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CANADIAN CONTRACT RECORD

A WEEKLY JOURNAL OF PUBLIC WORKS, TENDERS, ADVANCE INFORMATION AND MUNICIPAL PROGRESS

EVERY SATURDAY

Vol. 3. Toronto and Montreal, Canada, April 2, 1892. No. 8

THE CANADIAN CONTRACT RECORD,
A Weekly Journal of Public Works, Tenders, Advance Information and Municipal Progress.
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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 31, 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 we 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."

The publisher desires to ensure the regular and prompt delivery of this Journal 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 address.

TO CONTRACTORS.

Tenders will be received at the office of the undersigned until noon, SATURDAY, APRIL 9th, for Alterations and Additions to a house in Wellesley street.
 The lowest or any tender not necessarily accepted.
STRICKLAND & SYMONS, Architects,
 18 Toronto Street.

LOCAL IMPROVEMENT.

Tenders wanted by the undersigned for a SIDEWALK on Woodbine Avenue, Norway Side Road, in Township York. Specifications, &c. can be seen and sealed tenders received at my office from April 1st to 5 p.m. on Saturday, 16th April, 1892.
 Lowest or any tender not necessarily accepted. Specifications can be seen after 1st April at Room 28, Yonge Street Arcade.
PETER S. GIBSON, C.E. & P.L.S.,
 Township Engineer.
 Willowdale, Tp. York, Mar. 28, 1892.

TENDERS.

Scaled tenders, addressed to the Secretary Public School Board, Weston, will be received up to 12 o'clock noon on SATURDAY, 16TH APRIL, 1892, for the several trades, also for the whole works, required in the erection and completion of a

PUBLIC SCHOOL BUILDING AT WESTON.

Plans and specifications can be seen at Dr. Charlton's office, Weston. No tender necessarily accepted. Security will be required for the completion of the works.

JAS. A. ELLIS, Architect,
JOHN LINTON, Toronto Junction,
 Secretary P. S. B., Weston.

AGENCY

BUILDING MATERIALS
 — AND —
CONTRACTORS' SUPPLIES

We invite correspondence from a reliable firm, who have good connections amongst architects, and are open to undertake above.

TULLOCH & CO.,

85 GRACECHURCH ST., LONDON, ENGLAND.

A novel foundation was used in building a lighthouse at Gull shoal, on Pamlico Sound, North Carolina. The building was to be founded on screw piles and preliminary borings indicated firm material. When work began setting the piles, however, it was found that, although at first penetration was difficult, after 10 ft. depth was reached, there was little resistance to the turning of the screw. The soft layer appeared to extend deeper than the piles were intended to penetrate, and it was not thought prudent to rest the lighthouse on the piles without some additional means of support. It was therefore decided to surround each pile with a cast iron sleeve, 1 1/2 in. thick and 11 ft long, provided with a disk of the same material 5 ft in diameter, intended to bear on the hard upper stratum of the shoal. This scheme had been tested and proved economical and effective at another station in the same lighthouse district. The piles were screwed to a depth of 13 ft., and the sleeves were dropped over them after bolting the disks onto the lower end. The sleeves were secured to the piles by set screws. The lighthouse is a hexagonal wooden building, and is supported on seven piles.

CONTRACTS OPEN.

SCARBORO, ONT.—Mr Heron is about to erect a new residence at this place

REGINA, N. W. T.—The plans for the new C. P. R. station have been completed.

PILOT MOUND, MAN.—Messrs. Baird Bros. intend building a large store this spring.

BROOKVILLE, ONT. An agitation is on foot for the construction of a street railway

AGINGOURT, ONT.—A dwelling house is to be erected for Mr J. L. Patterson of this place.

VICTORIA, B. C.—The promoters of the Westminster Woolen Mills will erect a new mill here.

WATERLOO, ONT.—It is stated that a new bridge will be erected over the C. I. R. on Main street.

MOOSE JAW, N. W. T. Mr. W. W. Bole, druggist, intends erecting a solid brick store this season.

PORT HOPE, ONT.—The Council has decided to immediately erect a bridge over the harbor on Gage street.

WIARTON, ONT.—A joint stock company has been formed to establish a terra cotta and brick manufactory.

WESTON, ONT.—Tenders are being asked for the erection of a house on George street for Mr. R. L. Lemaire.

SEAFORTH, ONT.—A company represented by Mr. Beatty, have purchased a site for the erection of a large store.

NEWMARKET, ONT.—The Fire and Water Committee has been instructed to purchase 300 feet of linen hose.

BRANTFORD, ONT.—The sum of \$24,000 appears in the estimates of the Council for the erection of new school.

STOUFFVILLE, ONT.—The Methodists will erect a new church the coming summer. Rev. J. W. Stewart is the pastor.

POINT EDWARD, ONT.—The details are being arranged for the erection by the G. I. R. of a large elevator at this point.

ST. JOHN, N. B. Work on the new building for the Consolidated Electric Light Company will be commenced in a few days.

BETHEL ONT. Mr S. T. Barnes has been appointed secretary of a building committee for the erection of a new church.

PORT HOPE, ONT.—Capt. Ellison contemplates building a large steamer this summer, to ply between Cleveland and this port.

LONDON, ONT. The City Engineer will receive tenders until the 4th inst, for the erection of a dwelling for the caretaker of Queen's Park.

MANITOU, MAN.—Mr. C. H. Wheeler of Winnipeg, has prepared plans for a new Anglican church to be erected here for Rev. Mr. Hewitt.

WELLAND, ONT.—A petition from the ratepayers has been presented to the Council asking that the construction of the trunk sewer be proceeded with.

EDMONTON, N. W. T.—Mr. W. Maloney has purchased a site on the west side of Fraser avenue on which to erect an implement warehouse and building.

BERKELEY, ONT.—Mr. L. A. Hall, of this place, will accept tenders until Saturday, the 9th inst, for the building of a new Episcopal Church at Kingarf.

SHEDDENHAM, ONT.—The ratepayers have carried a by law to grant a bonus of \$5,000 to the Rathbun Company for a branch railway from Harrowsmith to this place

FORT WILLIAM, ONT.—The Hudson's Bay Co., intend erecting some ten or twelve cottages during the coming summer. A large addition to their store is also contemplated.

CHATHAM, ONT. John W. Dyer, Oungah, P. O., this county, will receive tenders until noon to-day, for the erection of a brick veneered school house, Sec. 11 Chatham township.

KINGSTON, ONT.—The new school of science will be erected on the site now occupied by the drill shed.—The Roman Catholics are contemplating the erection of a high school on Union street.

MALDEN, ONT.—The trustees of the Methodist Church have decided to call for tenders for a new building, plans for which have already been prepared. Larmie & Wigle will erect large tile kilns.

ARNSPRIORITY, ONT.—It is expected that a number of private residences will be erected here during the summer.—Mr. Wm. Farmer also proposes to put up a business building on John street

WALKERVILLE, ONT.—The council have decided to pave a number of streets and construct additional sewers during the coming summer. It is stated that a number of residences will also be built.

WINDSOR, ONT.—The council have adopted the plans and specifications of Mr. Rohms, architect, for a vault in the town hall and for the rearrangement of the offices, the work to be done by contract.

DESERONTO, ONT. The question of improved sewer and water works, increased fire protection and the erection of a market building, are being discussed.—Mr. George Clement will erect a business block and also some houses.

TRENTON, ONT.—The Board of Trade recommends the purchase of an electric lighting plant for lighting the streets of the town, and also that steps be taken to ascertain the cost of erecting a power house from which to distribute electrical power to consumers.

NESHITT, MAN. The Presbyterians are soliciting subscriptions towards the erection of a new church.—The Town Council are considering the erection of a new school building.—The Lake of the Woods Milling Company will, in all probability erect an elevator here.

PERTH, ONT.—Surveys are being made for the construction of a new line of the C. I. R. railway, crossing the south end of Sharbot Lake about a quarter of a mile south of the present line. The work will be proceeded with at once. The Roman Catholics will erect a presbytery to cost \$3,000.

INGERSOLL, ONT.—The Board of Trade have recommended that the town loan the sum of \$10,000 to the Evans Bros. Piano Co., to enable

the company to establish an organ factory in connection with its piano factory.—Mr. J. W. Wright, architect, will receive tenders until Wednesday, the 6th inst. for the erection of a brick house in the township of Dereham.

SARNIA, ONT.—Mr. H. W. Mills will receive tenders until 5th inst. for 6,000 oak ties, in small or large quantities, not less than 6 inch face and 6 inches thick, to be delivered here not later than the first of May.

GUELPH, ONT.—At a joint meeting of the City Council and Fat Stock Club Committee it was agreed to arrange an appointment with the Agricultural and Arts Association in Toronto to discuss the terms upon which a grant would be given in aid of the proposed buildings.—Mr. James H. Findlay, manager Guelph branch Bank of Montreal, will receive tenders until Wednesday, the 6th inst. for the masons', carpenters', plumbers', and painters' work required in the erection of an addition to the bank building.

VANCOUVER, B. C.—The Hudson's Bay Company intend to erect new buildings on their property on Granville street. Plans have been prepared by Mr. C. O. Wickenden, architect. The structure will be built of brick and stone, four stories high. The company also intend to erect a warehouse building on Water street at an early date.—A movement has been started towards the erection of an athletic club building. Plans have been prepared and subscriptions are being solicited.—The trustees of the First Presbyterian church have secured a site for their new building on the south-west corner of Gore avenue and Hastings street. The plans will be completed and contracts awarded in a few days.

NIAGARA FALLS, ONT.—A conference recently took place between the trustees of the high school and representatives of the Council of Stamford and this town, regarding the erection of a new high school building. No definite result was reached, but it is stated that if no satisfactory arrangement can be made the town of Clifton will undertake the erection of a high school.—The Board of Trustees have decided that the Niagara Falls and Suspension Bridge street railway Co., may lay double tracks and use electricity. The capital of the company will be increased by \$200,000.—The plans have been prepared for the proposed new Baptist church. The building will be frame, 25 x 50 with vestibule and tower.

MONTREAL, QUE.—On Wednesday last a deputation of citizens and those interested visited Ottawa for the purpose of urging upon the Dominion Government the necessity of constructing a deep water pier at Father Point. The surveys and plans for this work were made a couple of years ago.—The City Council have selected a site for an incinerator on the land between the dyke and the river, on a line with Chattron street, and have appointed a sub-committee to report on the sites for two others in the eastern and northern parts of the city.—The City Surveyor will receive tenders until Wednesday the 6th inst. for the construction of drains in different parts of the city.—A building permit has been granted to Frank W. Newman for a three-storey stone and brick dwelling on Crescent street to cost \$10,000.—The control of the stock of the Montreal Street Railway Company has passed into the hands of the Everett Syndicate of Toronto. The road will be converted to the electric system.

HAMILTON, ONT.—A local company is applying for a charter as the Ontario Box Company, with a capital of \$25,000.—Building permits have been granted as follows: W. H. Buscombe, one two storey brick dwelling on Inebury street, and one storey and a half brick dwelling on Tom st., cost \$1,800; Semens, Ward & Ewel, brick addition to their factory, cost \$1,000; William Magill, two two storey brick dwellings on Burlington street, north of Barton, cost \$3,000; Edward Eccleston, one two storey brick dwelling on Victoria avenue south, above the Northern and Northwestern Railway tracks, cost \$1,500; Wm. Turnbull, one two storey brick building on Ontario ave, cost \$2,000; Samuel McKelvey, one two-storey brick dwelling on Hess street between Bold and Duke streets, cost \$1,500; Arthur Hoyt, one two-storey brick store on York street, between Pearl and Ray streets, cost \$1,500; A. L. Burke, for two two-storey brick dwellings on Pearl st., bet. Morden and Napier sts., cost \$2,500.—A large 3-storey

building is to be erected on the corner of James and Main streets for Messrs. Martin & Counsell, and to cost in the neighborhood of \$45,000.—James Balfour, architect, will receive tenders until April 11th, for the erection of a power house for the Hamilton Street Railway Company on James st.

OTTAWA, ONT.—Wm. Smith, Deputy Minister of Marine, will receive tenders until the 11th inst. for the supply of paints, oils and other stores delivered at Montreal and Quebec.—E. F. E. Roy, Secretary Dept. of Public Works, will receive tenders until Thursday, the 14th inst. for the reconstruction of beach protection work at St. Peter's Bay, King's County. Plans to be seen at the office of Mr. F. D. MacEwan, Lot 40 railway station, and at the Department of Public Works, this city.—A petition has been presented to the Dominion Government from the corporation of Chatham, urging that a sum be placed in the supplementary estimates for dredging the channel at that place 11 feet deep and 61 feet wide and about one-half mile in length.—At a recent meeting of the Board of Works and the Roads and Bridges Committee of Carleton County, it was decided to instruct the Engineer to prepare plans and call for tenders for two separate bridges to replace the Cummings bridge.—The Dominion Supplementary estimates for 1892 contain a grant of \$6,000 to clear away the foundation of the burnt custom house at St. John, N. B., and provide temporary premises, and the sum of \$10,000 for the construction of a bridge at Fort McLeod.—A deputation from the vicinity of Peterboro' recently waited upon the Minister of Railways and Canals urging the immediate construction of the portion of the Trent valley canal between Peterboro' and Lakefield.—A deputation from West Huron recently asked the Minister of Public Works for aid in enlarging the Port Albert harbor.—The sum of \$3,200 a mile is asked for the construction of the Mount Forest, Markdale and Meaford Railway. The Minister of Public Works has promised to consider the matter.—The sum of \$5,000 appears in the supplementary estimates of the Government to make good damage by fire at the post office building.

TORONTO, ONT.—Mr. E. J. Lennox, architect, has prepared the plans for the new building to be erected for the Bank of Commerce on the corner of King street and East Market square. The building is to be a banking house and hotel combined, nine stories high, of modern Romanesque architecture, to be executed in the form of an iron skeleton incased in brick walls, the exterior to be of cut stone and pressed brick. The work of preparing the site will be commenced at once.—A scoria block pavement is to be constructed on a lane between Wellington and Melinda sts., at a cost of \$928.—The building on the south-west corner of King street and East Market square, now occupied by Mr. J. S. Copland as a grocery store, is to be thoroughly overhauled and refitted for a branch building for the Dominion Bank. Mr. Austin, president of the bank, is owner of the building.—The Property Committee at its last meeting decided to recommend an appropriation of \$2,000 for the construction of a wharf at Ward's Island.—W. J. C. Murray, 756 Queen street west, contemplates erecting a large building for entertainment purposes or an hotel, at the corner of Queen and Niagara streets.—Fourteen stores are to be erected on Queen street west, opposite Dovercourt road (Mr. Douglas' property).—A new store is to be erected on the site of 378 Queen street west.—Building permits have been granted as follows: J. Stewart & Son, 2-storey bk. warehouse, 45 Wellington st. w. cost \$2,000; Jos. H. Forester, pr. s. d. 2-storey and attic bk. dwellings, 159 and 161 St. Patrick st., cost \$6,000; Churchill & Hudson, det. 2-storey and attic bk. dwelling, e. side Springhurst ave., s. of King st., cost \$3,000; Geo. Kidd, 1-storey bk. store, 392 Ossington ave., cost \$1,000; A. W. Carmack, 4-storey bk. factory, n. side Temperance st., w. of Bay st., cost \$6,000; Trustees Knox Church, alterations to gallery and school room, cost \$1,600; Sir D. MacPherson, alterations to Impenal Chambers, Adelaide st. east, cost \$3,500; John Walsh, det. 2-storey b. f. dwelling, 39 St. Paul st., cost \$1,000.

FIRES.

The premises of the Upper Canada Furniture Company at Bownanville, Ont., were destroyed

by fire on Wednesday last. Loss, \$25,000. insurance, \$15,000.—Blackader's saw mills at Hectanooga, N. S., were burned on the 30th ultimo. Loss, \$35,000; partially insured.—A planing mill at 93 and 95 Baitlett avenue, Toronto, owned by Messrs. J. L. Hughes and J. S. Williams, was damaged by fire to the extent of \$3,000 on Tuesday last.—The Rossin House hotel stables at Vienna, Ont., were burned on the 28th ultimo. Loss, \$2,000; small insurance.—A disastrous fire occurred at Renfrew, Ont., on Saturday last, destroying Logan Bros' woolen mills, loss \$26,000, insurance, \$4,500. McNichol's wash and door factory, loss \$3,000; McKay & Guest's flour mill, loss \$35,000; insurance \$16,000.—The Turner House at Point Edward, Ont., owned by Mrs. Parrott, was burned on the 20th March.—D. W. Karn's large piano factory at Woodstock Ont., was completely gutted by fire on the 28th ultimo. Loss, \$30,000, insurance, \$21,000.—The residence of J. W. Mallory, near Athens, Ont., was burned on Tuesday last. Insurance, \$700.—Mr. Robert Mann's woolen mill at Peterboro', Ont., was totally destroyed by fire on Thursday last. Loss on machinery and stock, \$12,000. insurance, \$8,500. The building was owned by the Dekson Company, and was insured for \$4,500.—The residence of Mr. Thomas Wood, Manheim, Ont., was burned on the 27th inst. Loss \$2,000.

CONTRACTS AWARDED.

NIAGARA FALLS, ONT.—Mr. Jacob Lovell has been awarded the contract for the erection of a new separate school building.

ORILLIA, ONT.—The contract for the erection of the post-office building in Orillia has been awarded to Mr. J. R. Eaton. Mr. W. H. Croker, architect, will be resident overseer of the work.

NEW WESTMINSTER, B. C.—The contract for the erection of a new manse in connection with Westside Presbyterian Church has been awarded to Messrs. Purdy & Williams, at the price of \$1,550.

BROCKVILLE, ONT.—The contract for the erection of the factory buildings for the Brockville Carriage Company has been awarded to Messrs. Crain & Minx, of this town. The contract price is \$32,000.

HAMILTON, ONT.—Messrs. Ahearn & Sopher, of Ottawa, have been awarded the contract to build the new electric street railway, and Messrs. Goldie & McCulloch, of Galt, have been given the contract for three 250 horse power engines.

MONTREAL, QUE.—W. H. Hodson, architect, has awarded contracts as follows for alterations and additions to a store on Commissioners street: Cut stone, masonry and brick work, Thomas & Mailhot; carpenter and joiner, T. E. Mooney & Co.; roofer, G. W. Reed; plastering, Wm. Bremner; plumber, Wm. Lanklater; painter, Alfred Brunet.

GUELPH, ONT.—Contracts have been awarded as follows for the erection of the electric light station for the Guelph Gas and Electric Light Company: Masonry, Thomas Matthews; carpentering, George Stevens, painting, C. W. Reynolds; tinsmithing, George Howard. The cost of the building will be about \$5,500. The contract for the machinery has been awarded to Messrs. Goldie & McCulloch, of Galt, and will cost about \$7,000.

The use of coal tar for water-proofing masonry is recommended by a French technical journal. For surfaces exposed to the air it is advised to apply from one to three coats boiling hot. Its durability is increased by adding a small proportion of india rubber dissolved in benzine. If the color of the coating is objectionable it may be dusted with plaster of paris before drying. Where surfaces are to be covered with earth a single coating of tar made thick by blazing is preferable. A small quantity, two or three gallons, is brought to a boiling temperature and lit at the surface. It is also allowed to blaze and kept constantly stirred at the same time until the volume is considerably reduced and it becomes pasty on cooling. The product is spread as rapidly as possible with a large flat brush, which is dipped often to prevent cooling. A single coat applied in this manner adheres firmly to even the smoothest surface.

MUNICIPAL DEPARTMENT.

COVERED RESERVOIRS.

A communication in a recent number of the *Journal of Gas Lighting and Water Supply*, calls attention to the need of covering reservoirs containing ground water. The writer says that it does not matter how pure the water may be when pumped from the ground, if allowed to remain in the reservoir, vegetable and animal life quickly develop, and in summer time the growth spreads with extraordinary rapidity. This mossy excrescence is produced spontaneously by the action of the sun on pure water; and it makes its appearance early in the spring. The remedy for it, he states, can only be found in covering the reservoir, or building it to a sufficient depth, 20 to 30 feet, is his opinion.

After citing the reports of the Massachusetts State Board of Health in support of these statements, the writer claims that the inlet should be formed as an overflow at the top of the reservoir. This will result in an aeration of the water and will tend to keep the whole surface of the water of the reservoir in motion, thus cooling it and preventing the growth of algae. From a consideration of many reports from different places in England, he states that pure well water is plainly productive of both animal and vegetable life; and if the conditions of storage are favorable, the spontaneous growth of both is very rapid. This growth commences early in May and continues until August, when it readily leaves the sides and bottom of the reservoirs, decays, and rises to the surface, giving off an unpleasant odor in doing so. Constructing reservoirs of a depth varying from 20 to 30 feet he has found to be a partial remedy for this, and cleaning them out three or four times a year is necessary. The cost of covered reservoirs, holding two or three days' supply, he states to be about \$20 per 1,000 gallons capacity.

LEGAL DECISIONS AFFECTING MUNICIPALITIES

COUNTY OF HALTON V. G. T. R. CO.—Judgment on appeal by the defendants from the judgment of the Common Pleas Divisional Court, affirming the judgment of Robertson, J., adjudging to the plaintiffs the sum of \$65,000 and \$5,381.61 interest, on a bond dated 9th March, 1874, conditioned for the repayment of the sum named, (being the amount of a bonus granted by the plaintiff corporation to the Hamilton and Northwestern Railway Company), in case within the period of 21 years, the latter should cease to be an independent company, or in default of such repayment, for the payment of \$100,000. In 1888 an agreement was entered into by the Hamilton and Northwestern Railway Company with the defendants, by which the two companies were amalgamated as one and by which the plaintiffs claimed the former lost its independence within the meaning of the bond. The defendants appealed from the judgment of the court below, on the grounds, among others, that no damage accrued to the plaintiffs by reason of the agreement, and that therefore only nominal damages at the most should have been awarded, that the \$100,000 being by way of penalty could not be recovered, that the union of the two companies did not destroy the inde-

pendence of the Hamilton and North-western Railway Co., and that the plaintiffs by certain dealings with the latter company had waived their right to object to the amalgamation complained of. The court unanimously affirmed the judgment of the courts below and agreed with the reasons given. Appeal dismissed with costs.

PERSONAL.

The death is announced of Mr. D. G. Mackenzie, who for nearly nineteen years efficiently discharged the duties of Clerk of the County of Middlesex.

The disposal of city refuse is no more profitable in Edinburgh than in other large cities, notwithstanding the glib talk of some who find great profit—theoretically—in disposing of it to farmers. The Edinburgh Councils lately sent out 1,521 circulars to farmers in their vicinity, inviting tenders for about 51,900 tons of refuse, and manure, or about one-half of the yearly product. Only 47 tenders came in, and these under such conditions that practically required the city to pay all expense of transport, and even, in some cases, to pay the farmers so much a ton for accepting it.—*Engineering News.*

A machine for breaking up frozen ground, rotten ledges, and similar material frequently encountered in excavating for water-pipes and sewers, has been patented by the executor of the late Richard Fobes, Superintendent of Sewers at Worcester, Mass. The machine consists of an upright frame about 30 feet high, mounted on a car with a hoisting engine and boiler. A pair of guides is attached to the upright frame, and swing back and forth in front of the end of the car. In these guides a heavy bar, carrying a cutter bit at the end, is worked up and down as in an artesian well-drilling apparatus.

It is evident that in every community where a large part of the water consumers is of the tenant class, and especially such as are found in tenement houses, says the *Engineering Record*, there is no way of enforcing payment for water but to withhold the supply. Yet, since this penalty creates a condition of affairs that becomes a nuisance, which must be abated by the sanitary authorities, it would seem that the only practicable way to deal with this matter is to make the owner of the property in every case responsible for the payment of the water rates for all the water consumed on the premises. This is, in fact, the manner in which these rates are laid in New York City, where all charges for water are deemed to be included in the regular rents, constitute a lien upon the property, and, if unpaid, are returned as arrears and are collected with interest by the same process as the general taxes.

Details of a steel water main 5 feet in diameter are given in *Le Genie Civil*. The total length of this conduit is 8,445 feet, and it will be used in bringing water from La Vigne and Verneuil to Paris. It is constructed of mild rolled steel. The thickness is calculated so that the strain in no place exceeds 3.8 tons per square inch, and the actual thickness has been increased beyond this amount to allow for oxidation, the actual maximum thickness being 0.235 of an inch. The rivets are of mild steel, and the tubes are lap-jointed. The supports are of cast iron and spaced sufficiently close to prevent sag. The elbows are of cast iron and the cramps of wrought iron. Five manholes per mile

are provided, and there will be two discharge tubes closed with sluice valves at the lowest point of the conduits.

A novel method of thawing frozen earth for making street excavations was described by H. H. Kelley, Superintendent of the Waltham, Mass., Gas Works, in a paper read before the New England Association of Gas Engineers. Stone lime is spread several inches deep over the place where it is desired to excavate, and is thoroughly wetted and covered with straw. A piece of canvas or tarpaulin is spread over the heap, and it is left for 12 hours more or less. In two cases in which Mr. Kelley has tried this method recently, frost 18 in. to 26 ins. was removed from the ground. In ordinary cases the expense of the lime would be too great to permit this plan to be adopted, but gas companies can use the lime afterward in their purifiers.

DEBENTURES WANTED.

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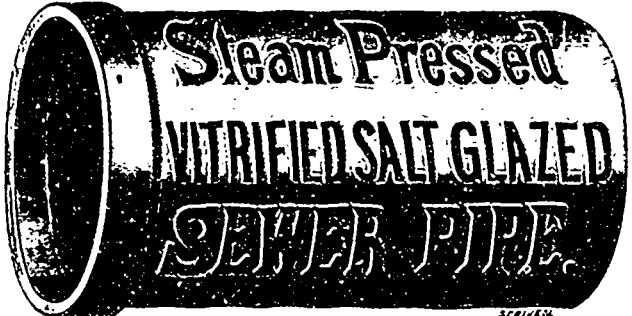


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1 x 10 and 12 dressing	14.00	16.00
1 x 10 and 12 common.	12.00	13.00
1 x 10 and 12 spruce culls	10.00	11.00
1 x 10 and 12 maple culls	9.00	9.00
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1 inch dressing and better.	18.00	20.00
1 inch siding, mill run	14.00	16.00
1 inch siding, common.	11.00	12.00
1 inch siding, ship culls	10.00	11.00
1 inch siding, mill culls	8.00	9.00
Cull sawing	8.00	9.00
1/2 and thicker cutting up plank	22.00	25.00
1 inch strips, 4 in to 8 in mill run	14.00	15.00
1 inch strips, common	11.00	12.00
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1/2 inch flooring	14.00	16.00
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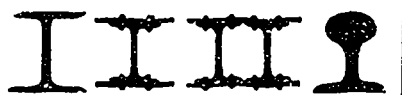
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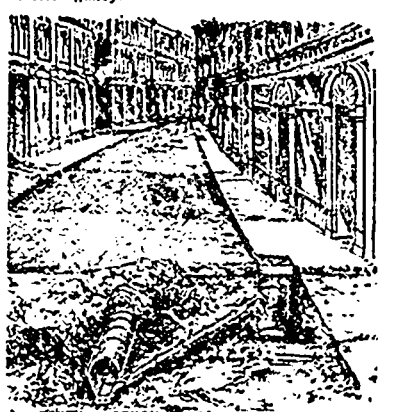


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" " " 32 ft.	22.00	23.00
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1/2 " " undressed, F.M.	18.00	20.00	18.00	20.00
1/2 " " dressed	18.00	20.00	18.00	20.00
1/2 " " undressed	12.00	14.00	12.00	14.00
cedar sheathing, dressed	22.00	25.00	22.00	25.00
Clapboarding, dressed	12.00	12.00	12.00	12.00
XXX sawn shingles, per M	2.65	2.75	2.65	2.75
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Cedar	2.50	2.50	2.50	2.50
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Table with columns for Toronto and Montreal prices for Cement, Lime, Hardware, and Structural Iron.

Table with columns for Toronto and Montreal prices for Bricks, Builders' Supplies, Boiler Covering, Building Stone Dealers, Builders' Hardware, Cements, Church and School Furniture, Contractors and Builders, Contractors' Plant and Machinery, Cut Stone Contractors, Chimney Topping, Consulting Engineer, Derricks, Door Springs, Drain Pipe, Structural Iron Work, Dumb Waiters, Electric Lighting, Elevators, Engravers, Fire Bricks and Clay, Galvanized Iron Works, Grates and Tiles.

Table with columns for Toronto and Montreal prices for Heating, Iron Fences, Iron Pipe, Laundry Tubs, Lime and Stone, Legal, Mantels and Overmantels, Metallic Lath, Mortar Colors and Shingle Stains, Ornamental Plasterers, Paints, Varnishes, &c., Painters, Parings, Planters, Plate Glass, Plastering Fibre, Plumbers, Plumbing Supplies, Roofing Materials, Sanitary Appliances, Roofers, Stained and Decorative Glass, Wall Paper and Ceiling Decorations, Wall Plaster, and Well Ties.

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