

REPORT OF THE CHIEF ENGINEER.

ENGINEER'S OFFICE,
St. Lawrence and Atlantic Railway,
Montreal, 23rd March, 1852.

SIR,—Complying with instructions from the Board of Directors, I have the honor to submit the following Report on the survey and statements submitted by the Deputation from Stanstead, for a line of Railway from near Lennoxville to the Province Line, and from thence to Island Pond; with a request that the present location of the route by the Valley of the Western Coaticooke should be re-considered, and asserting, that the line recommended by them, will be as favorable in point of gradients, and as easily constructed, as that already located.

Before entering into the details, I beg to state that, the adoption of a line passing through Stanstead, has received my careful attention; and that having been put in possession of such reliable information as was necessary to arrive at correct conclusions, I consider the route objectionable, and inferior to that now located, on account of gradients and increase of distance; and on those grounds I did not recommend any further expenditure of means and time, which would have only added to the already ample data for condemning it.

From the point of divergence common to both lines, the distance by the Stanstead route to the Province Line, as surveyed by Mr. Vining, under Mr. Morton, is $2\frac{1}{2}$ Miles greater than that by the line of the Valley in the Western Coaticooke, from the same point.

From the Province Line to Island Pond, the distance by the route as surveyed by Mr. Westbrooke, under Mr. Morton, and by the survey of the Passumpsic Railway Company, is 5 Miles longer than that by the line following the Valley of the Coaticooke and Phering Rivers; thus making the total increase of distance on the Stanstead route, over that by the Western Coaticooke, $7\frac{1}{2}$ Miles.

The Maximum Gradient, by the Stanstead route, is 60 feet to the Mile for a distance of 11 Miles 1860 feet. The Maximum Grade by the Western Coaticooke Route, is 45 feet to the Mile, for a distance of 11 Miles 2520 feet.

The estimated cost of constructing the Stanstead route, even with 60 feet grades, exceeds that of the Western Coaticooke route.

The Maximum Gradients on the portion of the line located between the Province line and Island Pond, by the Western Coaticooke, is 45 feet per Mile, for a distance of 2 Miles and 40 feet.

The Maximum Gradient of the line from Stanstead to the same point, is not given; but a statement is made, that it will be a continuous rise for the entire distance of about 20 Miles, with light gradients.

These are the facts connected with the two routes referred to, the positive results have been arrived at by accurate surveys.

A Profile of a Survey made over an extent of country of 14 Miles, and 2080 feet at a point of the line, which, according to Mr. Vining's Survey is the most objectionable on account of grades and heavy work, has been laid before the Board of Directors for the purpose of showing that Mr. Vining's line can be improved and grades, not exceeding 45 feet per mile, obtained.

Before entering into the particular merits of the proposed route, I beg to remark that there has never been a doubt in my mind, but that a line with

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