

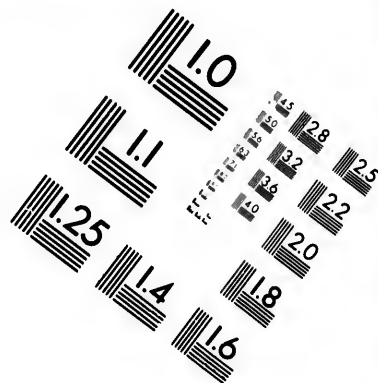
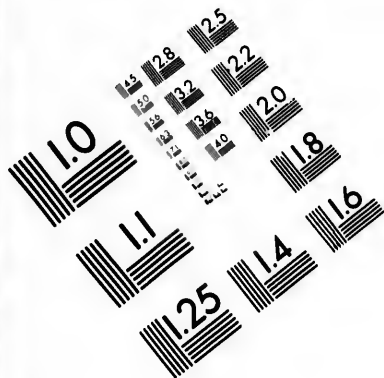
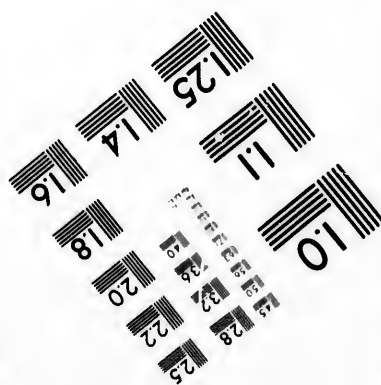
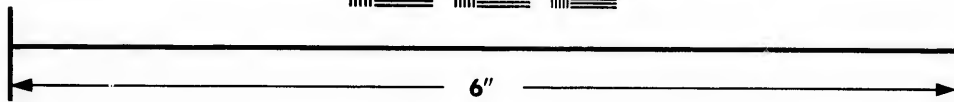
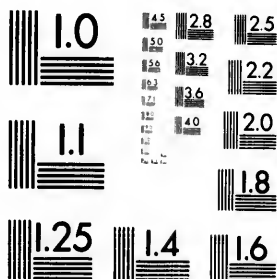


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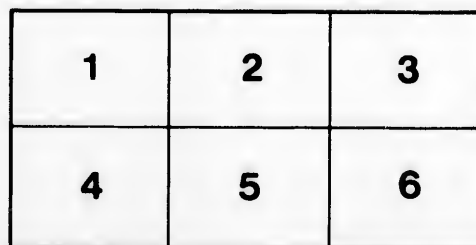
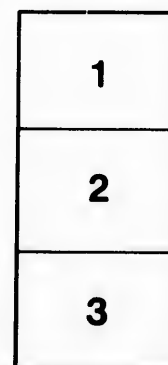
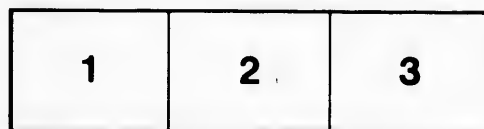
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THE COST

—OF THE—

Nakusp and Slocan Railway

AS SWORN TO BY ENGINEERS.

And compared with the Cost of Other Railways.

A Return brought down to the House on the 27th of March, 1894, in reference to the construction of the Nakusp & Slocan Railway, contained the sworn statements of those immediately connected with the enterprise.

TENDERS.

In speaking of the tenders received, Mr. A. J. Weaver-Bridgman, Secretary-Treasurer of the Nakusp & Slocan Railway Co., makes affidavit:

"The only tender received complying with the form was that of Mr. D. McGillivray, which was for all the bonds of the Company and contained a marked cheque for \$112,000.

"Three other tenders were opened, one for \$20,000 per mile in bonds and \$5,000 in paid up stock of the Company, one for \$25,000 in bonds and \$4,000 in paid up stock; and one for \$20,000 in bonds per mile, one of which complied with the form of tender issued, or were accompanied by either cheque or deposit, and which consequently could not receive consideration. The last mentioned tender was immediately withdrawn after receipt."

MR. DUCHESNAY'S ESTIMATE.

Mr. Duchesnay, civil engineer, appointed by the C. P. R. to examine the line and report on the cost, states as follows in his affidavit:

"My estimate for the several sections of the line was as follows:—

"From Nakusp to Summit Lake, 12 miles
of \$14,517..... \$178,221
"From Summit Lake to head of Slocan
Lake, 11 miles of \$17.68..... 109,648
"From head Slocan Lake to Wilson Creek,
15 1/2 miles of \$14,424..... 78,434
"From Wilson Creek to Three Forks, 8 1/2
miles of \$21,720..... 203,620
"Mean average 38 miles..... \$278,221
15,216

"This estimate was exclusive of all rolling stock, equipment, and plant whatever.

"This was the estimate which I communicated to Mr. Abbott, and in preparing the same I went upon the assumption, from the source of my instructions, that the Canadian Pacific Railway Company proposed themselves to liquid the road as they had done in the case of the Columbia and Kootenay Railway, of which I had been the Engineer in charge of construction. The above estimate (as mentioned in a telegram from Mr. Abbott to Mr. Van Horne on the 3rd July, 1893,) did not make any allowance for contingencies or omissions, and I then considered, as I now do, that a margin of 15 per cent. should be allowed to cover any omissions in my estimate and all accidents and contingencies, and I concurred in the telegram so sent.

"My final estimate, therefore, assuming that the Company themselves would construct the line, is:—

"15 per cent..... \$278,221
\$41,733
\$319,954
"And the average per mile..... 17.097

"The above estimate makes no allowance for ordinary contractor's profit, nor for the

cost of railway transportation of rails, material and labour, nor the use of rolling stock, tools, and materials, which would have to be defrayed by a constructing company; the Canadian Pacific Railway Company, in constructing a road themselves, finding their own railway transportation and using their own rolling stock, tools, plant and materials, for which the work is only charged at construction rates."

And again:—

"We inspected the grading over the portion then built as far as Slocan Lake, and found the work decidedly well done, and, as I consider, fully up to the standard required by the specifications of the Dominion Government when inspecting for the purpose of paying the usual subsidy."

And further:—

"The general gradients and curvature of the line as located are, I consider, the best the country will permit."

MR. MARPOLE'S STATEMENT.

In the sworn statement of Mr. Marpole, Superintendent of the Pacific Division of the C. P. R., are the following:—

"We found the work of construction, so far as it had progressed, to be well done, and such as would be, in our opinion, acceptable to the Canadian Pacific Railway Company for operation, and up to the standard required by the Dominion Government regulations for a subsidized road in a mineral country. So far as inspected the gradients and curvature are, in my opinion, not excessive, and are the best the country will allow within reasonable limits of expenditure in construction.

"I am familiar with the estimate made by Mr. Duchesnay, and in my opinion the total cost as placed by him at \$664,954 was a moderate estimate even under the favorable conditions which he mentions as influencing him in its preparation.

"I submit, for the purpose of comparison, the relative cost of the Mission Branch of the Canadian Pacific Railway and of the Columbia Kootenay Railway, both of which were constructed by the Canadian Pacific Railway, and under the immediate supervision of the Company's Engineers.

"Attached hereto and marked "A" is a statement of the cost of the mission branch of the Canadian Pacific Railway, which shows the total cost to have been \$236,157.15, exclusive of the bridge across the Fraser River, and the average cost per mile, \$23,615.72; and also attached hereto and marked "B" is a similar statement of the cost of the Columbia and Kootenay Railway, showing the total cost of that railway to have been \$588,913.11, exclusive of the bridge across the Kootenay River, and the average cost per mile, \$21,183.92.

"The work of construction on the Mission Branch of the Canadian Pacific Railway and on the Columbia and Kootenay Railway was heavier than on the Nakusp and Slocan Railway, and the smaller amount of the estimate for construction was also due to the fact that at the

time of construction of the former railways the cost of labor and supplies was higher than it was estimated it would be at the time of the construction of the Nakusp and Slocan Railway; but, even making allowance for these conditions, the estimate of \$17,497 as its probable cost to the Canadian Pacific Railway, in light of the facilities mentioned in Mr. Duchesnay's declaration, is low.

"The rolling stock and equipment which will be placed upon the Nakusp and Slocan Railway when completed will be transferred from the main line of the Canadian Pacific Railway, and will be of the same standard as is now in use on other branches operated by the Company.

"The rails supplied by the Canadian Pacific Railway Company, to the Nakusp and Slocan Company, in pursuance of the agreement of the 9th August, 1893, are ordinary 56 and 60-pound rails, which are being taken off sections of the main line where we have heavy traffic and where large locomotives are in use for the purpose of being replaced by 72-pound rails, and in this matter the Nakusp and Slocan Railway is being treated in an exactly similar manner to the Mission Branch, the Columbia and Kootenay, and the Arrow Lake Branch."

COST OF THE MISSION BRANCH.

Clearing, grubbing, grading, trestles and bridges, exclusive of the bridge across Fraser River..... \$147,044.15
Track, ballasting, engineering and incidental expenses..... 86,830.41
Right of way..... 8,928.62
Fencing..... 6,062.83
Buildings..... 11,781.29
Total cost of railway ready for traffic, exclusive of bridge across Fraser River, and exclusive of rolling stock..... \$236,157.15

Mileage, 10, equal to a cost of \$23,615.72 per mile, not including rolling stock or the bridge across the Fraser River.

Certified correct.

J. D. TOWNLEY,
Accountant, Pacific Division, C. P. R.

COST OF THE COLUMBIA AND KOOTENAY RAILWAY.

Clearing, grubbing, grading, trestles and bridges, exclusive of the bridge across Kootenay River..... \$138,484.97
Track, ballasting, engineering and incidental expenses..... 220,647.18
Buildings..... 9,707.80
Total cost of the railway ready for traffic, exclusive of the bridge across Kootenay River, and exclusive of rolling stock..... \$368,839.11

Mileage, 27.8, equal to a cost of \$21,083.92 per mile, not including bridge across Kootenay River.

Certified correct.

J. D. TOWNLEY,
Accountant, Pacific Division, C. P. R.

WHAT MR. STEWART SAYS.

Mr. A. F. Stewart, civil engineer, at present in charge of the Arrow Lake branch of the C. P. R., and one of the most careful and experienced railway engineers in Canada, says:

"In the year 1891 I made a general reconnaissance of the country lying between Lower Arrow Lake and Kootenay Lake, under instructions from the Canadian Pacific Railway, and thoroughly explored the country passed through by the line of the Nakusp and Slocan Railway as now located, and in the year 1892 I ran a trial line from Nakusp to Summit Lake.

"I also made an estimate of the cost of a line from Nakusp to Three Forks, which was in excess of the estimate made by Mr. Duchesnay, C.E., with which I am familiar, but this excess is principally due to different specifications. I however, thoroughly agree with the estimate under which Mr. Duchesnay places the total cost at \$664,954, and the average cost per mile at \$17,497, under the favorable conditions which he mentions as influencing him in its preparation."

COST OF RAILWAYS ELSEWHERE.

It will be interesting to note what the cost in excess of the principal railways in Canada was. The Star Almanac for 1894 gives a table showing the cost per mile, both actual and theoretical (estimated), in 1892. Rolling stock, it says, is in most cases included in the cost, but it does not specify. Here it is:

NAME OF RAILWAY.	Actual Cost per Mile.	Theoretical Cost per Mile.
Alberta Railway and Coal Co.	11.428	11.428
Canada Atlantic	13.064	13.064
Canadian Pacific	9.177	9.177
Central Ontario	10.975	10.975
Edmonton and Hudson's Bay	14.331	14.331
Grand Trunk System	10.444	10.444
International Pambroke	10.969	10.969
Nanaimo and North-Western	13.437	13.437
P. and A. Manitoba	11.401	11.401
Quebec Central	11.401	11.401
Prince Edward Island	11.401	11.401
Shore Line	11.401	11.401
South Eastern System	11.401	11.401
Windsor and Niagara	11.401	11.401

COST OF THE WORLD'S RAILWAYS.

Mulhall's Dictionary of Statistics gives the total mileage and cost of construction for Europe and the world, at various dates, as follows:

	EUROPE.		THE WORLD.	
	Miles.	Cost per Mile.	Miles.	Cost per Mile.
1840.....	1,679	£30,000	4,513	£15,800
1850.....	14,405	27,800	23,555	19,800
1860.....	31,985	26,000	66,290	16,300
1870.....	63,300	23,700	128,215	16,400
1880.....	101,720	23,700	228,440	17,000
1888.....	130,000	21,400	344,310	16,100

The same authority for a period between 1887 and 1888 gives the average cost of construction per mile for the United States at £12,500; for Australia, £9,300; and for South Africa, £8,900.

The above figures will give a good general idea of the cost of railway construction, and readers can come to a conclusion as to the legitimate cost of construction in a mountainous country like British Columbia.

