

average height of 75 feet. The country through this section, except near Grand Falls and the Tobique is unsettled, but is well timbered with cedar hemlock, spruce, birch, maple and beech, but the spruce has been cut to a considerable extent in the vicinity of the rivers. The land is well adapted for farming and should be well settled when opened up by the Railroad.

The second section, from the mouth of Three Rivers on the Tobique to the summit, a distance of $26\frac{1}{2}$ miles, follows the Wapsakaggan River and its branch, the de Chute. There are no local summits of any consequence on this section, but the main summit, between the St. John and the Miramichi, has to be crossed at an elevation of 1100 feet above the Tobique, but we believe that by following another branch of the de Chute than that on which we ran the line, we can cross the summit at a lower level and reduce the grades, so that they will not exceed 53 feet to the mile.

This will confine the maximum grade of 66 feet to the mile to a total distance of 12 miles between Grand Falls and the Tobique, but my assistants report that they are satisfied that on a careful location the grades can be greatly improved.

The work on this latter section will not be so heavy as on the first section, and the only structure of importance will be that crossing the Tobique River, requiring three spans of 150 feet each, and 600 feet of trestle approach.

This section is well timbered, but except near the head waters of the streams a considerable portion of the white and red pine and spruce has been taken out.

The third section is from the summit down to the Miramichi near Doaktown, a distance of 46 miles. The line follows and crosses the following streams, the Clearwater, Rock Brook, Dungarvan, Bartholomew, and Big Hole Brook, which latter is followed by the Miramichi River. The grades are all descending practically in the one direction, and with the exception of one of 66 feet, are all under 53 feet to the mile, but the only maximum grade, Mr. Cranston, who made this portion of the survey, thinks can be eliminated by following the right branch of the de Chute River, *whereby also a considerable saving of distance will be made.*

The curvature on this section will not exceed 5° or 1146 feet radius.

The work here will be moderately heavy, and the only structures of importance will be two steel viaducts of 250 feet each, 40 feet high, two steel spans of 100 feet each and one of 75 feet.

The Miramichi will require three spans of 160 feet each, with some trestle approach. The land on this section is abundantly timbered, and of good quality.

On the fourth section, from the Miramichi to Berry's Mills, a distance of $69\frac{1}{2}$ miles, the country is level or slightly undulating, except where streams are met with which usually run through deep ravines.

There are no grades on this section exceeding 53 feet to the mile, and the line is usually direct, and the percentage of curvature, which nowhere exceeds 5° will be small. The most important structures are those crossing Cain's Rivers and Mazroll Brook, the former requiring 1500 feet of steel viaduct, and the latter 360 feet about 75 feet high. There are also several smaller streams to be crossed, which will require 2600 feet in all of steel viaduct from 20 to 46 feet high. The rest of the work is not so heavy as on the previous sections.

The country here is partially settled along the principle rivers, and timber abundant, a considerable quantity of spruce still remaining un-cut. Some of the land is of very good quality.

The total length of the line surveyed from Grand Falls, to Berry's Mills was 166 miles, and adding 36 miles from Edmundston to Grand Falls and

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