

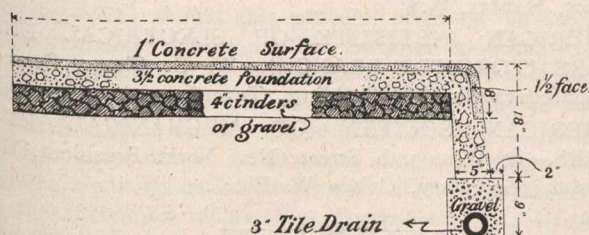
A Page of Costs

ACTUAL, ESTIMATED, AND CONTRACTED.

CONCRETE SIDEWALKS.

Plank sidewalks have been almost entirely discontinued. Brick, as a substitute, has not been a success. Concrete does not make an ideal walk, but, for want of a better, thousands of feet are laid yearly.

We give herewith the actual cost of material and labor as expended in the construction of two sections of walk



Cross Section

One section, a four-foot walk with curb, and the other a five-foot walk with curb.—

Five Feet with Six-Inch Curb.

The lineal measurement of this section was 625 feet.

The cost was:—

For Material—

60 cu. yds. cinders at 85 cents per cu. yd.....	\$ 51 00
79 cu. yds. screened gravel at \$1.50 per cu. yd.....	118 50
24 cu. yds. sand at \$1 per cu. yd.....	24 00
9 cu. yds. pea gravel at \$1 per cu. yd.....	9 00
3 tons crushed granite at \$3.50 per ton.....	10 50
87 barrels cement at \$1.75 per barrel.....	152 25
Water	2 61
Tile, 625 at two cents each.....	12 50
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	\$380 36

For Labor—

One foreman—six days at \$3.50 per day.....	\$ 21 00
One head layer—four days at \$2.75 per day.....	11 00
One assistant layer—four days at \$2.50 per day.....	10 00
Seven laborers—six days at \$1.80 per day.....	75 60
Three teams, hauling away excavated material, two days at \$4.50	27 00
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	\$144 60

Total cost—Material	\$380 36
Labor	144 60

625 lineal feet cost	\$524 96
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Or 82.99 cents per running foot.

A second walk, four feet wide, with curb, and 455 feet long, cost as follows:—

For Material—

30 cu. yds. screened gravel at \$1.50.....	\$ 45 00
18 cu. yds. sand at 85 cents.....	15 30
24 cu. yds. cinders at 75 cents.....	18 00
8 cu. yds. pit gravel for filling at \$1.....	8 00
6 cu. yds. pea gravel at \$1.50 per cu. yd.....	9 00
52 barrels cement at \$1.70 per barrel.....	88 40
Tile—455 at two cents each.....	9 10
Water	2 08
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	\$194 88

Labor—

One foreman—five days at \$3.50 per day.....	\$17 50
One head layer—three days at \$3.....	9 00
One assistant layer—three days at \$2.50.....	7 50
8 laborers—five days at \$2.....	80 00
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	\$114 00

Total cost—Material	\$194 88
Labor	114 00

455 lineal feet cost	\$308 88
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Or 70 cents per running foot.

COST OF PRECISE LEVELLING.

In connection with the Georgian Bay Ship Canal surveys the Department of Public Works found it necessary to run a line of precise levels from the United States coast and geodetic bench mark at Rouses' Point, N.Y., to the mouth of the French River. Altogether 935.9 miles of precise levels were run, costing \$29,648.91, or \$31.36 per mile.

Compared with extensive precise levelling in other countries this rate per mile is high, but is accounted for because of the climatic conditions, which were unfavorable throughout the whole period of field work.

COST OF SURVEYS.

Sometime ago we gave the cost of outline surveys on Dominion Government survey party work. In the Iowa "Engineer" Mr. J. C. Cleghorn concludes an article on "Reconnaissance of Irrigation System at Crow, Montana," with some figures as to cost of surveys.

The first party ran a fly level line from Toluca up to the Big Horn canon to determine at what elevation a canal should be started to get over the divide to Fly Creek. It was found that a diversion dam 150 feet high must be used to get a sufficient elevation. The fall of ten feet per mile in the river prevented getting the elevation by diversion higher up in the canon.

This work consisted of a level line, which aggregated about 100 miles at a cost of \$10 per mile. The Big Horn High Line consisted of a level line on the falling contour tied in by a transit stadia traverse and followed by the plane table, taking sheets on a scale of 200 feet to one inch. This line was 92.8 miles long, and was followed by the Peritsa Lateral, 32 miles long. The two cost \$31.97 per mile for the level and transit lines. There were 92 plane table sheets made of the Big Horn High Line at a cost of \$20.87 per sheet and about that per mile. The party was composed as follows:—

Salary.

Chief of party	\$133 33	per month and board.
Transitman	75 00	" " "
Levelman	60 00	" " "
Rodman	45 00	" " "
Rodman	45 00	" " "
Rodman	45 00	" " "
Chainman	40 00	" " "
Flagman	40 00	" " "
Cook	55 00	" " "
Teamster	45 00	" " "

The party ran a careful survey in the manner described. The chief of party was sometimes instrumentman, the transitman ran the table most of the time, and the levelman ran the level one day and transit the next. The first few miles were rough and on steep side hill, but beyond that the country was gently sloping.

The Fort Custer line was run a distance of forty-five miles at a cost of \$22.53 per mile. This line is much nearer water than the other two; hence the drives to and from work were shorter.

Another party was put on special detail topographic sheets at the Big Horn dam site, the Fort Custer diversion site, at the Toluca Cut and at the Huntley Bluffs. This party did the careful topographic work on a scale of 100 feet to one inch, and was composed as follows:—

Chief of party at.....	\$116 00	per month and board.
Station assistant	45 00	" " "
Rodman	40 00	" " "
Rodman	40 00	" " "
Cook	50 00	" " "
Teamster	40 00	" " "