSSON, PETERS and BURHAM Brands for highest class work.

WHITE HORSE, R. W., IMPERIAL, &c. FROM \$2.00 PER BARREL.

Nichols, Smythe & Co., - 25 George St., Toronto.

CEMENT CONTRACTORS TO THE CITY OF TORONTO.

Telephone 1048 or call and see us.

CANADA PIPE AND FOUNDRY CO. . . .

MANUFACTURERS OF

Cast Iron Pipes and Special Castings

Works: MONTREAL AND ST. HENRI, QUE.

CORRESPONDENCE SOLICITED.

THE STANDARD DRAIN PIPE CO.

OF ST. JOHNS, P. Q., (LIM.)



Manufacturers of

Salt-Glazed,
Vitrified

SEWER

PIPES

Double Strength
Railway Cul-
vert Pipes,
Inverts, Vents,

AND ALL KINDS OF FIRE CLAY GOODS.

STEVENS & BURNS

London, Ont.

To Municipal Corporations and Contractors:

... WE MANUFACTURE ...

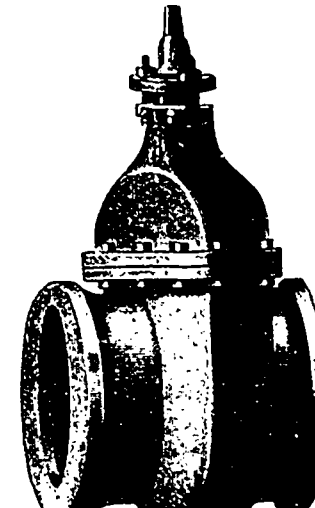
Hydrants, Valves, Valve Boxes

and Water Works Supplies Generally,

INCLUDING

Tools for tapping mains under pressure

and Service Brass Work of all descriptions.



THE ENGLE CREMATING CLOSET

A SUBSTITUTE FOR PRIVY VAULTS AND CESS POOLS.

A PERFECT SANITARY TRIUMPH,

Applicable to the use of schools, colleges, hospitals, factories, asylums and dwellings.

This closet is invaluable where sewer and water privileges are not obtainable, possessing all the convenience of the modern water closet.

Manufactured and erected in sizes suitable to any number of persons, by

TORONTO FURNACE & CREMATORY CO., LTD.

8 & 10 Queen St. East, TORONTO.

WRITE FOR CATALOGUE CONTAINING FULLEST INFORMATION AND EXPLANATION.

THE G. & J. BROWN MFG. CO.

Railway and Contractors' Plant.

BRIDGE BUILDERS

BELLEVILLE, ONT.

CENTRAL BRIDGE AND ENGINEERING COMPANY, (LIMITED)
 Peterborough, Ont.
 WM. H. LAW, Manager and Engineer,
 MANUFACTURER OF

RAILWAY AND HIGHWAY BRIDGES

Viaducts, Piers, Roofs, Turntables and Girders in Steel and Iron.
 Tension members forged without welds. Riveting done by hydraulic or compressed air machines. Specialties: Good workmanship and strict adherence to specifications and drawings.
 CAPACITY: 2,000 TONS PER ANNUM.

ISAAC USHER & SON, THOROLD, ONT.
 Manufacturers of

QUEENSTON CEMENT
 Proved by Government tests to be the best Canadian natural cement. Write for prices, &c.

OUR SALES OF
"BURHAM"
 Portland Cement..
 for the past 8 months have been
25,499 CASKS.

"Burham" Brand outranks all others. Try it and be convinced.

Sole Consignees for Canada:
McRAE & CO., OTTAWA

Prices of Building Materials.

CONDITION OF THE MARKET.
 We have to report prevailing quietness in the building trade, and consequently very little demand for builders supplies. Dealers are preparing for the spring trade, which it is thought will be fairly brisk. A good demand is reported for plumbers' supplies. There is absolutely nothing doing in cement, lime and sand, and prices remain the same. Trade in glass shows some improvement, and the usual jobbing trade is reported in paints and oils.

LUMBER.
 CAR OR CARGO LOTS.

Toronto.		Montreal.	
\$	¢	\$	¢
1 1/2 to 2 clear picks, Am ins.	33.00	36.00	40.00
1 1/2 to 2 three uppers, Am ins.	37.00	40.00	45.00
1 1/2 to 2 pickings, Am ins.	26.00	27.00	30.00
3 inch clear	25.00	25.00	30.00
1 x 10 and 12 dressing and better	20.00	23.00	18.00
1 x 10 and 12 mill run	16.00	17.00	19.00
1 x 10 and 12 dressing	20.00	22.00	18.00
1 x 10 and 12 common	13.00	14.00	8.00
1 x 10 and 12 spruce culls	10.00	11.00	10.00
1 x 10 and 12 culls	9.00	10.00	9.00
1 inch clear and picks	28.00	33.00	35.00
1 inch dressing and better	20.00	22.00	20.00
1 inch siding, mill run	14.00	15.00	16.00
1 inch siding, common	12.00	13.00	14.00
1 inch siding, ship culls	12.00	12.00	12.00
1 inch siding, mill culls	9.00	10.00	8.00
Cull scantling	8.00	9.00	8.00
1 1/2 and thicker cutting up plank	21.00	26.00	22.00
1 inch strips, 4 in. to 8 in. mill run	14.00	15.00	14.00
1 inch strips, common	11.00	12.00	12.00
1 1/2 inch flooring	16.00	17.00	15.00
1 1/2 inch flooring	16.00	17.00	14.00
XXK shingles, sawn, per M	2.50	2.60	2.70
XX shingles, sawn	1.50	1.60	1.70
Lath	2.40		
YARD QUOTATIONS.			
Mill cull boards and scantling	10.00		10.00
Shipping cull boards, promiscuous widths	13.00		13.00
Shipping cull boards, stocks	16.00		16.00
Hemlock scantling and joist up to 16 ft.	11.00	12.00	10.00
Hemlock scantling and joist up to 18 ft.	12.00	13.00	13.00
Hemlock scantling and joist up to 20 ft.	13.00	14.00	14.00
Scantling and joist, up to 16 ft	14.00	14.00	14.00
" " " " 18 ft	15.00	15.00	15.00
" " " " 20 ft	16.00	16.00	16.00
" " " " 22 ft	17.00	17.00	17.00
" " " " 24 ft	19.00	19.00	19.00
" " " " 26 ft	20.00	21.00	21.00
" " " " 28 ft	22.00	23.00	23.00
" " " " 30 ft	24.00	25.00	25.00
" " " " 32 ft	27.00	27.00	27.00
" " " " 34 ft	29.00	29.00	29.00
" " " " 36 ft	31.00	31.00	31.00
" " " " 38 ft	33.00	33.00	33.00
" " " "	0 t	0 t	36.00

Toronto, Montreal.

Cutting up planks, 1 1/2 and thicker, dry	25.00	28.00	25.00	26.00
Cutting up planks, 1 1/2 and thicker, board	18.00	24.00	18.00	22.00
Cedar for block paving, per cord	5.00		5.00	
Cedar for Kerbing, 4 x 14, per M	14.00		14.00	
B. M.				
1 1/2 in. flooring, dressed, F.M.	36.00	30.00	28.00	31.00
1 1/2 in. flooring, rough, B.M.	18.00	22.00	18.00	22.00
1 1/2 " " dressed, F.M.	28.00	28.00	27.00	30.00
1 1/2 " " undressed, B.M.	18.00	19.00	18.00	19.00
1 1/2 " " dressed	18.00	20.00	18.00	22.00
1 1/2 " " undressed	18.00	15.00	12.00	15.00
Headed sheeting, dressed	20.00	35.00	22.00	35.00
Clapboarding, dressed	18.00		18.00	
XXX sawn shingles, per M				
18 in.	3.60	2.70	3.00	3.00
Sawn lath	1.50	2.60	2.50	2.60
Cedar	2.90		2.90	
Red oak	30.00	40.00	30.00	40.00
White	37.00	45.00	35.00	45.00
Basewood, No. 1 and 2	28.00	30.00	18.00	20.00
Cherry, No. 1 and 2	70.00	90.00	70.00	80.00
White ash, No. 1 and 2	24.00	35.00	30.00	35.00
Black ash, No. 1 and 2	20.00	30.00	18.00	30.00
Dressing stocks	16.00	22.00	16.00	22.00
Picks, American inspection	30.00		40.00	
Three uppers, Am. inspection	50.00		50.00	

BRICK—M

Common Walling	7.50	6.00
Good Facing	9.00	8.50
Sewer	8.50	9.00
Pressed Brick, Per M:		
Plain brick, f. o. b. at Milton	16.00	
" " and quality	14.00	
" " 3rd	8.00	
Hard Building	4.50	
Moulded and Ornamental, per 100	10.00	
Roof Tiles	24.00	
Diamond locking tile	16.00	
First quality, f. o. b. at Campbellville		
2nd quality, f. o. b.	14.00	25.00
3rd	11.00	20.00
Ornamental, per 100	3.00	17.00
Tiles	24.00	3.00
Ornamental, per 100	3.00	10.00
Tiles	24.00	26.00

Plain brick, "A" f. o. b. Don Valley	18.00	25.00
" " " " " " " "	16.00	22.00
" " " " " " " "	13.00	18.00
Trojan or Buff	24.00	30.00
Ornamental, per 100	3.00	60.00
Plain brick, f. o. b. Port Credit	18.00	
" " " " " " " "	13.00	
" " " " " " " "	10.00	
Hard Building	3.00	
Ornamental, per 100	3.00	10.00

SAND.
 Per Load of 1 1/2 Cubic Yards

Common Rubble, per ton, delivered	14.00	14.00
Large flat Rubble, per ton, delivered	18.00	18.00
Foundation Blocks, per c. ft. Kent Freestone Quarries, Moncton, N. B., per cu ft., f. o. b.	1.00	
River John, N. S., brown Freestone, per cu. ft., f. o. b.	95	
Balochmyle	80	90
New York Blue Stone		65
Granite (Stanstead) Ashlar, 6 in. to 12 in., rise 9 in., per ft.		70
Most Freestone		75
Thomson's Gatelawbridge, cu. ft. Credit Valley Rubble, per ton, delivered	13.00	14.00
Credit Valley Brown Coursing, per superficial yard	2.50	3.00
Credit Valley Brown Dimension, per cubic foot	90	90
Credit Valley Grey Coursing, per superficial yard	1.50	2.00
Credit Valley Grey Dimension, per cubic foot	75	85
Madoc Rubble, delivered, per ton	14.00	14.50
Madoc dimension floating, f. o. b. Toronto, per cubic ft.	70	32
Ohio Freestone, No. 1 Blue Promiscuous, f. o. b.	60	
No. 1 Blue Dimension	65	
No. 1 Buff Promiscuous	80	
No. 1 Buff Dimension	85	

STONE.

Common Rubble, per ton, delivered	14.00	14.00
Large flat Rubble, per ton, delivered	18.00	18.00
Foundation Blocks, per c. ft. Kent Freestone Quarries, Moncton, N. B., per cu ft., f. o. b.	1.00	
River John, N. S., brown Freestone, per cu. ft., f. o. b.	95	
Balochmyle	80	90
New York Blue Stone		65
Granite (Stanstead) Ashlar, 6 in. to 12 in., rise 9 in., per ft.		70
Most Freestone		75
Thomson's Gatelawbridge, cu. ft. Credit Valley Rubble, per ton, delivered	13.00	14.00
Credit Valley Brown Coursing, per superficial yard	2.50	3.00
Credit Valley Brown Dimension, per cubic foot	90	90
Credit Valley Grey Coursing, per superficial yard	1.50	2.00
Credit Valley Grey Dimension, per cubic foot	75	85
Madoc Rubble, delivered, per ton	14.00	14.50
Madoc dimension floating, f. o. b. Toronto, per cubic ft.	70	32
Ohio Freestone, No. 1 Blue Promiscuous, f. o. b.	60	
No. 1 Blue Dimension	65	
No. 1 Buff Promiscuous	80	
No. 1 Buff Dimension	85	

SLATE.

Roofing (8 squares)	16.00	20.00
" " red	9.00	10.00
" " purple	8.50	6.00
" " unslating green	8.00	7.50
" " black	22.00	
Terra Cotta Tile, per sq. ft.	8.00	
Ornamental Black Slate Roofing	8.00	

PAINTS. (In oil, # lb.)

White lead, Can., per 100 lbs.	6.25	6.50	6.00	6.25
" zinc, Can., " "	6.50	7.50	7.50	8.00
Red lead, Eng.	5.75	6.75		6
" venetian, per 100 lbs.	1.60	2.75	1.60	2.75
" vermilion	90	2.00	90	2.00
" Indian, Eng.	10	12	10	12
Yellow ochre	5	10	4	6
Yellow chrome	15	20	15	20
Green, chrome	7	12	7	12
" Paris	25	40	20	20

Toronto, Montreal.

Black lamp	15	25	12	25
Blue, ultramarine	15	20	12	18
Oil, linseed, raw, 2 Imp. gal.	65	68	63	65
" " boiled	68	71	66	68
" " refined	78	85	75	75
Putty	2 1/2	2 1/2	2 1/2	2 1/2
Whiting, dry, per 100 lbs.	75	1.00	60	75
Paris white, Eng., dry	90	1.25	90	1.10
Litharge, Am.	6 1/2	8	6 1/2	8
Sienna, burnt	15	20	12	15
Umber	8 1/2	12	12	15

CEMENT, LIME, etc.

Cement, Portland, per bbl.	2.40			
" English	2.75	2.10	2.25	
" Belgium	3.25	1.95	2.05	
" Thorold	1.50			
" Queenston	2.25			
" Napanee	1.50			
" Hull	1.50			
" German	2.65	2.85		
" London	2.45	2.90		
" Newcastle	2.35	2.50		
" Belgian	2.30	2.40		
" Canadian	2.25	2.30		
" Roman	2.75			
" Parian	4.50	4.75		
" Superfine	6.50	7.00		
Keene's Coarse "Whites"	4.50	4.75		
Calcined plaster, per barrel	1.52	1.70		
Fire Bricks, Newcastle, per M	16.50	21.00		
Scott	24.00	30.00		

PLASTER, etc.

Lime, Per Barrel, Grey	40			
" " White	55			
Plaster, Calcined, N. B.	2.00			
" " N. S.	2.00			
Hair, Plasterers', per bag	80	1.00		

HARDWARE.

Cut nails, 5d & 6d, per keg	2.40	2.25
Steel	2.50	2.35
CUT NAILS, FENCE AND CUT SPIKES.		
40d, hot cut, per 100 lbs	5	5
30d, " " "	10	10
20d, 16d and 12d, hot cut, per 100 lbs	15	15
10d, hot cut, per 100 lbs	20	20
8d, 9d, " " "	25	25
6d, 7d, " " "	40	40
4d to 5d, " " "	60	60
3d, " " "	1.00	1.00
2d, " " "	1.50	1.50
4d to 5d cold cut, not polished or blued, per 100 lbs	50	50

Toronto, Montreal.

3d to 5d cold cut, not polished or blued, per 100 lbs	90	90
FINE BLUED NAILS.		
3d, per 100 lbs	1.50	1.50
2d, " "	2.00	2.00
CASING AND BOX, FLOORING, SHOOK AND TOBACCO BOX NAILS.		
12d to 30d, per 100 lbs	50	50
10d, " "	60	60
8d and 9d, " "	75	75
6d and 7d, " "	90	90
4d to 5d, " "	1.10	1.10
3d, " "	1.50	1.50

FINISHING NAILS.

3 1/2 to 2 1/2 inch, per 100 lbs	85	85
2 1/2 to 2 1/4 " " "	1.00	1.00
2 to 2 1/4 " " "	1.15	1.15
1 1/2 to 1 1/4 " " "	1.35	1.35
1 1/4 " " "	1.75	1.75
1 " " "	2.25	2.25