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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, Purchasers of Municipal Debentures and leading Contractors in all lines throughout Canada.

VOL. 6. AUGUST 22, 1895 No. 29.

THE CANADIAN CONTRACT RECORD,

PUBLISHED EVERY THURSDAY

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

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TENDERS

Enclosed in a sealed envelope, addressed to the undersigned and marked "Tender for Walk" will be received by the Corporation of the Town of Cornwall, until noon of MONDAY, THE 2ND DAY OF SEPTEMBER, 1895, for constructing about seven hundred and sixty (760) lineal feet, or about seven thousand three hundred and seventeen (7,317) square feet of

GRANOLITHIC WALK

on a portion of west side of Pitt Street, according to plans and specifications to be seen at the office of the undersigned.

The work to be completed on or before the 5th day of October, 1895.

A satisfactory guarantee required for the perfect condition of the walk for a fixed period, which period may be terminated by the Corporation at any time after the lapse of one year.

An accepted cheque for ten per cent. of the contract price, payable to the order of the Treasurer of the Town of Cornwall, must accompany each tender as a guarantee for fulfilment of contract; otherwise the tender will not be considered. This cheque will be forfeited if the party whose tender is accepted does not at once sign contract and proceed with the work, but it will be returned in case of non acceptance of tender.

The lowest or any tender not necessarily accepted.

By order,
GEORGE S. JARVIS,
Clerk Town of Cornwall.

Town Hall, Cornwall, August 20th, 1895.

TENDERS FOR STEEL BRIDGE

Tenders will be received by the undersigned up to 1 o'clock p. m., TUESDAY, AUGUST 27TH, 1895, for the erection of a

STEEL BRIDGE

over the Sauble River, 1 mile from Tara; length of bridge 112 feet, C to C of end pins, to be placed on 4 cylinders, 3 feet 6 in. in diameter, filled with concrete, and protected with a cedar cribwork filled with stone. Moving load 100 lbs. per sq. foot. Roadway, 16 feet clear width, no sidewalk. Detailed plans and specifications to be furnished by tenderers, and state earliest date for completion. Particulars obtained from James Warren, Engineer, Walkerton. The lowest or any tender not necessarily accepted.

J. M. MONKMAN,
Tp. Clerk, Arkwright.

Arran, Aug 12th, 1895.

TENDERS FOR STEEL BRIDGE

Tenders will be received by Mr. Archibald McRae, Tara P. O., up to 1 o'clock p. m., August 28th, 1895, for the erection of a

STEEL BRIDGE

over the River Sauble in the village of Tara. Length of bridge, 84 feet C to C of end pins, to be placed on 4 cylinders, 3 feet 6 in. in diameter, filled with concrete and protected with a cedar cribwork filled with stone. Moving load, 120 lbs. per square foot. Roadway 18 ft. clear width. Needle beams to extend on each side for two 5 ft sidewalks. Tenderers to state price with sidewalk completed, also without being completed. Detailed plans and specifications to be furnished by tenderers, and state earliest time for completion. Particulars obtained from James Warren, Engineer, Walkerton. The lowest or any tender not necessarily accepted.

Tara, Aug. 12th, 1895.

CONTRACTS OPEN.

BENSFORT, ONT.—W. Smyth will erect a saw and shingle mill here.

ST. ALBANS, QUE.—The sum of $20,000 will be spent on new schools.

MORRISBURG, ONT. — A sewerage system for the village is necessary.

SARNIA, ONT.—The corner stone of the general hospital was laid on the 13th inst.

WATERLOO, ONT.—A new Anglican church is to be built here in the near future.

PORTAGE LA PRAIRIE, MAN. —The Salvation Army intend erecting a $5,000 barracks here.

EAST ANGUS, QUE.—The St. Francis Lumber Co. has decided to build a large saw mill here.

SHERBROOKE, QUE.—The Sisters of the Precious Blood are preparing to erect a large nunnery.

BERLIN, ONT.—Ten thousand dollars have been subscribed towards the Hospital building fund.

GATINEAU POINT, QUE.—The council is again considering the question of constructing waterworks.

HUNTINGDON, QUE.—The Mayor has been authorized to sign the contract with the Stadacona Water, Power and Light Co., of Montreal, to supply the town with waterworks, sewerage and electric light.

ST. CATHARINES, ONT.—The Council is considering drainage extension estimated to cost $15,000.

VICTORIA, B. C.—C. O. Wickenden, architect, is receiving tenders for two houses on Thurlow street.

SUMMERVILLE, ONT.—C. O. Shavre invites tenders until the 24th inst. for building a stone wall under barn, 80×35 feet.

NINGA, MAN.—The elevator of the Lake of the Woods Milling Co., which was burned last week, will be rebuilt at once.

WELLINGTON, B. C.—Frank Richards, of Victoria, is organizing a company to supply a waterworks system for this place.

HAWKESBURY, N. S.—It is stated that Mr. Killeen has secured the necessary funds to build the Hawkesbury-Louisburg railway.

WINNIPEG, MAN.—Three dwelling houses at Rat Portage, and the Methodist church at Assiniboine, were wrecked by a recent storm.

SCHOMBERG, ONT.—It is reported that a company of Scotch capitalists are considering the construction of a railway around this town.

ST. THOMAS, ONT.—St. John's Anglican church intend erecting a new parsonage for their rector, on the grounds adjoining the church.

WOODSTOCK, ONT.—The plans of Mr. W. M. Davis for sewerage works will be submitted to the Provincial Board of Health for approval.

FREDERICTON, N. B.—J. A. Ruel, C. E., has about completed his survey of the city for a sewerage system, and plans will be prepared at once.

NAKUSP, B. C.—It is understood that the Kansas City Consolidated Smelting & Refining Company has decided to erect a large smelting plant here.

RODNEY, ONT.—Horace J. Jell, municipal clerk of Arlborough, is asking for tenders until the 1st of September for the purchase of $4,000 of debentures.

KINGSTON, ONT.—The Court of Revision has confirmed the assessments for a main sewer on William street, and the work will be proceeded with at once.

ELORA, ONT.—Tenders for laying about ten thousand square feet of artificial stone sidewalk in this village will be received by Alex. Petrie, Clerk, until the 30th inst.

WINDSOR, ONT.—The Windsor and Essex Committee appointed to select a joint city and county building site have decided in favor of the Central High School block.

CARLTON PLACE, ONT. The foundation for Mr. G. E. Leslie's new building has been commenced. The building is to be solid brick, three stories high, with basement. The front will be of iron. 100,000 Don alley Pressed bricks will be used.

NEW WESTMINSTER, B. C.—M. De Keyser-Verbiest, of Victoria, has written to the City Council of this place asking what inducements will be given for the establishment of a linseed oil mill.

BRANDON, ONT.—It is rumored that the city purposes building another bridge across the Assiniboine river on Eighteenth street. It has not yet been ascertained whether the new structure is to be of wood or iron.

PRESTON, ONT.—The Preston Mineral and Swimming Bath Co. propose to erect a substantial bath house, at a cost of $10,000, to be 45×60 feet, two stories, containing 25 bath rooms, all the baths to be of porcelain.

COTE ST. PAUL, QUE.—Mr. Vanier, Civil Engineer, of Montreal, has been instructed to make a survey of the village for a drainage system. The survey will be completed in about two months, after which tenders will be called and the work commenced next spring.

NIAGARA FALLS, ONT.—The International Belt Line Railway Company will shortly apply for incorporation, to construct railways in the village and the township of Stamford. The capital stock is placed at $50,000. Wm. Kyle, Toronto, I. P. Emes, M. A. Donnelly and John Bender, of this place, are among the promoters.

LONDON, ONT.—Work has been commenced on the excavation of the London Electric Railway power house. Contracts for the building have not yet been awarded.—A building permit has been granted to Tambling & Jones, for a two-story brick residence on Waterloo street, and to the authorities of Knox church, for repairs to cost $3,500.—Tenders are being asked for the new Y. M. C. A. building, and the work will be commenced this season.

ST. JOHN, N. B.—The Cushing saw mill will be rebuilt by Geo. H. Cushing. Alston Cushing will probably erect a mill at Aroostook.—It is understood the Provincial Government has in contemplation the erection of a new bridge across Vaughan's Creek, at foot of Hardscrabble Hill.—Tenders for heating the Erin street school building are invited until the 27th inst., addressed to Edward Manning, Secretary.

KINBURN, ONT.—For years about 10,000 acres of land in Carleton County, lying along the Carp river, has been inundated with water, and steps are now being taken to remedy it. It is proposed to blast out a part of the river below Kinburn, about three miles from its mouth, where a rock dams back the water and prevents its natural flow towards the river. The work will cost in the neighborhood of $15,000, and it is likely the federal and provincial governments will be asked to aid in the enterprise. A channel about ¼ of a mile long will need to be blasted through a solid rock to a depth of five or six feet, and a portion of the river on this side of Carp will require to be dredged.

MONTREAL, QUE.—J. Alcide Chausse, architect, has been instructed to prepare plans and specifications for a church and presbytery for the Parish of St. Lambert, for which tenders will be called for in a few days.—The C. P. R. has purchased property on Osborne street and intends extending its buildings.—W. Davis & Sons, contractors for the proposed works of the Lachine Hydraulic & Water Power Company, are making preparations for commencing the work.—Messrs. Hamilton, dry goods merchants, have purchased the old Erskine church property on St. Catherine street, on which they propose erecting a large building, 75×175 feet, three stories high. The present walls of the church will be retained. The work of demolishing the building will commence at once and estimates for construction will shortly be asked for.

TORONTO, ONT.—The City Council has given notice that it is proposed to construct the following works: macadam roadways, Gloucester street, from Yonge to Church street, cost $1,066; on John street, from Front to King street, cost $950; on Christopher street, from University street to Chestnut street, cost $430; cedar block roadway on St. Patrick street, from Beverley street to Spadina avenue, cost $4,200.—Mr. W. T. Jennings, Consulting Engineer, has invited tenders for the construction of the Tilsonburg, Lake Erie and Pacific railway from Tilsonburg to Port Burwell.—Mr. Shipley, representing a Michigan glue manufacturer, was in this city recently in connection with a scheme to build a branch glue factory here.—The Normal school in this city has been found to be too small, and steps will probably be taken in the near future to erect a new building.

OTTAWA, ONT.—The Department of Railways and Canals is asking for tenders until Monday, the 26th inst., for the erection of stone workshop and offices at the Sault Ste. Marie canal. Plans may be seen at the office of the Chief Engineer in this city, and at the office of the engineer in charge at Sault Ste Marie.—The proposed new bridge over the canal from Maria to Theodore streets is estimated to cost $100,000 and will be about 250 feet in length. The city will be required to build the approaches, and the railway companies the bridge proper, but it is probable the government will be asked to contribute a share of the cost.—The Board of Works invites tenders until Wednesday, the 28th inst., addressed to Napoleon Champagne, Chairman, for the excavation work required for the construction of sewers on Baird and Isabella streets. Plans may be seen at the City's Engineer's office.—J. Y. Griffin's pork factory is to be enlarged this fall.

HAMILTON, ONT.—A petition is being circulated asking for the construction of a sewer on Main street, east of Sanford avenue.—Mr. H. Carscallen, Q. C., is taking steps to secure the erection of a first-class hotel in this city, and when the railway projects now in hand are completed, he expects to have the new building under way, which, it is said, will be seven stories high. Several sites have been examined.—It is reported that the Hamilton, Grimsby and Beamsville Electric Railway Co. are taking into consideration the extension of their road to Jordan. The advantage of this move would be that the company would save on the wiring, though they would have to erect another power-house, probably at Beamsville.—Building permits have been granted as follows: Mrs. A. Larkin, two storey brick dwelling on Simcoe st., cost $2,000; R. Bigelow, three two-storey brick dwellings on Robert street, cost $3,600; R. Buscombe, two-storey brick dwelling on Markland street, cost $2,000; A. Larkin, two-story brick dwelling and two semi-detached two story brick dwellings on Bay street, near Simcoe, cost $4,500; John Doherty, two story brick dwelling on Hannah street, cost $800; Wm. Lord, two two-storey brick dwellings on Queen street south, cost $1,200.—At a recent meeting of the Board of Works it was decided to permit the putting down of granolithic sidewalks where the owners of property are willing to pay their portion of the cost, also that John street, between King and King William streets, be paved with rock, asphalt and cement on a concrete bed.

FIRES.

A four storey brick building at 785 King st. west, Toronto, occupied by Geo. L. Diehl & Co., was gutted by Friday on Friday last. The loss is about $2,000 on building and $5,000 on stock.—The residence of Dr. Clemens, at Port Perry, Ont., was destroyed by fire on the 18th inst. Loss $11,000; insurance, $6,000.—Andrew Fawcett's residence at Ashburnham, Ont., was burned last week. Insurance $900.—The hotel of Chas. Armstrong, at Teviotdale, Ont., was destroyed by fire recently, together with store and storehouse adjoining owned by J. H. Shunk, of Toronto. It is probable the owners will rebuild.—The Progress House at Tavistock, Ont., owned by J. J. Tettlanfer, was burned on Tuesday last. Insurance, $1,200.—The residence of Neil J. Campbell, at Tiverton, Ont., was destroyed by fire on the 20th inst.

CONTRACTS AWARDED.

MONTREAL, QUE.—The Road Committee has awarded the contract for street crossings to O. Bastien.

HUNTINGDON, QUE.—The Standard Drain Pipe Co., of St. Johns, will supply the pipe for the drainage system here.

PORTAGE LA PRAIRIE, MAN.—The contract for the new Baptist church here has been awarded to Messrs. Campbell & Millar, local contractors.

EASTMAN'S SPRINGS, ONT.—The contract for a new Catholic church to be built here has been let to Joseph Bourque, of Hull, Que. It will cost $5,000.

NEW GLASGOW, N. S.—W. R. McKenzie and R. Olding have secured the contract for the Y. M. C. A. building here. It will cost $10,000 and will be built of brick and stone.

OTTAWA, ONT.—J. H. Wurtele, of this city, has been awarded the contract by the Department of Railways and Canals, for supplying 2,500 barrels of cement for the Trent Valley canal.

WINNIPEG, MAN.—The tender of Kelly Bros. & Co., for the erection of the Dufferin school has been accepted by the School Board. The price is $22,350. C. H. Wheeler, architect.

TORONTO, ONT.—Mr. John J. Garthshore, of this city, has supplied about 300 tons of steel rails for the extension of the Toronto and Suburban electric railway from Toronto Junction to Weston.

KINGSTON, ONT.—The successful contractors for additions to Edge Hill, for J. Fortescue are: W. McCartney, masonry; Davidson & McCoy, carpentry; McKelvey & Birch, plumbing; Simmond Bros., galvanized iron work; T. Milo, painting and glazing; Arthur Ellis, architect.

MONCTON, N. B.—Contracts have been awarded for the construction of 160 platform cars, 75 box cars and 40 hopper cars for the International railway. Rhodes & Curry, Amherst, N. S., will build 75 platform cars, 40 box cars and 40 hopper cars. The Rathbun Company, of Deseronto, will do the balance of the work.

ALEXANDRIA, ONT.—The following tenders for the new waterworks have been accepted: Steam pump and machinery, Northey Manufacturing Co., Toronto; standpipe, Canadian Bridge & Iron Co., Lachine; pipes and hydrants, Wm. Clendinneng & Son, Montreal; intake dam and boiler, Garson & Co., Hamilton, Ont.

BUSINESS NOTES.

Henry Creed has been registered proprietor of H. Creed & Son, plumbers, Montreal.

A factory for making ornamental brick has been established at Shallow Lake, Ont., by R. J. Doyle.

Robertson & Ross, contractors, Fort William, Ont., are said to be compromising at 50 cents on the dollar.

Adolphe and Israel Reeves, joiners and contractors, Montreal, have registered a partnership under the style of Reeves & Frere.

ALLOWANCE FOR WIND PRESSURE ON BRIDGES IN INDIA.

In a recent number of the Indian Engineer some extracts are made from the rules for working stress on girder bridges, issued by the Government of India Public Works Department under date of December 13th, 1893. The rule regarding wind pressure is worded as follows :

1. The amount of wind pressure on a railway bridge is to be calculated on the assumption that the maximum normal pressure may be one and a half tons per 100 square feet of surface exposed. The surface exposed to be reckoned as follows :

(*a*) A train surface calculated on a height of 13 feet 6 inches on the 5-foot 6-inch gauge, or 11 feet on the meter gauge, multiplied by the total length of the girder.

(*b*) The actual surface (as seen in elevation) of that portion of one girder which may be below rail level, or at a height above rail level of more than 13 feet 6 inches on the 5-foot 6-inch gauge, or 11 feet on the meter gauge. Also,

(*c*) In the case of triangulated girders, the actual vertical surface (as seen in elevation) of that portion of the leeward girder which may be below rail level, or at a height above rail level of more than 13 feet 6 inches on the 5-foot 6-inch gauge, or 11 feet on the meter gauge.

2. The total wind pressure thus calculated is to be provided for by a proper system of wind bracing, or floorplating, and its effect taken into account as forming a part of stress on the chords of the main girders. Proper arrangements must also be made at the girder ends to secure sufficient stiffness to resist racking action where diagonal stiffeners are not used.

3. Wind pressure is to be treated as "fixed load" and its effect on the different members of the structure is to be allowed for as provided in the rule for "maximum permissible stress."

STRONG MASONRY.

In demolishing a part of the Albert warehouses in Liverpool, belonging to the Mersey docks and harbor board, it occurred to the assistant engineer in charge of the work to make some investigations into the strength of the old brickwork. The wall was built about 50 years ago of hand-made bricks, laid in ground mortar made with Flintshire lime. This lime is in a high degree hydraulic and has a reputation of making mortar of exceptionally good quality. The Journal of the Royal Institute of British Architects, which describes the investigation, states that the engineer conceived the happy thought of leaving a piece of it in the form of a horizontal beam, having a twelve foot span and measuring it about two feet square in section, seven courses in the height of a two foot wall. The ends of the beams were not cut free from the rest of the work. This beam was then loaded with all the weight that could be conveniently piled upon it, without appreciable deflection or other sign of weakness resulting. Two courses were then cut off and the whole weight again put on, but without other result. The beam was further reduced by a course, leaving it four courses or fourteen inches deep, and the ends were all cut free from the other work—the mortar beds of the twelve inch bearings being left untouched. A centrally placed load of five tons, fifteen hundredweight was then gradually piled upon it, and was borne for several days without apparent effect upon the brick work. Finally the weight was increased to six tons nine hundredweight twenty-three pounds, which was sustained for thirty hours, when the beam collapsed during the night, and came down in pieces more like broken timber than anything else. Other tests were made with similarly astonishing results, but the above are sufficient to show what really first-rate brick work in hydraulic lime will stand.

ADHESION OF CEMENT MORTAR TO BRICK WORK.

A large number of experiments have been lately conducted to determine the adhesion between various cement mortars and makes of brick. Five kinds of brick were subjected to the test, says the Building News: 1. Hard, well burnt, machine made and repressed bricks, having well finished surfaces; 2. Soft machine made bricks, used for facing; 3. Hard clamp burnt, hand made bricks; 4. Hand made facing bricks, softer and weaker; 5. Sun burnt bricks, used for foundations. The cements were: 1. A slow setting Portland; 2. A quick setting Portland; 3. A slow settting slag cement; 4. A moderately slow setting slag cement; 5. Another make of slow setting cement. First, 1 part cement to ½ part sand; second, 1 part cement, 1 part sand; third, 1 of cement to 2 of sand. The bricks were carefully cemented together, before which they were soaked in water, and after setting their adhesion was tested at various dates. From the mean of experiments, which were repeated four times in each case, it was ascertained that the smooth pressed brick gave a far better hold to the mortar than the rougher varieties—a result unexpected. The table of results shows many irregularities. The highest result is for a machine made, repressed, hard brick with quick setting Portland (1 part cement, 1 part sand), which gave at 44 days an adherence in pounds per square inch of 106.7 pounds, more than 50 per cent. greater than the other results in the same column, showing the greater adhesion of quick setting Portland of the above proportion to the slower setting cement.

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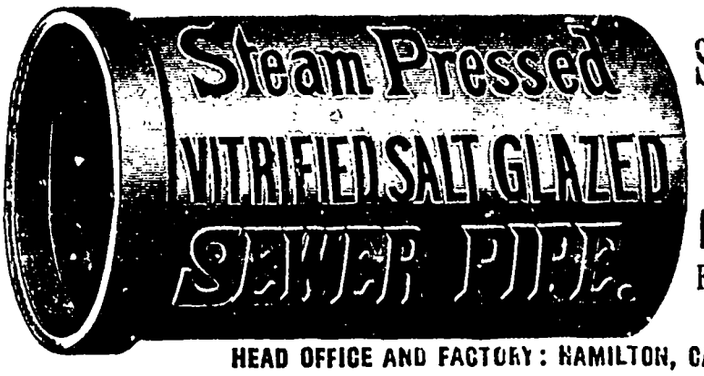

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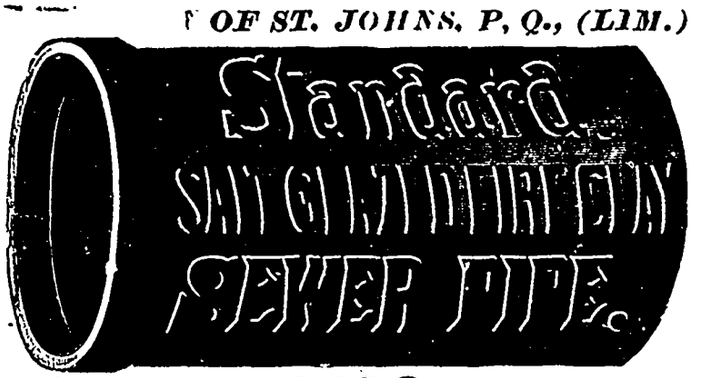

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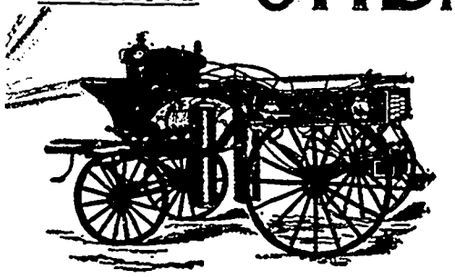

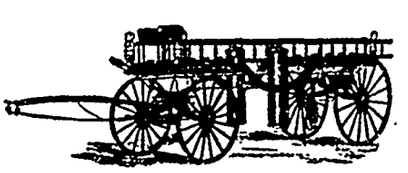

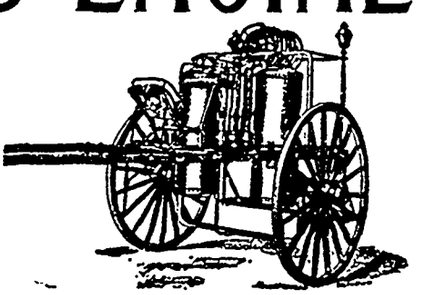

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D. D. WILSON, Managing Salesman. **JOHN BREDEN**, Sec.-Treas., KINGSTON, ONT.

For reference address H. YOULDEN, Chief Fire Department, Kingston.

MUNICIPAL DEPARTMENT

THE PHYSICAL QUALITIES OF BUILDING AND PAVING BRICKS.

A very extensive table of results of "Tests of Paving-Bricks," prepared by Mr. E. S. Fickes, of Steubenville, Ohio., who also made the tests, is printed in Engineering News. The amount of work represented in this table is large. Samples of bricks from no less than thirty-four widely separated localities in the United States are tabulated—often a considerable number of samples from the same locality; so that one hundred and one different samples are represented. For example, six samples of Canton, Ohio., seven from Cleveland, eleven from St. Louis, ten from Philadelphia, and four from New Cumberland, W. Va., are represented.

An exhaustive analysis of the tabulated results enables the following rules for paving bricks to be deduced.

"1. Paving bricks are best tested by their resistance to abrasion when tumbled, and they vary considerably in that respect, some losing nearly three times as much weight as others for a given amount of tumbling.

"2. Any brick which will stand tumbling well has ample crushing strength, rarely chipping under less than five thousand pounds per square inch, or crushing under less that ten thousand pounds. The crushing strength tends to vary with the resistance to abrasion, however, but more slowly and irregularly.

"3. The transverse strength also tends to vary with the resistance to abrasion, but more slowly and irregularly. Good paving-brick should show a modulus of two thousand to two thousand five hundred under transverse load, but brick with small resistance to abrasion will often show high transverse strength, so that the test has only negative value.

"4. The quantity of water absorbed in twenty-four hours should be small, as an end in itself, but it is a very rude test of the quality of the bricks in other respects. The toughest bricks tend to show the least absorption, and any paving-brick absorbing much more than one per cent. of moisture in twenty-four hours is justly open to suspicion; but some of the best bricks will absorb more than thirteen per cent. of water, and some of the poorest bricks will absorb much less. All good paving-bricks absorb less than two per cent., which is greatly less than the best building bricks absorb."

For building bricks a different set of rules is deduced, although this has been a more difficult task than it was to draw conclusions applicable to paving-bricks, requiring a rearrangement of the tests in the order of ultimate crushing strength per square inch, and subdivision into groups as follows: crushing strength—(A) 8,000 per square inch, and over; (B) 6,000 to 8,000; (C) 5,000 to 6,000; (D) under 5,000.

"1. The strength of building-brick, both transverse and crushing, varies in tolerably close inverse ratio with the quantity of water absorbed in twenty-four hours. The strongest bricks absorb least water.

"2. Good building-bricks absorb from six to twelve per cent. of water in twenty-four hours, and, with no greater absorption than twelve per cent., will ordinarily show from seven thousand to ten thousand or more pounds, per square inch, of ultimate crushing strength, and a transverse modulus of seven hundred to twelve hundred pounds or more.

"3. Poor building-bricks will absorb from one-seventh to one-fourth of their weight of water in twenty-four hours, and average a little more than half the transverse and crushing strength of good bricks.

"4. An immersed brick is nearly saturated in the first hour of immersion; in the remaining twenty-four hours the absorbtion is only one-half to four-fifths of one per cent. of its weight, as a rule.

"5. The strength of bricks in the kiln is least in the top course, and increases quite rapidly for the first ten or twelve courses, and afterwards more slowly down to the arch bricks.

"6. The size of bricks varies greatly in different parts of the country, the weight vary from 3.84 to 6.34 pounds. The Eastern bricks tend to smaller sizes than do the Western, but the variation is often considerable in different makes of bricks in the same locality.

"7. Bricks made by the dry press are, as a rule, notably less porous and stronger than those made by the wet mud process. To this rule, however, there are some exceptions."

FLOATING DRAINERS FOR SEWAGE WORKS.

The Glenfield Co., of Kilmonock, have recently supplied to the Glasgow Corporation some novel floating drainers which are used to empty the clear liquid from the surface of the precipitation tanks used in the system of sewage disposal, after the sewage has settled to the bottom. These drainers are controlled by double-faced sluice valves, operated by rods passing through pillars placed on the walls, with hand wheels for opening and closing. According to the engineer they are placed close to the sides of the tanks, so as to be easily operated by men standing on the division walls. Before the sewage is admitted to the tanks the arms are drawn up to an almost vertical position and fixed by chains to the pillars. After precipitation has sufficiently advanced the arms are lowered and the cocks on the pillars of the sluice valves opened to allow water to enter and sink the arms till the floats rest on the surface of the liquid. The floats keep the open mouths of the arms just below the surface of the water, the arms sinking with the liquid till the floats rest on the sludge, after which the arms are again hauled up and fixed to the pillars to await the refilling of the tanks. By this method of surface draining considerable time is saved, and all risk of disturbing the settled sludge is avoided.

The ventilation of sewers is discussed as follows by Mr. Freeman C. Coffin, M. Am. Soc. C. E., in a recent report to the town of Attleboro, Mass.: "I believe in the majority of sewers the only ventilation provided is through perforations in the iron covers of the manholes, and although this alone may not be a perfect method I have never known of any serious results from it. Some advocate carrying a ventilating pipe from the house drain outside the pipe to the eaves of the buildings, but this would add quite an expense. It is also proposed to omit the trap from the house drain and ventilate through the soil pipe in the house. If the town authorities could exercise full control over the plumbing in the houses as well as over house drains, and means were used to keep all traps sealed when the house was vacant, this would seem to be as good a method as could be devised when manhole covers are perforated for an inlet. Under probable conditions, however, I am inclined to advise you to use the perforated manhole covers alone for ventilation."

INDEX TO ADVERTISEMENTS

In the "Canadian Architect and Builder."

Prices of Building Materials.

CONDITION OF THE MARKET.

TORONTO: Business is steady, and the feature of the market is the advance of 40 cents per keg in cut nails, the base price now being $2.50. Wire nails have also advanced, the discount being reduced 5 per cent. Plumbers' supplies are still active, and manufacturers are behind with their orders. Cement has declined slightly in price.

MONTREAL: A fair volume of business is reported, plumbers' supplies being particularly active. The sale of 1,000 barrels of English cement on western account is reported, the price being $2.05 per barrel. Firebricks remain unchanged, at $15 to $21 per thousand. Paints and oils are steady, with no change in quotations to note.

LUMBER.

CAR OR CARGO LOTS.

	Toronto.		Montreal.	
	$	$	$	$
1¼ to 2 clear picks. Am ins	33 00@36 00		40 00@45 00	
1¼ to 2 three uppers, Am ins.	37 00	40 00	45 00	
1¼ to 2½ pickings, Am ins	26 00	27 00	30 00	
1 inch clear		40 00	45 00	
1 x 10 and 12 dressing and better	20 00	22 00	18 00	20 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	10 00
Spruce culls	10 00	11 00	8 00	10 00
1 x 10 and 12 culls	9 00	10 00		9 00
1 inch clear and picks	28 00	3200	35 00	40 00
1 inch dressing and better	20 00	22 00	18 00	20 00
1 inch siding, mill run	14 00	15 00	12 00	16 00
1 inch siding, common	12 00	13 00	10 00	13 00
1 inch siding, ship culls	11 00	12 00	10 00	11 00
1 inch siding, mill culls	9 00	10 00	8 00	9 00
Cull scantling	8 00	9 00	8 00	9 00
1¼ and thicker cutting up plank	24 00	26 00	22 00	25 00
1 inch strips, 4 in to 8 in. mill run	14 00	15 00	14 00	15 00
inch strips, common	11 00	12 00	10 00	12 00
1¼ inch flooring	16 00	17 00	12 00	15 00
1½ inch flooring	16 00	17 00	12 00	15 00
XXX shingles, sawn, per M 16 in	2 40	2 50	2 60	2 60
XX shingles, sawn	1 40	1 50	1 60	1 70
Lath	2 00			1 50

VALUATIONS.

Mill cull boards and scantling		10 00	10 00	12 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	12 00	3 00
Hemlock scantling and joist up to 20 ft	13 00	14 00	13 00	14 00
Cedar for block paving, per cord		5 00		5 00
Cedar for kerbing, 4 x 14, per M		14 00		14 00
Scantling and joist, up to 16 ft		14 00		14 00
" " 18 ft		15 00		16 00
" " 20 ft		16 00		16 00
Scantling and joist, up to 22 ft		17 00		17 00
" " 24 ft		19 00		19 00
" " 26 ft		20 00		21 00
" " 28 ft		22 00		23 00
" " 30 ft		24 00		25 00
" " 32 ft		27 00		27 00
" " 34		29 50		29 50
" " 36 ft		31 00		31 00
" " 38 ft		33 00		33 00
" " 44 ft		34 00		36 00
Cutting up planks, 1¼ and thicker, dry	25 00	28 00	25 00	30 00

B. M.

1½ in. flooring, dressed, F M	26 00	30 00	28 00	31 00
1½ inch flooring, rough, B M	18 00	22 00	18 00	22 00
1¼ " dressed, F M	25 00	28 00	27 00	30 00
1¼ " undressed, B M	18 00	19 00	18 00	19 00
1½ " dressed	18 00	20 00	18 00	22 00
1¼ " undressed	12 00	15 00	12 00	15 00
Beaded sheeting, dressed	20 00	35 00	22 00	35 00
Clapboarding, dressed		12 00	8 00	12 00
XXX sawn shingles, per M 18 in	2 60	2 70		3 00
Sawn lath	2 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	50 00
Basswood, 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 stock	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		6 50		6 00
Good Facing		8 00		8 50
Sewer	8 50	8 50	8 50	9 00

Pressed Brick, Per M:

Red, No. 1, f.o.b. Beamsville		16 00		
" " 2		14 00		
" " 3		9 00		
Buff		21 00		
Brown		24 00		
Roman Red		30 00		
" Buff		35 00		
" Brown		40 00		
Sewer		7 50		
Hard Building		6 00		
Roof Tiles		22 00		
Hip Tile (each)		20		
Ridge Tile "		60		
1st quality, f.o.b. at Port Credit		14 00		18 00
2nd " " " "		12 00		15 00
3rd " " " "		8 00		12 00
Hard building brick		6 50		
Ornamental, per 100	3 00	10 00		

F. O. B DON VALLEY.

Red A		18 00		24 00
Red B		16 00		20 00
Red C		13 00		17 00
Trojan and Corinthian		21 00		28 00
Pompeiian		22 00		29 00
Athenian and Egyptian		25 0		31 00
Tyrian		35 00		41 00
Sicilian		40 00		45 00
Roman		35 00		40 00
Carthaginian		40 00		45 00
Ornamental	30 00	100 00	30 00	100 00
Common insides		6 00		
Hard sewers		7 50		
Vitrified pavers		16 00		22 00

SAND.

Per Load of 1½ Cubic Yards		1 25		1 25

STONE.

Common Rubble, per toise, delivered		14 00		14 00
Large flat Rubble, per toise, delivered		18 00		18 00
Foundation Blocks, per c. ft.		50		50
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		
Ballochmyle	80	90	65	75
New York Blue Stone				1 05
Granite (Stanstead) Ashlar, 6 in. to 12 in., rise 9in., per ft.				25
Moat Freestone			70	80
Thomson's Gatelawbridge, cu. ft.			75	80
Credit Valley Rubble, per car of 15 tons, at quarry		8 00		
Credit Valley Brown Coursing, up to 10 inch, per sup. yard, at quarry		1 75		3 25
Credit Valley Brown Dimension, per cu. ft. at quarry		60		75
Credit Valley Grey Coursing, per superficial yard	1 50	2 00		2 15
Credit Valley Grey Dimension, per cubic foot		60		75
Clark's N. B. Brown Stone, per cubic foot, f.o.b.		1 15		1 00
Brown Free Stone, Woodpoint, Sackville, N.B., per cub. ft.		1 15		1 00
MadocRubble, delivered, per toise	14 00	14 50	14 00	14 50
Madoc dimension floating, f. o. b. Toronto, per cubic ft.	30	32		

OHIO FREESTONE, FROM THE GRAFTON STONE CO.'S QUARRIES.

No. 1 Buff Promiscuous		70		85
No. 1 Buff Dimension		75		90
No. 1 Blue Promiscuous		55		70
No. 1 Blue Dimension		60		75
Sawed Ashlar, No. 1 Buff, any thickness, per cub. ft.		90		1 05
Sawed Ashlar, No. 1 Blue, any thickness, per cub. ft.		75		90
Sawed Flagging, per sq. ft., for each inch in thickness.		06½		07½

Above prices cover cost freight and duty paid. For small lots add 5 to 10 cents per cubic foot.

Quebec and Vermont rough granite for building purposes, per c.ft. f.o.b. quarry	33	1 50		
For ornamental work, cu. ft.	35	2 0		
Granite paving blocks, 8 in. to 12 in. x 6 in. x 4½ in., per M		50 00		
Granite curbing stone, 6 in. x 20 in., per lineal foot		70		

SLATE.

Roofing ($ square).				
" red		18 00		20 00
" purple		9 00		10 00
" unfading green		9 00		6 00
" black		8 00		5 50
Terra Cotta Tile, per sq.		25 00		
Ornamental Black Slate Roofing		8 50		

PAINTS. (In oil, $ lb.

White lead, Can., per 100 lbs.	6 25	5 50	5 50	6 00
" zinc, Can., " "	6 50	7 50	6 50	7 50
Red lead, Eng	4 00	5 00	4 50	5 00
" venetian, per 100 lbs	1 60	1 75	1 00	1 75
" vermillion	90	1 00	90	1 00
" Indian, Eng	10	12	10	12
Yellow ochre	5	10	3	5
Yellow chrome	15	20	15	20
Green, chrome	7	12	7	12
" Paris	0	25	14	20
Black lamp	15	25	12	25
Blue, ultramarine	15	20	12	18
Oil, linseed, raw, $ Imp. gal.	54	59	58	59
" " boiled "	57	63	62	63
" " refined, "	78	85	75	75
Putty	2¾	2½	2¾	2½
Whiting, dry, per 100 lbs	75	1 00	60	75
Paris white, Eng., dry	90	1 25	90	1 00
Litharge, Eng	4	5	4 50	5 00
Sienna, burnt	10	15	12	15
Umber, "	8½	12	12	15

CEMENT, LIME, etc.

Portland Cements.—				
German, per bbl		3 25	2 55	2 65
London "	2 50	2 75	1 02	2 05
Newcastle "		2 50	1 85	1 95
Belgian, Josson, artificial	2 65	2 95	2 25	2 30
English, artifical, per bbl	2 60	2 90	2 55	2 65
Portland Cements.—				
Belgian, natural, per bbl	2 30	2 40	1 70	1 85
Canadian "	2 50	2 50	1 80	1 85
Roman "			2 00	2 25
Parian "	4 50	4 75	5 50	5 75
Superfine "	6 50	7 00	8 00	9 00
Hydraulic Cements.—				
Thorold, per bbl		1 50	1 25	1 50
Queenston, "		1 50	1 50	1 60
Napanee, "		1 50		1 50
Hull, "		1 50		1 50
Ontario, "		1 25		
Keene's Coarse "Whites"	4 50	4 75	4 50	4 75
Fire Bricks, Newcastle, per M	27 00	35 00	15 00	21 00
" Scotch "	27 00	32 00	19 00	21 00
Lime, Per Barrel, Grey		40		
" " White		50		
Plaster, Calcined, N. B		2 00		
" " N. S		2 00	2 50	
Hair, Plasterers', per bag	80	1 00		

HARDWARE.

Cut nails, 5cd & 6cd, per keg		2 40		2 10
Steel " " " "		2 50		2 35

CUT NAILS, FENCE AND CUT SPIKES.

40d, hot cut, per 10 lbs		2 25		2 15
30d, " " "		2 30		2 20
20d, 16d and 12d, hot cut, per 100 lbs		2 35		2 25
10d, hot cut, per 100 lbs		2 40		2 30
8d, 9d, " " "		2 45		2 35
6d, 7d, " " "		2 60		2 50
4d to 5d, " " "		2 80		2 70
3d, " " "		3 20		3 10
2d, " " "		3 70		3 60
4d to 5d cold cut, not polished or blued, per 100 lbs		2 80		2 60
3d to 5d cold cut, not polished or blued, per 100 lbs		3 20		3 10

FINE BLUED NAILS.

3d, per 100 lbs		3 85		3 60
2d, " "		4 35		4 10

CASING AND BOX, FLOORING, SHOOK AND TOBACCO BOX NAILS.

12d to 30d, per 100 lbs		2 50		2 60
10d, " "		2 80		2 70
8d and 9d, " "		2 95		2 85
6d and 7d, " "		3 10		3 00
4d to 5d, " "		3 30		3 20
3d, " "		3 70		3 60

FINISHING NAILS.

3 inch, per 100 lbs		3 05		2 95
2½ to 2¾ " " "		3 20		3 10
2 to 2¼ " " "		3 35		3 25
1½ to 1¾ " " "		4 45		3 45
1¼ " " "		3 95		3 85
1 " " "		4 45		4 35

SLATING NAILS.

5d, per 100 lbs		3 05		2 95
4d, " "		3 05		2 95
3d, " "		8 45		3 35
2d, " "		3 95		3 85

COMMON BARREL NAILS.

1 inch, per 100 lbs		3 45		3 35
¾ " " "		3 70		3 60
¼ " " "		4 45		4 35

CLINCH NAILS.

3 inch, per 100 lbs		2 95		2 95
2½ and 2¾ " " "		3 10		3 10
2 and 2¼ " " "		3 25		3 25
1½ and 1¾ " "		3 45		3 45
1¼ " "		4 10		4 10
1 " "		4 60		4 60

SHARP AND FLAT PRESSED NAILS.

3 inch, per 100 lbs		3 45		3 45
2½ and 2¾ " " "		3 60		3 60
2 and 2¼ " " "		3 75		3 75
1½ and 1¾ " " "		3 95		3 95
1¼ " " "		4 00		4 60
1 " " "		5 20		5 20

STEEL WIRE NAILS.

Steel Wire Nails, 75, 10 and 5 % discount from printed list.

Iron Pipe:

Iron pipe, ¼ inch, per foot		6c.		6c.
" " ⅜ " "		7		7
" " ½ " "		8½		8½
" " ¾ " "		12		12
" " 1 " "		17		17
" " 1¼ " "		24		24
" " 1½ " "		30		30
" " 2 " "		43		43

Toronto, 67½ per cent. discount.
Montreal, 60 to 65 per cent. discount.

Lead Pipe:

Lead pipe, per lb	7c.
Waste pipe, per lb	7½

Discount, Toronto and the West, 30 % off in small lots; 30 and 10 % off in ton lots; points east of Toronto, 35 and 10 % off.

Galvanized Iron:

Adam's—Mar's Best and Queen's Head:				
16 to 24 guage, per lb		4½c.	4¾c.	
26 guage, "		4¾	5	
28 "		5	5¼	
Gordon Crown—				
16 to 24 guage, per lb		4¼	4½	
26 guage, "		4½	4¾	
28 "		4¾	5	

Note.—Cheaper grades about ½c. per lb. less.

Structural Iron:

Steel Beams, per 100 lbs		2 75		2 50
" channels, "		2 85		2 60
" angles, "		2 50		2 30
" tees, "		2 80		2 65
" plates, "		2 55		2 35
Sheared steel bridge plate		2 25		2 35

(Corrected up to August 21st)