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Vol. 3.

Toronto and Montreal, Canada, March 12, 1892.

No. 5

### THE CANADIAN CONTRACT RECORD,

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

PUBLISHED EVERY SATURDAY 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,

14 King St. West. . Toronto, Canada. Telephone 2362.

Montical. 64 Temple Building. -Bell Telephone 2299.

Information solicited from any part of the Dominion regarding contracts open to tender.

ADVERTISING RATES ON ALPLICATION.

At the Convention held in Toronto, Nov. 20 and 21, 1889, the Ontario Association of Architects signified its approval of the CANADIAN CONTRACT RECORD, and pleifed its members to use this journal as their medium of communication with contractors with respect to advertisements for Tenders.

Tenders.

The following resolution was unantmously 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 we the Architects of the Province of Quebec now assembled in Convention being satisfied that the CANA DIAN CONTILAGE 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."

The publish . desires to ensure the regular and prompt delivery of this fournal to every subscriber. and requests that any cause of complaint in this particular be reported at once to the office of publication. Subscribers who may change their address should also give prompt notice of same, and in doing so, should give both old and new

# TENDERS FOR SEWER.

Sealed tenders addressed to the undersigned by registered mail, will be received up to 6 p.m. on THURSDAY, MARCH 31ST, for the construction of a Brick Sewer, 2 ft. 6 in, x 3 ft. 9 in, on Ontario Street, (total length about 500 feet), in accordance with plans and specifications prepared by the Iown Engineer, and which may be seen and full information obtained at the said Engineer's office, Toronto Junction.

All tenders must be made on the form supplied by the corporation, and may be had on upplied tion to the said Engineer.

A deposit in eash or marked cheque, payable to the order of the Town Treasurer, equal to 2½ per cent, of the contract price, must accompany each and every tender.

Tenders must be marked "Tender for Ontario Street Sewer." Scaled tenders addressed to the undersigned

e Council reserves the right to reject the lowest or any tender. ROBT. J. LEIGH. Clerk.

Toronto Junction, March 11, 1892.

NOTIGE.

### THE HYNES TERRA COTTA & BRICK CO. IN LIQUIDATION.

Tenders will be received by the undersigned until MARCH 20TH, 1892, for the whole or part of the following assets of the said Company:

(1) Stock of manufactured TERRA COTTA,

ry complete.
(2) Full stock of MOULDS and MODELS.

(2) Full stock of MOULDS and MODELS, for use in the manufacture of Terra Cotta.
(3) Valuable plaster MODELS and CASES, all mounted and in good order.
(4) Stock of manufactured CENTRE FLOW-ERS and BRACKETS.
(5) RENEWABLE LEASEHOLD PROPLER IV in the City of Toronto, being Water Lot, having thirty-three feet frontage on the south side of Explanade extending to the Windmill line nearly opposite Jarvis Street, with two kins and buildings erected thereon, and boder, engine pug-mills, hand-presses, and a quantity of shafe-

and buildings erected thereon, and boder, engine pug-nills, hand-presses, and a quantity of shafting, belting and pulleys.

The large FOUR STOREY BUILDING and premises on the south side of the Explanade, being the easterly part of the premises now occupied by the said Company, are FO HE LET to a good tenant. Possession can be given at once.

The highest or any tender not necessarily accepted.

cepted.

Full particulars regarding all the assets and property above mentioned can be had on application to

H. W. SMITH, Liquidator of the Hynes Teria Cotta and Brick Company, No. 6t Canada Lafe Building, Torento, or on premises,

or to Wickham, Thompson & Fitzger at D. Barristers Teronto.

### TO CONTRACTORS.

Sealed tenders will be received at the offices of the undersigned architects until noon of MON-DAY, THE 28TH OF MARCH, for all trades DAY, THE 287II OF MARCH, for all trades required in the erection of a new Library Building for the McGill University, Montreal, Each contractor must be prepared to provide, if called upon, two approved surches to the full amount of his contract. It is not guaranteed that the lowest or any tender will be accepted. Plans and specification may be seen on and after the 15th of March at the offices of

MESSRS, TAYLOR & GORDON, 43 St. Francois-Zavier St., Montreal,

Scaled tenders addressed to the undersigned Scaled tenders addressed to the undersigned by registered mail will be received up to 6 o clock p.m. on Thursday, March 31st, 1892, for paving the Keele street sulway and approaches thereto with scorna, tamarae and cedar block, in accordance with plans and specifications prepared by the Town Engineer, and which may be seen and ful information obtained at the said Engineer's office. Toronto Junction.

All tenders must be made on the form supplied by the corporation, and may be had on applied tion to the said Engineer.

A deposit in cash or marked cheque, payable to the order of the Town Treasurer, equal to 2% cent. of the contract price, must accompany each and every tender.

Tenders must be marked "Subway Paving."
The Council reserves the right to reject the lowest or any tender.

ROBT. J. LEIGH, Clerk.

Toronto Junction, March 11, 1892.

MOSAIC.

Critics are divided in omnion as to the origin and meaning of the word mosaic, some deriving it from mosaicum, a corruption of musaicum, which in its turn was a corruption of musivum, the name by which it was known to the Romans. Scaliger derives the name from the Greek and imagines that the name was given to this sort of work as being very fine and ingenious. The materials thus inlaid or joined in small pieces are very various, comprising precious stones, marble, stone of inferior quality, plaster, enamel, wood, etc., and there is evidence that the art of working such fragments into an ornamental device was known in high antiquity. for the tesselated pavements of the ancients are clearly examples of mosaic work-We are told in the book of Esther that in the palace of Ahasuerus was "a pavement of red, and blue and black matble." National Builder.

### REPARATION OF ZINC CASTING.

According to Iron, flaws in zinc casting for ornamental work, or the like, can be concealed by the following preparation. A water glass solution of 33 degrees B, is stirred with Spanish white, adding zinc powder (so called zinc gray) until a period of from six to eight hours, has hardened into an extraordinary solid gray compound. This is polished with an agate stone, when it assumes the brillant white color of metallic zinc. The material is color of metallic zinc then applied to damaged or faulty zinc ornaments and utensils, the reparation effected being of a permanent nature.
This cement is adapted for use on stone and wood as well as on metal and glass.

### RESISTANCE OF MASONRY ARCHES.

The Austrian Society of Engineers and Architects is now engaged in a series of very imporant experiments on the resistance of masonry arches. Sufficient is now known of the strength and elasticity of stone and cements, says Engineing London, to render the theory of the elastic arch applicable to masonry arches which have been and still are designed purely by empiricism, so that in many cases very little is known as to the actual stresses carried by the structures, and there is no doubt that the factor of safety is in many cases excessive. The experiments to be carried out will afford data as to the permissible working stresses, and the design of arches will therefore be simplified. One group of experiments will be devoted to researches of the elastic and resistant pro-perties of the materials to be used in constructing the arches to be experimented on. A second set of experiments will be made on the brick, concrete and terracotta floors now so commonly used in warehouses, and a third set on arches for bridges of seventy-five feet span.

### CONTRACTS OPEN.

ENTERPRISE, ONL. The Methodists of this place will creet a new church.

NORTH GOWER, ONT - A new church is being erected here. Rev. R. Atkinson, pastor

BRANTFORD, ONT. - It is said that the Massey-Harris Co. intend to enlarge their works,

PORTAGE LA PRAIRIE, MAN - The Catholics contemplate the erection of a new church. SIMCOR, ONT. - Mr. Geo. Jackson is preparing

plans for a new registry office in this town CIAVION, ONT. - The railway dock is to be

extended and a covered walk built from the docs to the depot. GORRIE, ONL .- The Methodists have decide

to efect a new church, Nearly \$3,000 has already been subscribed. MINESING, ON G. - The Methodosis of the place are talking of building a new church during

the coming summer. WROXETER, ONT. The sum of \$4,000 has een subscribed towards the erection of a new

Presbyterian church WOODSTOCK, ONL .. The congregation of Knox Church has decided to creet a new church to cost about \$35,000.

FLESHERTON, ONT. - Lenders are wanted to the erection of a brack dweiling house. Plans at Mr. Clarke's residence, this village.

DUCK LAKE, MAN. - A by law has been ca ried authorizing the issue of debentures for the purpose of creeting a new school building.

WHITEIELD, OST. Mr. Goo. Laking wi receive tenders until the 28th inst, for brick clauthing and repairing the Methodist, church at this

NIAGARA LALLS SOUTH, ONT.- At a recent meeting of the School Board it was decided t build a new high school building, to cost about \$10,000

NAPANEL, ONT. - The Gibbard Furniture Co. will shortly commence the erection of their new factory, which will be equipped with the lateimproved machinery.

VANCOLVER, B. C.- Mr. C. Sweeney, manager Bank of Montreal, is calling for tenderfor a new bank building. Messrs. Laylor & Gordon, architects.

WOODSTOCK, N. B .- Specifications and plan for the proposed bridge across the river have been issued and tenders for the construction of the pers are called for.

FERGUS. ONT. - Tenders are wanted for the erection of a stone hospital at the Wellingie. House of Industry. Mr. J. I. Hobson is charman of the Building Committee.

WELLAND, ONT. Mr. Richard Gould - " receive tenders until the 19th inst. for the creuson of a new school house. Plans and specifications to be seen at Mr. F. Hodgkins

OWEN SOUND, ONT .- A deputation has been appointed to interview the Dominion Government with a view to securing a grant for further harbor improvements and a new post office.

MEAFORD, ONT. - A meeting of those interested in the construction of a railway from this town to Duchan was held recently. An effort will be made to secure the carrying out of the project.

SYDENHAM, ONT,—A public meeting will be held here shortly to discuss the construction of a branch railway line between Harrowsmith and Sydenham, to connect with the Bay of Quinte railway.

BETHEL, ONT—Mr. W. C. Switzer will receive tenders until the 15th inst, for a new Methodist church. Plans and specifications can to een at the office of Messrs. Brownscombe & Seebles, Peterboro'.

STRATFORD, ONT,—A two story brick resistence and office for Dr. Devlin will be erected on Franswick St., at a cost of \$2,500. Mr. H. J. (1984), architect, will have charge of the work. (1984) ontracts will be awarded in a few days.

BROCKVILLE, ONT.—The site for the new hostal has not yet been selected. The Street committee of the City Council has been authored to advertise for tenders for 100,000 feet of pine and cedar lumber and 275 feet of curbitone.

VICTORIA, B, C,—It is reported that the C,P. h. will build a line of railway from this city to Nanaimo.—The sum of \$26,000 has been subscribed towards the erection of the new Board of Trade building, and plans will shortly be prepared.

WALKERVILLE, ONT, — It is rumored that Hiram Walker & Sons have purchased the whole of the Ontario Gas Co, and will lay gas pipes from Essex Centre to this place. This firm will also build new offices this spring.—Fifty new cottages will be creeted this summer.

GUELPH, ONT.—The Board of Works has recommended the construction of a new iron bridge to replace the one known as Allen's bridge at an estimated cost of \$1,200.—A Baptist Church will shortly be erected here. Messrs, Langley & Burke, architects, of Toronto, are preparing the pians.

KINGSTON, ONT.—Mr. Arthur Ellis, architect, is preparing plans for a fine residence to be erected for Mr. Vanluven, County Treasurer, near Cataraqui.—The City Engineer will receive tenders until the 17th inst. for plank walks and crossings.—A new Collegiate Institute will be erected, the Public School Board taking over the old building.

LONDON, ONT.—The City Engineer will receive tenders until 5 p.m. on Thursday, the 17th ust., for the supply of the following: Plank sidewalks, artificial stone walks, sewer pipe and cement, lumber, nails, gravel and paving stone. Mr. J. D. Sharman is erecting a brick residence on the corner of St. James and Richmond Sts. The cost will be about \$2,500.

HALIFAN, N. S.—At a recent meeting of the City Council it was decided to proceed with the construction of a duplicate water main from the lakes to city. The estimated cost of the work will be between \$200,000 and \$300,000.—A committee has been appointed to prepare a petition to present to the Government urging the erection of a new drill shed to replace the one recently destroyed by fire,

TORONTO JUNCTION, ONT.—Mr. Peter Ellis is about to creet a detached solid brick house on At nette St., near May St.—The Council has agreed to build that portion of the sewer within the city on Dundas St. Mr. Biggs, engineer, has been instructed to forward the plans at once and arrange with the City Engineer for immediate, ork thereon.—Tenders are invited until the 1st of April for the building of the Ontario St, brick sewer in accordance with the plans of the town engineer—The ratepayers have earned the by 1 ws granting the sum of \$45,000 for the completion of the Keele St, subway and \$9,000 for exertic light purposes.

OTTAWA, ONT. — The congregation of St. Andrew's Church are considering the erection of a new Sunday school building, at an estimated cost of \$20,000.—The City Engineer has been instructed to call for tenders for utrified clay pipe and other drain requirements.—Tenders will be received until Friday, 18th inst., for the construction of two bridges across the river St. Louis, County of Beauharnois, Que. Plans and specification to be seen at the office of Alexis Doutre,

Beauharnois, and at the Dept. of Public Works, this city.—Tenders are wanted by the Dominion Government for filling in and masonry of the new bridge at Oliver's Ferry.—E. F. E. Roy. Sec. Dept. of Public Works, will receive tenders until Friday, 25th inst., for the construction of a public landing wharf at Tracadie, Gloucester County, N.B. Plans at the Department, this city, and on application to Mr. C. C. Turner, Tracadie, N.B.

WINNIPLG, MAN,-The Winnipeg Rowing Club will erect a new boat house this spring .-The board of directors of the new hospital have decided to proceed with the crection of a new building to be used as an isolated hospital, and are advertising for plans and estimates, therefor, -Application will be made to the Dominion Parliament for an amendment to the charter of the Manitoba and Assiniboine Grand Junction railway company, granting the company power to extend its line of ruilroad from a point near Lake Dauphin into the city of Winnipeg .- The residents in the vicinity of Brokenhead will memonalize the local government to grant an appropriation for the construction of a bridge.-Application will be made to the legislature for power to build a branch of the Great Northwestern Central railway to Birtle. - C. H. Wheeler, architect, will shortly award contracts for a residence for M. R. O Loughlin at Arnistrong's Point, cost \$6,000; a residence for Wm. Bathgate on Kennedy street, near Graham, cost \$8,000, and a mansion for John Galt, to be built on River avenue, cost \$11,000. Several plans for buildings at Regina, Morden, Rat Portage and other places are now ready for tenders. - The firm of Carscaden & Peck have decided to commence on April 1st preparatory operations on the basement of their new \$30,000 warehouse, to be built on the corner of Princess and Notre Dame

HAMILTON, ONT.-The managers of the New York Conduit Pipe Co. were in the city recently looking for a suitable site on which to erect a building to be used as a branch factory.-The Street Railway Committee of the Privy Council recommends that the Hamilton, Grimsby and Beamsville Electric Railway Co. be given permission to build its road through the city, provided it completes its line before July 1st, 1893 .-A petition has been presented to the Waterworks Committee of the City Council asking for the construction of a 6-inch water main on Burlington St., a distance of about one mile. A subcommittee was appointed to consider the matter. -Building permits have been granted as follows: F. Slatter, one 2-story bk. dwelling, Blyth St., between Stinson and Alanson Sts., cost \$1,700; Thos. Smith, one 2-story bk. dwelling, south-east cor Barton and Locomotive Sts., cost \$1,200; James McDougall, one 2-story bk. dwelling, adjoining Thos, Smith's, cost \$1,200; Thos, Allen, one 2-story bk, dwelling, Victoria Ave., between Cannon and Robert Sts., and two 2-story det. bk, dwellings on the south east cor, of Robert St. and East Ave., total cost \$3,909; Peter Bayne, pr. 2-story bk. dwellings, Peter St., between Ray and Pearl Sts., cost \$2,700. - The promoters of the new theatre are negotiating for the purchase of the Bridgewood site at the south-east corner of Hughson and Jackson Sts. on which to erect the new building .- The franchise for the electric street railway will in all probability be awarded to the Hamilton Street Railway Company.

TORONTO, ONT. -Ald. George Macdonald, Ald. Leslie, Messrs, Wm. Poulton and Wm. Cawthra, all of Toronto, recently waited on the Minister of Public Works for Ontario concerning the construction of a milway from Wahnapatie station to the lake of the same name. - Tenders will be received until to-day (Saturday) for the erection of two brick houses on Argyle St. Plans at 45 Gloucester St. - A number of building sites have been purchased at Moor Park. -A special meeting of the Board of Works will be held next week to consider on what streets single street railway tracks will be constructed. - A large block of stores is shortly to be erected on the corner of Alexander and Yonge Sts., plans for which are now in course of preparation. - Messrs. R. Walker & Sons are making preparations to erect a building adjoining their present drygoods establishment on King St. - Mr. Moore, of Moore Park, is about to make extensive alterations to

his residence. - The City Council has decided to extend the Berkeley street sewer 60 feet into deep water, at a cost of \$405,-W. Gibson, 36 First Ave., wants tenders for building a small house at Balmy Beach. - Tenders are wanted for all trades, diggings and drains of one store to be erected on Ossington Ave. Plans at R. McConnell's, architect, 56 Shanley Ave., Dovercourt.-A petition has been presented to the Council for the construction of a street car track on Arthur St - The Executive Committee of the City Council has decided to advertise for new tenders for the furnishing of a chemical engine. -At a recent meet ing of the board of management of the Homopathic Hospital, it was decided to take steps shortly towards providing funds for the purchase of a site and the erection of a new building .- The following building permits have been granted: Thos. Stringer, 78 Terrolley st., three att. 2storey and attic bk. dwellings, 117 Howland ave., cost \$9,000. P Jamieson, new front to store, cor. Queen and Yonge sts., cost \$5,000. Mrs. E I'. Stiles, det 2-storey bk. and stone dwelling.

MONTREAL, QUE.-The following is a list of streets to be paved during the present year with the estimated cost: Asphalt-Sherbrooke, from Amherst to Unit n Ave., estimated cost \$102,000. Ontario, St. Lawrence to Bleury, \$31,700, Papineau to Amherst, \$55,500; Dorchester, Campeau to St. Denis, \$18,700; in front of General Hospital \$6,050, St. Peter, Common to Notre Dame, \$21,000 Custom House Sq.,\$5,596; Victoria square, \$33,500; Vandrient St., \$2,540. Fortification lane, \$27,500, Champ de Mars street, \$7,000 , Donegani street, \$3,300 ; Osborne, \$24,ooo . Union Ave., St. Catherine to Sherbrooke. \$25,488; Dorchester street, Beaver Hall square to Peel street, \$43,980; Fort street to limits, west, \$24,000; Notre Dame, McGill street to Chaboillez square, \$30,000. Chaboillez square, \$20,000. Granite or wood-St. Hubert street, from Craig to Ontario. \$56,360 : St. 1-awrence, St. Catherine to Sherbrooke, \$44,000; Jacques Cartier square (all granite) \$24.000; Commissioners street (all granite), Custom House square to St. Peter street, \$44,950; McCord (all granite), William to Wellington, \$42,750; St. Leon, McCord to Wellington Bridge, \$11,500; St. Catherine, St. Matthew street to city limits (wood blocks), \$43,000; Wellington street (granite), St. Etienne to Bourgeois street, \$68,550; St. Etienne, Wellington to Mill street (granite), \$33,050, Albert street (granite), Chaboiller square to Mountain street, \$47,500. The road committee will call for tenders for the proposed work in a couple of weeks,-Mr. Eric Mann, architect, is preparing plans for the re-building of Evins' block, corner Craig and Victoria square. - Mr. Presontaine, arch tect, is preparing plans for a Prebytery at St. julie de Verchire.—Mr. W. McLea Walbank, architect, is calling for tenders for the crection of a dwelling on Pine Ave. for Mr. Reinhardt.-Mr. W. Livermore, architect, is preparing plans for three cut stone tenement houses at Cote St. Antoine,-Mr. Henry Archibald will build a fine residence on the corner of Prince Arthur and Durocher street,-Mr. Chas, Chausse, architect is calling for tenders for a residence for F. L. Beique.

### FIRES.

A disastrous fire occurred at St. Stephen, N. B., on Friday, of last week, resulting in the following losses: J. D. Chipman, building, \$7,500, insurance \$5,000; Frank Todd, two buildings, \$3,000, insurance \$2,000, Westcott building, \$600, insurance \$500, C. E. Gilmore, furniture and undertaking, \$5,500, insurance \$3,500; Vroom Bros., furniture, \$1,000, covered by insurance. I odd Bros., hardware, \$10,000, insurance \$6,000; John Smith, stoves and tinware, \$2,000, insurance \$1,500 ° C. F. Todd & Sons, lumber, \$500, insured .- A three story brick store on Front St., Sarnia, Ont., owned by Miss Dora Kenny, and occupied by R. H. Thompson, was completely gutted by fire on Saturday last. Loss \$4,000 . insurance \$1,500.

### CONTRACTS AWARDED.

SOUTHAMPTON, ONT. - Mr. G. C. Smith has received the contract for a pier extension in the parbor.

PEMBROKE, ONT. + Mr. J. W. Munro has been

nwarded the contract for masony and Mr. W Beauty the carpenter work for the new hospital building.

MELEOURNE, ONT.—Mr. W. W. Gordon, of Glenco-, has the contract for furnishing the materal for a \$3,000 residence for Jas. Carruthers-

MONTREAL, QUE.—Messrs, Taylor & Gordon, architects, have awarded the contract for the erection of the Chapel of Lennoxville College to Lemaire & Howe, of Sherbrooke.

WINNIPEG, MAN,—The contract for the repairs to the Montreal Bank has been awarded to Messrs, Rourke & Cass, for \$13,000.—The contract has been let for a residence for Hon. Mr. Smart,

HAMILTON, ONT.—At the last meeting of the Board of Works, the following tenders were accepted: Spikes, Charles Carpenter, \$2.35 per keg: pine planking and scantling, Robert Thomson & Co., \$12.10 per 1 000 feet: cedar and tamarac posts, D, L. Van Vlack, 40 cents per yard for cedar and 41 cents for tamarack.

TORONTO, ONT, — The Gutta Percha and Rubber Co. has been given the contract to supply 600 feet of hose at 90 cents per foot.—The contract to supply the equipment for the Toronto and Mimico Electric Railway has been awarded to the Reliance Electric Mfg. Co.—Mr. E. J. Lennox, architect, has awarded contracts for alterations to the Conservatory of Music, to cost \$5,000.

LONDON, ONT,—Ald. Garratt has the contract for the erection of a fine residence on Princess St. for Mr. J. R. Shuttleworth. It will be built with red pressed brick and Credit Valley stone facings, and will cost \$5.000.—The Waterworks Connenttee has awarded contracts for the annual supplies as fellows. Portland cement, John Mann & Co., \$3.20 per bairel; lumber, W. H. Winnett, \$13 per 1,000 ft.; lead pipe, Cowan & Co.; hardware, McLean & Co., brasswork, Essex & Co. Harding & Leathorn were awarded the contract for pipe laying.

### USEFUL HINTS.

A painter who knows the nature and composition of varnish would not think of thinning it with turpentine and expect it to present a good varnished surface; he would know that the introduction of raw turpentine to a varnish is destruction of the latter's good qualities, because the varnish maker, when manufacturing the tvarnish has added the requisite quantity of turpentine. Similarly with paints, the knowledge of a few facts concerning their composition will enable him to avoid many errors and mischievous blunders in the use of his materials.

Oxides of iron should never be used as components of lead or zinc paints, as they possess the worst features of all pigments having an iron base, and the result of combining them with the substances mentioned is that the mixture, some time subsequent to being applied to exposed surfaces, becomes mottled and streaked, making a most unsightly appearance. A pure oxide of lead has the requisite proportions for resisting atmospheric influences, and when its merits become more fully known its manufacture will be improved, and quality rather than quantity will be sought after.

Sewers, says the Sanitary News, are a necessity to the progress, prosperity and life of a city. A small city will not require many sewers, but it requires the ones it does need as much as it does anything else it cannot do without. A large city requires more and greater sewers, and great care should be given the building of sewers, in order that as the city grows these sewers need not be removed. Let them be made so that they can become a part of the large sewerage system that the city will in time need. It will be cheaper to supply the demand that is to be, with the exception of large sewers, when they are put in, than to go to work and tear them all out for the purpose of putting in new ones. This is for cities whose growth is not destined to be great, but whose growth is sufficient to need more sewers in the future.

### MUNIGIPAL DEPARTMENT.

### WOOD BLOCK ROADWAYS.

Though granite blocks make a very dutable, and asphalt a very smooth and pleasant roadway, yet for smaller towns woodblocks or bricks are more desirable, on account of their being cheaper at first.

Wooden block roads, of either tamarac, yellow pine or cedar, seem to have been in longer and more general use than brick.

Wood makes a noiseless pavement, which, when it is in good order, is smooth and pleasant to drive over. The great objections to it are that it does not last long in good condition, and that it absorbs a great part of the liquid refuse on it, which ferments or decomposes and gives rise to very unhealthy and disagreeable exhalations, during hot weather especially.

The transverse section of a wooden road should not be too flat, so as to enable it to shed the water from it quickly and effectually. In London, England, the wooden pavements put down some years ago had a transverse slope of one (1) inch per yard; one (1) inch in four (4) feet is probably sufficient in almost any place.

The best foundation is concrete as above described, but a cheaper foundation can be made of gravel well watered and rolled; a layer of sand well rolled and covered with two (2) inch plank, and another layer of sand, on which the blocks are placed, also makes a good foundation if the roadbed be well drained.

Of the various kinds of wood used, pitch pine wears the best. In London, after four and a half (4½) years' use, the wear on its surface was almost imperceptible; its cost, however, is too great to admit of its use in a general way. Elm and oak will not stand the exposure to the weather, and creesoting the blocks does not seem to be economical, as the advantages obtained from its use are more than counterbalanced by its cost.

Tamarac, yellow pine and ceda; seem to last the best. The first two are used in the shape of blocks about three (3) inches the snape of blocks about three (3) inches wide, by nine (9) inches long, and six (6) inches deep, though probably five (5) inches is deep enough, since when the blocks get worn down to a depth of about three (3) inches the roadway must be re-

The blocks should be laid with the fibres upright and with joint spaces about three-eights (3%) of an inch wide; these spaces are filled in with sand, cement grout or pitch, the last of which would seem to be the best, as it keeps the joints water tight. The surface should be covered with fine gritty gravel or coarse sand. Yellow pine or tamaracjwill last from six (6) to ten (10) years in fair condition if defective blocks are promptly removed; seven (7) years, however, is the most that should be counted on.

When cedar blocks are used they should be stripped of their bark and sapwood, which causes the blocks to wear round on which cluses the blocks to wear round on the top like cobble stones. Cedar is al-ways used in the shape of full sections of the tree, and is never squared, as it would then split too readily. The smaller blocks should not be less than four (4) inches in liameter, nor more than nine (9) inches, then stripped of the bark and supwood, he smaller blocks should be laid alterhately with the larger, so as to fill the paces better. The interstices between he blocks are filled in the same manner is the spaces between square blocks; ravel or sand is sammed in with iron rods, and may be covered with a state of the same and the same and the same and the same are same as the same and the same are same as the same are same are same as the same are same as the same are same are same as the same are same as the same are same are same as the same a nd may be covered with pitch, and the hole surface covered with five gravel or parse sand. Blocks, when laid on sand, hould be well rammed with a maul at ast seventy (70) pounds in weight. Blocks which show signs of decay or

From Prire Essay on " stoad making and Mainten-ce" by Henry Irwin, B. ..., G. F., Montreal, and pub-bed by University of Pennsylvania.

uneven wear should be immediately te-moved, and the whole surface should be kept free from dirt. Coarse sand should be occasionally spread on it, and it should also be well served in december 1997. also be well watered in dry weather.

#### BRICK PAVEMENTS.

Vitrified brick makes a smooth pave-ment having a uniform surface at all sea sons of the year, it is not soft in summer like asphalt, is not yielding like wood when decaying, and offers a surer footbold for horses whether the loads which they draw be light or heavy.

Vitrified brick for roadways, when made of the proper material, is an artifical granite, it will resist a crushing strain equal to or exceeding granite, and by not becoming slippery under traffic, its wearing life is greater than granite, for under heavy traffic granite becomes slippery after a few years of use, but virtified brick does not become slippery at any period, hence the actual economic usefulness of the brick paving roadway is longer than that of a granite or other pavement.

# TO BUILDERS.

FOR SALE-one of the best building sites in Parkdale, situated on the north-east corner of Ronces alles and Harvard Avenues, close to Queen Street Size of lot, 32,5 x 105 ft., already fenced, in brick limits. Parkdale property is in demand for residential purposes, and this lot is well situated. Terms easy to first-class men. Apply to

FRANK ADDISON, Monetary Times Office, 72 Church St.

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### RAILWAY AND HIGHWAY BRIDGES

Viaducts, Piers, Roofs, Turntables and Girders in Steel and Iron.

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CAPACITY: 2,000 TONS PER ANNUM.

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32 ADELAIDE STREET EAST. TORON TO.

R. E. H. BUGKNER, 32 Adelaide St. East,

PATENT CAST IRON GULLIES, Vitrified Clay Sewers - Dust Bins - Sewer Pipe Cements - Steam Road Rollers - Stone Breakers - Street Scrapers Horse Brushes, etc.

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Municipalities usuing debentures, no matter for what urpose, will find a ready purchaser by applying to STIMSON, 9 Toronto Street, Toronto N.15 Money to loan at lowest rates on first mortgage.

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### CAST IRON STREET GULLEY.

Over some Gulleys are now in use in the following owns. Montreal, Toronto, Ottawa, Quebec, St. Cuneto etc. St. Henti, Peterboro, Owen Sound, Samia, Jose St. Antonie. A saving of \$2200 each gulley over the brick gulleys.



### LEWIS SKAIFE.

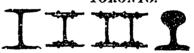
New York Life Building, - MONTREAL AGENT.

## COWER & CO.

204 St. James Street. MONTREAL.

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33 Richmond St. West, TORONTO.



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ROADWAYS,

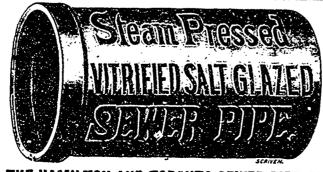
### SIDEWALKS.

Factories, Cellars, Stable and Coach-house floors.

On concrete base or on wooden flooring, ALSO ROOFS. Estimates furnished.

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Double Strength Railway Cul vert Pipes, Inverts, Vents,

AND ALL KINDS OF FIRE CLAY GOODS.

### Prices of Building Materials.

LUMBER.

CAR OR CARGO LOTS Toronto. Montreal.

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Red oak 30 00
White 35 00
White 18 05 00
Hasswood, No. 1 and 2 18 00
Cherry, No. 1 and 2 70 00
White ash, No. 1 and 2 18 00
United ash, No. 1 and 2 18 00
Dressing stocks. 16 00
Picks, American inspection
Three uppers, Am. Inspection

Common Walling..... Good Facing.... Sewer... BRICK-P M 8 50 Pressed Brick, Per M :

Plain brick, f. o. b. at Milton
" and quality ...
" ard
Hard Building
Moulded and Ornamental, per 18 W 14 M 10 M 8 W

Roof Tiles...
Diamond locking tile..... First quality, f.o.5. at Camp-

bellville. and quality, f.o.b.

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Buty to be added to these prices. Quebec and Vermont rough granite for building purposes, perc.ft. f.o.b. quarry 570 or namental work, cu. ft. Granite paving blocks, 8 in. to 12 in. x 6 in. x 4 ½ in., per M Granite cuthing stone, 6 in.x 20 in., per lineal foot 20 in. x 6 in. x 4 ½ in., per M Granite cuthing stone, 6 in.x 20 in., per lineal foot 20 in. x 6 in. x 20 in., per lineal foot 20 in. x 6 in. x 20 in., per lineal foot 20 in. x 6 in. x 20 in., per lineal foot 20 in. x 6 in. x 20 in., per lineal foot 20 in. x 6 in. x 20 in., per lineal foot 20 in. x 6 in. x 20 in., per lineal foot 20 in. x 6 in. x 20 in., per lineal foot 20 in. x 6 in. x 20 in., per lineal foot 20 in. x 20 in. x 20 in., per lineal foot 20 in. x 20 in.		ad to 5d cold cut, not polished	Canadian Office & School Furniture Co		Plumbing Supplies Booth & Son
Duty to be added to these prices.  Quebec and Vermont rough granite for building purpoes, perceft f.o.b. quarry 37½ to.  For on amental work, cu. ft.  Granite paving blocks, 8 in. to 12 in., xe in. x 4½ in., per M  Granite cubing stone, 6 in.x 25 in., per lineal foot  ROOPING.  Eastlake steel shingles (gall-vanited).  Eastlake steel shingles (pait-vanited).  Eastlake steel shingles (pait-vanited).  Eastlake steel shingles (pait-vanited).  Improved Broad Rib Roof-ing, (calvanized).  Soo 575  Improved Broad Rib Roof-ing (painted).  Manitoba steel siding (painted).  Manitoba steel siding (painted).  Tower or Mansard shingles, (galvanized).  Fower or Mansard shingles, (galvanized).  Tower or Mansard shingles, (painted).  Wetallic Terra Cotta Tiles  Price of Copper shingles according to weight, and "Hayes" Patent Metallic Lathing according to quantity.  Corrugated Iron, galvanized, 22, 24, and 25 W. G., per lb.  Corrugated Iron, galvanized, 28 W. G  SW. G  SW. G  Broad Rib Roofing, painted  Westlake shingles, steel, galvanized and shingles, galvanized and shingles, steel, galvanized and shingl		or bued, per 1 olbs . 50 50 3d to sideold cut not po ished	Office Specialty Co	ix	Garth & Co
Buty to be added to these prices.  Quebec and Vermont rough granite for building purposes, perc. (f. fo.b. quarry poses, perc. (f. fo.f. quarry poses, perc. fo.f. quarry poses, perc. (f. fo.f. quarry poses, perc. fo.f. quarry poses, perc. (f. fo.f. quarry poses, perc. fo.f. q		or blued, per 100 lbs 90 90 90	Bremner, Alexander	IV	St. Johns Stone Chinaware Co
prices. Quebec and Vermont rough granite for building pur- pose, perc. (f. lo.b., quarry For on namental work, cu. (f. Granite paving blocks, fin. to 12 in., xe in. v 4/2 in., per M Granite cubing stone, 6 in. x 22 in., per lineal foot  ROOPFING.  Fastlake steel shingles (gal- vanited)  Eastlake steel shingles (gal- vanited)  Eastlake steel shingles (paint- ed).  Improved liroad Rib Roof- ing (galvanized)  Improved liroad Rib Roof- ing (painted)  North Western steel siding (painted).  Manitoba steel siding (paint- ed).  Tower or Mansard shingles, (galvanized)  Tower or Mansard shingles, (painted).  Metallic Terra Cotta Tiles  Price of Copper shingles ac- cording to weight, and  "Hayes" Patent Metallic  Lathing according to quan- tity.  Corrugated Iron, galvanized, 23, 24, and 25 W. G., p.r lb.  Corrugated Iron, galvanized, 28 W. G  Corrugated Iron, galvanized, 28 W. G  Some spanel,  Broad Rib Roofing, galvan- ited.  Some spanel,  Sundard shingles, steel, painted.  Westlake shingles, steel, painted.  Some spatent, galvanized  Sandard shingles, steel, painted.  Some spatent, galvanized  Sandard shingles, steel, spanel, spainted  Northwestern steel siding, patent, equare.  Sandard shingles, "Walter's patent, galvanized  1 25  Sandard shingles, "Cor  mentallic Finish Brick, per  guare  Sandard shingles, "Walter's patent, galvanized  1 25  Sandard shingles, "Walter's patent, galvanized  1 25  Sandard shingles, "Walter's patent, galvanized  1 25  Sandard shingles, "Walter's patent, galvanized  2 3 50  Westlake Shingles  1 26  Sandard shingles  1 26  Sandard shingles  1 26  Sandard shingles  1 26  Sandard shingles  1 26  Sanda		3d, per 1 o lbs 1 () 1 (0) 2d, " 20) 200	Hansen, Harald M	xiv	Roofing Materials Merchan & Co
granite for building purposes, perc.ft. f.o.b. quarry poses, perc.ft. f.o.b. quarry For on namental work, cu. ft. Granite paring blocks, fin. to 12 in., xb in. va fs in., per M Granite cubling stone, 6 in. x 23 in., per lineal foot		CASING AND BOX PLOORING, SHOOK AND TORACCO BOX	Davidson & Kelly. Dick, James, sr.	II vi	Metallic Roofing Co
Granite paving blocks, 8 in, to 12 in, x 6 in, x 4½ in, per M Granite cuthing stone, 6 in, x 20 in, per lineal foot  **ROOPING**  **Per Square**  **Eastlake steel shingles (galavanized)  **Eastlake steel shingles (galavanized)  **Improved Itroad Rib Roof ing (painted)  **On North Western steel siding (painted)  **On North Western steel siding (painted)  **On Healtic Finished Itrick  **One or Mansard shingles, (galavanized)  **Tower or Mansard shingle		red to rod, per too lbs 50 to	Hood & Co., C	ii II	Saultary Appliances
tain, xe in, xe in, per M Granite cubling stone, 6 in.x Jo in., per lineal foot Per Square.  Per Square.  Per Square.  25 575  Eastlake steel shingles (gal.  vanired)  Tomproved liroad Rib Roof- ing (galvanized) Jo oo 575  Improved liroad Rib Roof- ing (gainted) Jo of 575  Improved liroad Rib Roof- ing (painted) Jo of 575  Improved liroad Rib Roof- ing (painted) Jo of 575  Improved liroad Rib Roof- ing (painted) Jo of 575  Improved liroad Rib Roof- ing (painted) Jo of 575  Improved liroad Rib Roof- ing (painted) Jo of 575  Improved liroad Rib Roof- ing (painted) Jo of 575  Improved liroad Rib Roof- ing (painted) Jo of 575  Tower or Mansard shingles, (galvanized) Jo of 575  Tower or Mansard shingles, (painted) Jo of 575  Improved liroad Rib Roof- ing (alvanized) Jo of 575  Jo		10d, 60 00 8d and 9d, 11 11 12 12 12 12 12 12 12 12 12 12 12	Hancock, Thomas	11	Booth & Son Sanuas Mfg. Co
Easilake steel shingles (galivanized)  Easilake steel shingles (galivanized)  Easilake steel shingles (galivanized)  Easilake steel shingles (galivanized)  Improved Broad Rib Roofing (gainted)  North Western steel siding (painted)  Manitola steel siding (painted)  Manitola steel siding (painted)  Metallic Friished Brick  Tower or Mansard shingles, (galvanized)  Tower or Mansard shingles, (galvanized)  Tower or Mansard shingles, (galvanized)  Tower or Mansard shingles, (painted)  Metallic Ierra Cotta Tiles  Price of Copper shingles according to weight, and  "Hayes" Patent Metallic  Lathing according to quantity,  Corrugated Iron, galvanized, 22, 24, and 25 W. G., per lb.  Corrugated Iron, galvanized, 28 W. G.  Corrugated Iron, painted, 26  W. U., per square.  Soo  Broad Rib Roofing, galvanized, 28 W. G.  Broad Rib Roofing, painted  Westlake shingles, steel, painted  Sandard shingles, "Walter's patent, galvanized  """  Sandard shingles, "Calivativa shingles  Sandard shingles, "Sandard shingles," ""  Sandard shingles, "Sandard shingles," ""  Sandard shingles, ""  Sandard		4d to 5d, """,, 1 is 1 to 3d, """,, 1 so 1 50	Murison & Burge	Vi II	Ives & Co., H. R St. Johns Stone Chinaware Co
Eastlake steel shingles (galvanized)  Eastlake steel shingles (galvanized)  Eastlake steel shingles (painted)  (mproved Broad Rib Roofing (galvanized)  Improved Broad Rib Roofing (painted)  Morth Western steel siding (painted)  (painted)  Metallic Finished Brok  (galvanized)  Tower or Mansard shingles, (galvanized)  Tower or Mansard shingles, (galvanized)  Frice of Copper shingles according to weight, and  "Hayes" Patent Metallic  Lathing according to quantuty.  38 W.G.  Corrugated Iron, galvanized, 22, 24, and 25 W.G., per bl.  Corrugated Iron, painted, 28  W.G., per square.  Corrugated Iron, painted, 28  W.G., per square.  Stroad Rib Roofing, painted  Westlake shingles, steel, painted.  Broad Rib Roofing, painted  Westlake shingles, steel, galvanized.  painted.  Standard shingles, "Walter's patent," galvanized.  Standard shingles, "Walter's patent," palvanized.  Standard shingles, "Stante," and standard shingles, "Yalter's patent," palvanized.  Standard shingles, "Stante," and standard shingles, "Standard shingles, "Too on the standard shingles, "Too on the standard shingles, "Yalter's patent," palvanized.  Standard shingles, "Yalter's patent," palvanized.  Standard shingles, "Standard, "Too on the standard shingles, "Too on the standard shingles, "Yalter's p		PINISHING NAILS.	Thomas & Howelt	II vi	Ruofers
Easilake steel shingles (galivanized) Easilake steel shingles (painted) Improved Itroad Rib Roofing (painted) Improved Itroad Rib Roofing (painted) Improved Itroad Rib Roofing (painted) Month Western steel siding (painted) Manitoba steel siding (painted) Metallic Frinished Itrot. Tower or Mansard shingles, (calvanized). Tower or Mansard shingles, (painted). Tower or Mansard shingles, (painted). Metallic Frinished Itrot. Tower or Mansard shingles, (painted). Metallic Terra Cotta Tiles Price of Copper shingles according to weight, and "Hayes" Patent Metallic Lathing according to quantity. Corrugated Iron, galvanized, 22, 24, and 26 W. G., par lb. Corrugated Iron, painted, 26 W. G., per square. Corrugated Iron, painted, 28 W. G. Broad Rib Roofing, painted Westlake shingles, steel, painted. Standard shingles, "Walter's patent," galvanized. Standard shingles, "Galike," galvanized. Standard shingles, "		21024 " " " 115 115	Cut Stone Contractors.	-	Duthie & Sons, G
cd)		12 to 14	Adamson, Jos	11	Metallic Roofing Co.
Improved Iroad Rib Roofing (painted)  North Western steel siding (painted)  Manitoba steel siding (painted)  Metallic Finished Ilrick. 3 25 3 50  Metallic Finish Ilrick. 3 25 3 50  Metallic Finish Ilrick. 3 25 3 50  Metallic Finish Ilrick. 3 3 50		SLATING NAILS	Hibbard, H. & T. Isaac Brothers.	11 11	Hutson, W. D. Rennie & Son, R
ing (painted)		5d, per 100 lbs	Oakley & Holmes	ii	Reggin, J Stewart, W. T.
(painted).  Manitoba steel siding (painted).  Manitoba steel siding (painted).  Metallic Friished Brick		3d, " " ***********	Consulting Engineer. Burry, A. B	11	Toronto Roofing Co
Metallic Finished Brick		i inch, per 10 lbs 150 150	Derrick Builders.		Sewer Pipe
Tower or Mansard shingles, (calvanized).  Tower or Mansard shingles, (painted).  Metallic Terra Cotta Tiles Price of Copper shingles ac- cording to weight, and "Hayes" Patent Metallic Lathing according to quan- tity.  Corrugated Iron, galvanized, 12, 24, and 25 W. G., p.r lb.  Corrugated Iron, painted, 18 W. G.  Corrugated Iron, painted, 26  W. G., per square		7 <sub>A</sub> # 4 # 1	Roste, Geo.	11	Adamson, Jos. Bremner, Alexander
Tower or Mansard shingles, (painted).  Metallic Terra Cotta Tiles  Price of Copper shingles according to weight, and  "Hayes" Patent Metallic Lathing according to quantity.  Lathing according to quantity.  22, 24, and 25 W. G., p.r lb.  Corrugated Iron, galvanized, 28 W. G. per square		crisch nales  a inch, per 10 lbs. 85 85	Morrison & Co., T. A	ix	Hamilton and Toronto Sewer Pipe Co McNally & Co., W
rrice of Copper stingles according to weight, and "Hayes" Patent Metallic Lathing according to quantity. Corrugated Iron, galvanized, 32, 24, and 25 W. G., per lb. Corrugated Iron, galvanized, 28 W. G		2% and 2% " " 100 100 2 and 2% " " 115 115	Dumb Walters		Maguire, William
cording to weight, and "Hayes" Patent Metallic Lathing according to quantity. Corrugated Iron, galvanized, 23, 24, and 25 W. G., p.r lb. Corrugated Iron, galvanized, 28 W. G		11/4 and 11/4 " " 135 135	King & Son, Warden	XIV	McRae & Co. Milton Pressed Brick & Sewer Pipe Co.
Lathing according to quantity.  Corrugated Iron, galvanized, 22, 24, and 26 W. G., per lb.  Corrugated Iron, painted, 28  W. G., per square		MARP AND PLAT PRESSED NAILS	Royal Electric Co	I	The Ontario Terra Cotta Pressed Brick &
Corrugated Iron, galvanized, 38 W.G		3 inch, per 100 lbs. 1 35 1 35 2 4 and 2 8 " " 1 50 1 50	Toronto Electrical Works	iv	Sewer Pipe Co
W. G., per square		2 and 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	lves & Co., H. R. Leuch & Turnbull		Wright & Sons, C. B
W. G., per square		1	Engravers,	1	Sliding Blinds Clatworthy, Geo
W. G.   3 50		Structural Iron: Steel beams, per 100 lbs 275 250	Canadian Photo-Eng Bureau	xiv	Stained and Decorative Glass
ired		" channels, " 285 265	Fire Brick and Clay. Adamson, Jos	ī	Castle & Son. Deminion Stanned Glass Co
Westlake shingles, steel, galvanized		" tees, " 280 215 " plates, " 255 235	Brenner, Alexander	IV iii	Elliott & Son
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Northwestern steel siding, patented		IN THE CANADIAN ARCHITECT AND BUILDER.	Douglas & Pluckett	11 11	McCausland & Son. Spence & Son. J. C.
Northwestern steel siding, patented			Tucker & Dillon	ii	Victoria Stamen Grass Co
Suare   3 25     Metallic Finish Clapboard   3 50     SLATE       Roofing (\$\psi\$ square)       red		Ontario Directory III	Grates and Tiles. Holbrook & Mollington	xii	Stenographers Holland Bros. & Young
SLATE.  Roofing (\$\psi\$ square).  " red		Quebec Directory vi	Rice Lewis & Son	îŸ	Terra Cotta
Roofing (# 1944ar).  " red 18 00 1/ " purple 9 00 8 " unlading green 9 50 6 " unlading green 9 50 6 " unlading green 9 50 6 " black 775 7 " or randental Black Slate Roof. ing 25 00  PAINTS. (In eil, # 18.)  Vhite lead, can, 1 653 650 6 00 6 " zinc, Can, 1 653 655 650 650 650 650 650 650 650 650 650		Architectural Sculptors and Carrers, Carnovsky, B. H	Heating.		Morris, E. D. Toronto Pressed Brick & Terra Cotta Co.
" purple 9 00 8 " unlading green 9 50 6 " in black 7 75 7 Ferra Cotta Tile, per 30 25 00 Prammental Black Slate Roof. ing 825  PAINTS. (In oil, ¥ lb.)  White lead, Can., per 100 lbs. 6 23 6 50 6 00 6 " zinc, Can., " 6 33 7 50 7 50 8 64 lead, Eng 55 65 5 6 00 6 " venetian, per 100 lbs 1 60 1 75 2 60 1	0.)	Hicks, W. Stivens 11	Garth & Co Gurney Co., E. & C	vii	The Ontario Terra Cotta, Brick & Sewer Pipe Co.
	01 00	Turner, Frederic 11	Howard Furnace Co	XII IV	Terra Cotta Fireproofing
ing	50	Mowbray, Thos	King & Son, Warden McClary Mfg. Co	xiv xii	Morris, E. D. Rathbun Co.
Vhite lead, Can., per 300 lbs. 6 25 6 50 6 00 6 " zinc, Can., 11 1 6 37 7 50 7 50 8 ted lead, Eng		Architectural Iron Work.	Miller Bros, & Tonts Toronto Radiator Mfg Co	xii xi	Tower, Clocks and Bells
" venetian, per 100 lbs 160 - 174 - 260 - 1			Iron Fences.		Gillett & Johnston
" venetian, per 100 lbs 160 - 174 - 260 - 1	00	The Dominion Bridge Co	Ives & Co., H. R	IV	Wall Paper and Calling Decorations Ellion & Sor
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