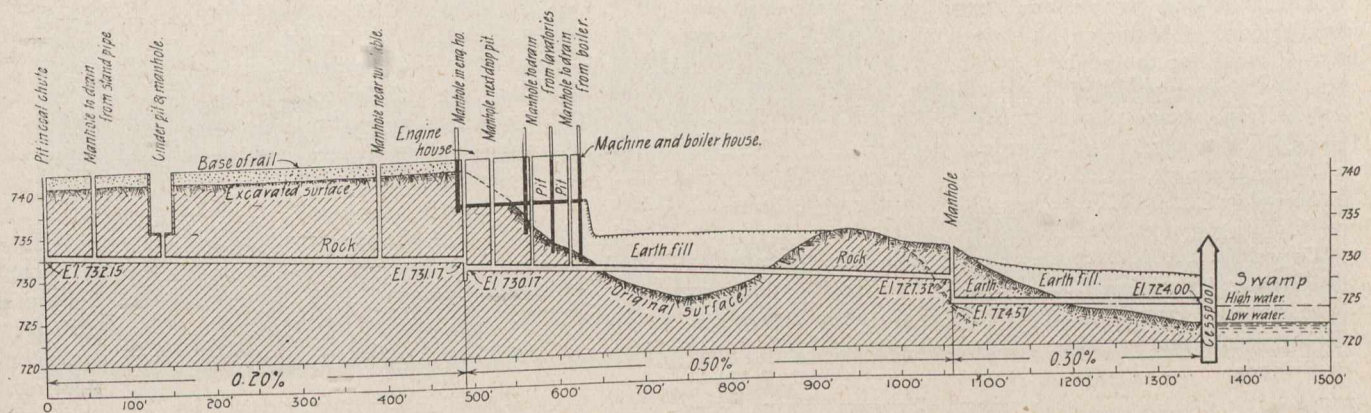


A PAGE OF COSTS

ACTUAL, ESTIMATED and CONTRACTED

COST OF SEWER, MUSKOKA, ONT.

In September, 1908, the Canadian Pacific Railway opened their Toronto-Sudbury line. This line, two hundred and sixty miles long, runs from Toronto in a northerly direction, leaving the Owen Sound branch at Bolton Junction, it passes to the west side of Lake Simcoe and crosses the G.T.R. Collingwood branch on the level at Utopia; the Penetang branch on the level near Coldwell Junction and the Midland branch on the level east of Coldwater. The line continues north, west of Muskoka Lakes, crossing over-head the G.T.R. (Canada Atlantic Division) near Parry Sound, and joining the main line of the C.P.R. at Romford Junction, a station seven miles west of Sudbury.



At Muskoka, one hundred and thirty-one miles north of Toronto, is situated the only division point on this line. At present it consists of a railway division yard, a small village of a dozen houses, railway station, round-house, machine shop, coal chute, etc., and a railway-owned-and-operated electric light plant and waterworks system.

In 1907 this district was uninhabited forest, and when the new townsite was laid out under Mr. F. S. Darling, M. Can. Soc. C.E. Division Engineer, in charge of construction, the first work to follow the grading was the construction of a sewer.

Surveys showed that the most suitable sewer to build would average ten feet deep through some seven hundred feet of Laurentian granite.

The work of digging the sewer was ordered to go ahead in the middle of July, 1907, and as the erection of necessary buildings for the yards could not be proceeded with until the sewer was completed, because of the blasting, the work was opened up in four places at once and four gangs kept busy until the work was nearly completed.

Continued dry weather made it possible to work to grade at the upper end of the sewer before the lower end was open so that work was commenced simultaneously at stations 0, 6, 8 + 50 and 11 + 50 at the same time.

The material from station 8 + 50 to 11 + 50 was wasted between stations 11 + 50 and 15 + 50, and from station 8 + 50 to 7, thus making this haul very short but the material from station 0 to station 6 had to be hauled about 1,500 feet i.e., to the south end of the yards.

This material was broken by dynamite in the trench,

mucked into skips and hoisted by horse-derricks upon horse-cars which ran on 30-pound rails.

The profile will show fairly well that there was about 550 feet of sewer 9 feet deep in granite rock and 350 feet about averaging 4 feet deep with a stripping of 2 feet of earth.

A close measurement of the work gave the following quantities:

Common excavation	950 cu. yds.
Loose rock	30 cu. yds.
Solid rock	1,850 cu. yds.

From the following calculations the common excavation and loose rock are eliminated as the cost of that work was kept separate.

The complete cost for 1,850 cubic yards of solid rock was as follows:

Superintending—	Per cu. yd.
Walking boss, at 60c. per hour.....	\$222.45 or 12.0c
Clerk and timekeeper, at 37½c per hour	158.60 or 8.5c
Foreman, at 45c per hour	608.15 or 32.8c

Total for superintending per cu. yd..... 53.3c

Labor—Mucking, loading, hauling and dumping—

Laborers, at 20c per hour.....	\$2,877.00 or \$1.555
Teamsters, at 21c per hour.....	499.70 or .270
Teams, at 40c per hour.....	1,010.60 or .545
Cars, at 5c per hour.....	117.00 or .063
Carts, at 5c per hour.....	65.50 or .035
Derricks and power, at 15c per hour	175.50 or .095
Handy men, at 27½c per hour...	125.15 or .067

Total for labor per cu. yd..... \$2.630

Drilling rock—

Foot drilling, at 30c per ft.....	\$1,245.00 or 0.673
Sharpening drills, at 27½c per hour.	250.80 or .135
Nippers, at 17½c per hour.....	382.20 or .206
Coal, at \$10 per ton.....	29.00 or .157

For drilling per cu. yd..... \$1.171

Explosives—

Electric fuses	\$ 95.95
Caps and fuses	23.20