

mouth of the Shawashkong. These bridges would be large but not otherwise expensive. On the whole I consider there would be very little difference either in cost or length between this route and the one I have laid down.

Between the 95th and 110th miles there are several portions of the line of very easy construction—while at the ninety-sixth mile there will be nearly a mile of rather expensive work in the valley of a large stream. There is no difficulty, but as the valley is narrow and rocky there will be either a few sharp curves or heavy cuttings on rocky side hills. The grade up the valley need not be steeper than one in a hundred. About the ninety-ninth mile there will be cutting about thirty feet deep through two narrow ridges, but these ridges are probably all, or nearly all, gravel. Between 101 and 105 miles the line will run by the bases of rocky knoles at some points—but the cuttings will not be heavy—and again at the 108th mile there will be a few rocky spurs to be cut off in the valley of a small stream. There will not be any heavy bridges on the section. I estimate the work to be done at the modified rate for Contract No. 17, namely, \$17,500 per mile.

Between the eighty-fourth and ninety-eighth miles I expect a great deal of ballast, the soil being gravelly and sandy.

Between the 110th and 125th miles more than two-thirds of the work will be very easy, while of the remaining one-third no part will be very difficult or expensive. There are miles of meadows on the section. A few headlands of high ground occur, but they will cause little trouble to avoid them almost altogether. I estimate the cost at the modified rate for Contract No. 1, although I believe the cost will be considerably less, as a great proportion of the section will cost as little as the average for Contract No. 8. There will be two bridges, each with a span of sixty feet, and easily constructed, one on a rock foundation, and the other on a hard foundation, probably rock at a little depth below the bed of the stream. The bridges I estimate at \$10,500 each, and the average cost of the whole section will accordingly be \$10,500 per mile.

Between the 125th and 145th miles the work will be very much of the character of Contract No. 17. The ground is rough, but not difficult, along the north shore of the lake at 126 miles, it is then very easy up to 128 miles through alder flats and beaver meadows—then the line takes side hill on a grade descending one in 100 to 132 miles, after which it passes over moderately rough ground to the 144th mile. The 145 mile is level. There will be one high bridge with two spans of eighty feet at 132 miles, and three others, with spans of sixty feet and low heights, at the 138th, 139th and 141st miles. I estimate the first of these at \$42,000, and the other three at \$21,600. The average of the total cost of the section of twenty miles is accordingly about \$20,700 per mile.

Between the 120th and the 130th miles, I believe the line can be greatly improved by following the straighter line which I have dotted on the map. I have not walked over this line, but I have been on it at what I believe is near a height of land at a little lake abreast of 127th mile, where there is extensive meadow land. And I have seen the lower end of a valley about the 121st mile, which valley runs up in a direction of this lake. If this line should be suitable it will shorten the railway by about a mile, and materially shorten the descending grade at 130 miles, or lessen its rate of fall, as the level of the lake is very much lower than that of the point which it is abreast of at 127 miles.

Of the next twenty miles from the 145th to the 165th, the first five miles are through an easy country, generally flat. At 151 miles there will be a rather heavy cutting across the end of a spur of land, and a long curve. Then for three miles the line is in a valley and comes out on the shore of Trading Lake, at the 155th mile. Then there are two miles of easy work along the shore of the lake and two miles more of rather heavy work. The remainder up to the 165th mile along the Lake of Bays is easy, although at 164 miles there will be a cutting across the neck of a headland that juts out boldly into the lake. There will not be any heavy bridging on this section, ordinary culverts will be sufficient. I estimate the average cost at the modified rate for Contract No. 9, namely, \$15,000 per mile.