

designed so as to come together easily, ample clearance should be provided in all cases, and it should be remembered that the finished product of a bridge shop is not "machined all over" by any means. All parts must be accessible after erection for painting, for the life of the construction is largely dependent upon the keeping up of a good covering of paint.

Before starting a general design all the data involved should be at hand to avoid annoying changes after the work has been advanced. In determining the location of supports, skews should be avoided as much as possible. The ideal crossing has square ends, is located on a tangent and level grade and this ideal should be worked up to as often as circumstances permit, the locating of bridges on complicated spirals is an abomination. A correct profile of the crossing is necessary, showing height from base of rail or roadway to highwater level so as to determine necessary heights, clearances and whether span shall be through or deck. The most economical number of spans for a crossing is fixed by the criterion that the cost of the pier must be equal to the cost of the main trusses and bracing of one of the spans.

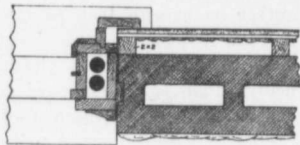
Generally speaking, deck bridges are more economical than through, as the trusses may be placed closer together, making a large saving in the floor system—getting at the same time a more effective and economical bracing. The economy in the substructure is, also, quite an item to be taken into consideration. It is a good point in designing deck spans to carry the masonry to the top chord, and thereby obtaining greater stability and rigidity.

#### A Method of Making Window Frames.

A method of making window frames for an eight inch thick concrete block wall, furred with 2 by 2 inch strips and lathed and plastered, is given in the "American Carpenter and Builder":

About all that can be done in a case of this kind is to make the window boxing come within the clear of the opening between the jambs, as

shown in the accompanying sectional drawing. A special wide mould is used on the face of the frame to relieve the plain surface that otherwise would show. This mould should carry across the top so as to show the same width as at the sides, and when properly made to work with the blocks will look all right. Care should be



taken to have tight jambs, and, as most blocks are made with a slot at the ends, this can be successfully done by nailing a strip on the back of the frame so as to come within the slot and then filling in the remaining space with mortar. This not only breaks the continuous crack, but also makes an excellent tie in the wall.

#### Cleansing Smoke Stains from Brick Fronts.

It very often happens that the brickwork of a building is stained with smoke from fire, and the question naturally arises as to the best method of cleansing the brick so that it will appear as much as possible like the original. A question of this character came up recently in the "Painters' Magazine," in reply to which the following method was suggested:

To 1 gallon of good soft soap, not too watery, add 2 pounds of powdered pumice, 00 or F., and 1 pint of liquid ammonia. The article sold as household ammonia will answer, though it will be all the more effective if a little stronger. First remove as much of the soot and dust as possible with a stiff broom or fibre brush, then apply the soap and ammonia mixture with an ordinary fibre wall brush or common whitewash dip, let it remain for about 20 to 30 minutes, then with a good scrubbing brush rub it briskly, dipping the brush into clear water once in a while. Have a few pails of water handy and a large carriage sponge to go over the scrubbed surface and finally rinse with clear water. If convenient, use a hose with spray nozzle for rinsing. This will

remove the most stubborn case of staining from fire and smoke.

#### Quebec Bridge Pier in Danger.

It is reported from Quebec that there is danger of the destruction of the main pier of the wrecked bridge by ice jams in the coming spring. The danger lies in the fact that the fallen superstructure of the defunct bridge still remains in the same position as at the time of its collapse, and the steel linked with the main pier, should be cut asunder to obviate the danger. The water in the river channel where the superstructure fell is not less than 300 feet deep, and consequently the steel work cannot be recovered, especially on account of its great weight.

Engineers cognizant of the situation say that there is no other alternative than to cut the steel connected with the main pier and cause it to sink to the bottom of the deep river, where it will be no impediment to navigation. They likewise assert that the metal should be cut as soon as possible, to avert injury to the main pier on the south side of the river before the ice shove in the spring.

#### Death of Mr. George Moir.

By the death of Mr. George Moir, which, after an illness of five weeks, occurred last Wednesday at his home in this city, Toronto has lost one of its best-known contractors. Mr. Moir, who was in his sixty-fourth year, built several prominent city structures, among them being McMaster University, Broadway Tabernacle, St. Paul's Anglican Church, Bloor Street Presbyterian and the Toronto Club building. The deceased was born in Scotland, but has been a resident of Toronto since 1870. He was active in Masonic circles and was a member of Erskine Presbyterian Church. He is survived by a widow, two sons and two daughters.

Messrs. Sanderson & Porter, consulting engineers, 52 William street, New York, announce that Mr. Wynn Meredith has been admitted as a member of the firm, and will take charge of their Western office, Union Trust Building, San Francisco.