

point near Port Erie. Among the applicants are Albert D. Shaw, John G. Scott, Benjamin G. Lake and Thos. McGaw.

NANAIMO, B. C.—Tenders will be asked shortly for the construction of a proposed electric tramway, the length of which will be 10 miles.—The architects have in course of preparation plans for a considerable number of new buildings.

BROCKVILLE, ONT.—The Board of Trade are taking steps to induce the managers of the New York, Ontario and Western Lehigh Valley Rys. to make the termini of their respective roads on the St. Lawrence opposite Brockville.

PRESTON, ONT.—Mr. Jas. Eseron, photographer, will erect a two storey bk. business block at a probable cost of \$4,000. Mr. Fred Melish, architect, Galt, will award contracts for the work only on or about the 4th of April, the materials being supplied by the owner.

WEST TORONTO JUNCTION, ONT.—The Council has notified Mr. Kunching, C. E., Rochester, that his report on the best system of sewerage to be adopted by the town must be in the hands of the Council not later than the 7th of April.—An expert will be employed by the Council to report on the best electric light system to be adopted by the town.

MAGOG, QUE.—The Town Hall Building Committee met Tuesday afternoon, when specifications were drawn up and the Secretary instructed to advertise for tenders.—Plans are being prepared by Mr. John James Browne, architect, for an extension to the Magog Paint Works. Contracts will be given at once.

VANCOUVER, B. C.—A number of ladies of the city are soliciting subscriptions for the purpose of erecting a Maternity Hospital.—Property on the north side of the inlet opposite the city to the extent of 1,270 acres has been purchased from Capt. Power, of Moodyville, by a syndicate of local capitalists, who will proceed at once to lay out a town site to be known as North Vancouver. Among the improvements to be carried out will be the construction of a wharf, and an electric railway to connect with the city lines.

KINGSTON, ONT.—Plans have been prepared for the proposed new Baptist Church to be erected on Princess St.—The Public School Board will ask the Council for \$35,000 for the erection of a new school building.—The members of the First Congregational Church will hold a meeting in a day or two to examine plans for the proposed improvements to the building.—Mr. Newlands, architect, has prepared plans for a business block for Mr. Drennan. The building will be of brick, with terra cotta dressings.—A stock company is being organized for the purpose of erecting and equipping a gymnasium, to be erected on the Queen's University College grounds.

HALIFAX, N. S.—A by-law is in course of preparation authorizing the council to borrow a sum not exceeding \$150,000, \$100,000 of which it is proposed to expend in laying a new main water pipe from the lake to the north end of the city, and the balance to be used in increasing the means of supply and the efficiency of the service in such manner as may be determined upon after surveys are completed and plans adopted.—The Council has adopted the recommendation of the Board of Works for the widening of Quinpool Road, and the erection of stables for city horses.—Public subscriptions are invited to the amount of \$3,000 for the erection of a pedestal for a statue of Sebastian Cabot, to be presented to the city by Dr. Cogswell.

MONTREAL, QUE.—A restaurant is to be built opposite the Canadian Pacific depot, containing a large dining room with ten smaller dining rooms, four for ladies, with staircase, and promenade on the roof, all lighted with electric lights, John James Brown, architect.—Mr. E. P. Bender, Montmagny, the promoter of the railway from Quebec to Labrador, states that arrangements have been made by which construction will be commenced during the coming summer.—The Dept. of Railways and Canals, Ottawa, has post-

poned the date for the reception of tenders for the work of improving the drainage system of the north side of the Lachine Canal, until the 14th day of April.—A meeting of the Protestant School Board will be held at an early date to consider the plans now in course of preparation for the erection of a new High School building.

OTTAWA, ONT.—Plans have been prepared for the extension of the chancel of St. George's Church and the removal of the organ and choir from the gallery to the chancel. The estimated cost of the work is \$7,500.—Messrs. Ahern & Sopher have purchased property on Albert street on which to erect car shops and offices, quarters for workmen, and work shop for repairs in connection with the proposed electric street railway. The building will be solid brick, 125 x 55 feet.—It is understood to be the intention of the Government not to ask tenders until the summer for the construction of the proposed new canal on the north shore of the St. Lawrence. The Government Engineer has been despatched to England for the purpose of making an inspection of the Manchester Ship Canal.

HAMILTON, ONT.—The estimates of the Council for the current year include the sum of \$15,000 for sewer construction, and \$20,000 for water works construction.—A movement is on foot under the direction of some of the prominent ladies of the city to raise necessary funds for the erection of a building to be used as a Maternity Hospital. It is proposed also to make certain alterations for the purpose of increasing the accommodation of the present hospital buildings.—The City Clerk will receive tenders until 4 p.m. on Wednesday, 23th inst., for the supply of lead pipe, cast iron pipe, supply casting, stop cock boxes, 2½ in. rubber hose, service brass work, 6 in. stop valves, hydrants, iron castings and pig lead for the Water Works Department.—Senator Sanford has intimated his intention of placing a Canadian memorial window in City Road Chapel, London. It is proposed that the window shall contain portraits of some prominent Canadian Methodists.—At a meeting held a few days ago, consent was given a company to lay the necessary pipes to connect the city with the natural gas wells on the Niagara Peninsula.

TORONTO, ONT.—Mr. Robert Milligan will erect three solid brick houses on the west side Ossington ave. Stone foundations, slate roofs, plate glass, hardwood finish downstairs, hot air heating, etc. Contract awarded for excavating only.—An appropriation has been made by the council for the painting of the exterior of the Horticultural Pavilion, the making of new walks and other improvements, the cost of which is estimated at about \$12,000.—Exhibition Park is to be re-paved at a cost of \$17,855.—Advices from Ottawa state that it is the intention of the Government to shortly commence the erection of the proposed new drill shed.—Mr. Richard Ough, 60½ Adelaide st. east, invites tenders until the 23rd inst. for the erection of three houses on Major st.—The Board of Works has decided to advertise for tenders for materials required by the Department for the current year.—Application for incorporation has been made to the Legislature by the Don & Scarborough Railway Co., who propose to build a railway from the intersection of the Don by Queen street through East Toronto Village to Victoria Park, and from thence north to Boston's Corners in the township of Scarborough. Among the applicants are A. W. Dingman, manufacturer; J. K. Leslie, nurseryman, and J. Jones, street commissioner.—The Davenport Electric Railway Co. has been organized, with Mr. Jas. Ausun as President, for the purpose of constructing an electric railway along Davenport Road from Bathurst st. to Lambton. It is said to be the intention to commence the work of construction at an early date.—Messrs. W. H. Howland, W. Skaife and R. A. Lauder are asking the Legislature to guarantee bonds to the amount of \$125,000 for the erection of a beet sugar factory estimated to cost \$250,000.—The Council of East Toronto has decided to aid the establishment of a Girl's Industrial School.—The estimates of the

Board of Works include \$9,000 for the repair and re-construction of stone and wooden kerbs; \$16,900 for wooden and stone crossings; \$25,000 for sidewalks; \$6,000 for bridges; \$226,000 for works to be carried out by day labor, and \$896,000 for works to be carried out by contract.—The by-law for the construction of steel bridges crossing the railway tracks at Dundas street has received the approval of the council. The proposal is to build a bridge that will bear the strain of street car traffic. The estimated cost is about \$75,000.—The following building permits have been granted: Wm. Hutchinson, 3 story bk. machine shop, e. side Ontario st., n. of King st., cost \$2,000; Jas. Smith, four att. 2 story bk. dwellings, n. side Farley ave., w. of Spadina ave., cost \$7,000; Geo. Bain, det. 2 story bk.-fronted dwelling, n. side Saultter st., cost \$1,100; Graham & Bingham, five s. d. 2 story and attic bk. dwellings, s. side Brown st., cost \$8,000; Mrs. Elizabeth Rendall, three att. 2 story bk. dwellings, w. side Manning ave., near Robinson st., cost \$7,500; John Gibbs, pr. 2 story bk.-fronted dwellings, w. side Harris st., cost \$1,700; Board of Management, additions to Girls' Home, Gerrard st., cost \$6,000; J. R. Armstrong, four 1-storey bk. stores, south side of Queen street, cor. Sherbourne St., cost \$2,000; J. Bedford, det. 2-storey and attic bk. and stone villa, north side Isabella St., near Sherbourne, cost \$15,000; Jas. McConvey, det. 2-storey and attic bk. dwelling, 188 Simcoe St., cost \$3,000; Jas. Quinn, alterations to Clarendon Hotel, King St. west, cost \$2,700.

STEAM PIPE REQUIRED FOR HEATING.

The question often arises, How much pipe is required to heat a building of a certain cubic capacity? Of course, this varies with the temperature of the steam used, the degree of heat required to be kept up, the frequency with which the doors are opened, the temperature of the outside air, the intensity of the wind, the area of the window surface, etc. There are no two places in which the conditions are exactly alike, and it would be hard to lay down an absolute rule for any fixed set of conditions. But there are some good data which will do to start from, and a writer in the *Mechanical News* calculates it as follows:

We may start out with the fact that one unit of heat will raise 55½ cubic feet of air from 62 deg. to 63 deg. Fah., and can use these figures, no matter what the temperature and the steam are of the building to be warmed, or what outside atmosphere.

For low pressure steam—say about 5 pounds above atmosphere or by the gauge—the length of 4 inch pipe required for heating the air is found by multiplying the volume of air in cubic feet per minute, to be warmed, by the difference of the temperature in the room and outside, and dividing by 336. The answer will be the length of 4 inch pipe in feet, and will be also about the number of square feet of pipe, as a 4 inch pipe has 12.57 inches circumference, hence but a very trifling over 144 square inches of surface per foot of length. (For 1 inch pipes the divisor required is 84 instead of 336.)

It will take one square foot of direct boiler surface, or its equivalent of floor surface, to keep a temperature of 60 deg. F. in a room with steam at 5 pounds by the gauge, and the ordinary range of temperature in and out of the room.

The Canadian Contractors' Hand-Book, 50 cents to RECORD subscribers.