bars running diagonally across the gutter, the back edge of each bar being ¼ of an inch lower than the front edge of the grate. This makes a saw-tooth surface that slows down the velocity of the water and diverts it partially through the gully opening and partially down through the grate. This grate clogs with paper, leaves, sticks, etc., as do all other grates; but even though clogged, it still in most cases diverts the water toward the gully opening. Three complete rounds of the catch basins are made by the cleaning gang each year, but some basins do not need to be cleaned oftener than once in two years, while others require cleaning five to eight times a year. During 1915, 1,279 basins were cleaned, an average of 2¼ cubic yards being removed from each basin. As it was stated that the total capacity of each basin was 2¼ cubic yards, it would appear that no basin is cleaned until it is full and probably overflowing. An investigation of the operation of cleaning during May and June, 1915, showed that the teams spend 45 per cent. of the total time hauling the material. As the location of available dumps recedes from the centre of the city as the latter builds up, the length of haul is increasing, and this time will continue to increase unless some more rapid method of transportation is adopted.

Concerning gutter grates, W. L. Vennard, city engineer of Lynn, Mass., said: "Basins as sometimes built without throats, do not take the water efficiently. The grate, at the beginning of a rainstorm, becomes covered with leaves and paper or other debris and the water passes over, while those that have the throat permit the water to enter through it and the swirl of water entering generally tends to keep the grate clearer from debris than when there is no throat." In Lynn the D grates are supplemented by a throat cut in the curb-stone. The basins are cleaned through the D grate in the gutter, there being no opening in the sidewalk.

ENGINEERS' CLUB, TORONTO, WILL MAKE ALTERATIONS—RESULT OF VOTE RE NEW CLUB QUARTERS.

The annual club dinner of the Engineers' Club of Toronto was held last Friday night, when between seventy and eighty members were present.

The result of the voting regarding new club quarters was announced.

One hundred and ten votes were cast for proposal No. 1, which was to move to the "World" Building. Twenty four votes were cast for proposition No. 2, that is, to stay in present quarters, not making any alterations. Proposal No. 3 secured five votes, while No. 4 received 118 votes. Under the plan the club will secure an additional 4,200 square feet of floor space, accommodation will be provided for five billiard tables as against three at present; the dining-room will also accommodate about 30 more members.

The total vote in favor of staying at the present address but with the changes made which will more adequately serve the purposes of the club, was 147 as against 119 in favor of moving.

The daily per capita consumption of water at Duluth, Minn., in 1916 was 81.86 gals. The cost of supplying the water, figured on operation, maintenance, depreciation and interest on bonds, was $86.31 per 1,000,000 gals.

COST ACCOUNTING FOR THE CONTRACTOR AND ITS RELATION TO HIS ORGANIZATION.*

By Leslie H. Allen.

A SYSTEM of cost accounting to be of any value to a contractor must be used. Its data must be accessible to and understood by everyone in his organization who has anything to do with costs. It is valueless if it is kept a secret.

A proper system of cost accounting may be likened to an expensive tool or machine—of great value when working, but an unjustifiable expense if kept idle most of the time.

Costs are Not Trade Secrets.—The contractor who thinks that his unit costs are a trade secret and that the circulation of information regarding his costs will do him an irreparable injury is making a great mistake. If his costs are higher than his competitors' they will lose business if they use them. If they are lower they will lose money if they use them. It is efficiency and not cost data that makes for low costs. The cost data simply point the way to efficiency and show the failures to reach it. For this reason my firm has not hesitated to make public its costs at any time. We feel that if we make lower costs than our competitors it is because we have the men and brains needed to do it. Others cannot equal our costs simply because they know them. On the other hand, if our costs are higher than they should be no one gets from their publication any valuable information that can give them an advantage over us.

Intelligent General Interest in Costs.—Very many contractors have the labor costs distributed by a time-keeper and worked up in his spare time by the book-keeper, and the results are only seen by the boss. Neither man understands his work or can show any enthusiasm for it. The opposite of this is the case on our work, and it is sometimes quite embarrassing to the writer to be called upon to adjudicate in cases where knotty points are being discussed with great earnestness by our timekeepers and foremen, such as whether repairing forms damaged by the strippers should be charged to stripping, erecting, or making—or what to do with the saw filer. The fact that such interest is shown in minor points indicates a real interest in efficient work and low costs all down the line.

It is the purpose of this paper to show how use is made of the data furnished by a cost accounting system in the organization and supervision of the jobs and the carrying on of the general business of the contractor, and to demonstrate the vital necessity of up-to-date information on costs to the various departments of his organization.

The contractor's problem in any system of cost accounting is not to so conceal the costs that no one but the boss can get them or understand them, but to make them accessible to and understood by the greatest possible number of people in his organization. The more people he can educate to understand cost analysis in his organization, the more intelligently and sensibly is his work going to be handled. Not only this, but it is very desirable that the architect or engineer should have some idea as to the costs of the work being done by the contractor under his direction.

Immediate Value of Cuts.—There occur to my mind many incidents on our own construction work where the

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