

The great attention of the Reporter, was naturally directed to examine the comparative heights of the respective passes on the *summit ridge*, taking a range of 4 or 5 miles on either side of a direct course between Port Hope and Peterboro; accordingly a line of Levels, and distances was carried as laid down on the general plan, No. 1, and marked with red dotted lines, which shews that the lowest pass is that marked A., being 445 feet above Ontario; on trial either on east or west of this summit, the ground rises in a regular and uniform proportion, upon the east of the south pass at $3\frac{1}{2}$ miles the rise above Ontario is 507 feet, and six miles on the west, the lowest summit is 640 feet above Ontario, such being the data presented by correct Leveling. The course of Smith's Creek, naturally presented the line required, but on examination it was found to be deficient in some essential points, first, it was crooked, so that the usual curves could not be maintained without crossing and recrossing its Banks by expensive Bridging, &c. 2nd, the banks in most cases were so precipitous that it was objectionable (independent of curves,) because of side cutting, and danger from slides; and farther, after entering into the valley of Smith's Creek, it was found impracticable to leave it until the line reached the level ground north of Dunbar's Mill, and lastly, the difficulty of access to, or egress from, this line, when established.

Not being satisfied with either of the foregoing lines it became necessary to examine if a line on the west of Port Hope Harbour, could not be found, that presented a more favourable surface.

Accordingly, after various re-examinations, the line as laid down with red lines on the Plan, No. 1, unites the requirements of moderate length very easy inclinations, freedom from expensive Works, either in cutting, embankment, or Bridging, and with nearly a level surface throughout its whole extent, so much so (as the section will show) that it would be difficult to find so few obstructions in any plain country, intersected only by ordinary watercourses. It will be observed that the line after passing Rice Lake summit, must of necessity proceed through a hill and dale country, all the main ridges of the country passing the line of Railway at right angles, but even in this division the direct course is only deflected in three points, viz: from northern extremity of Black's Swamp, eastward to Centre House; 2nd round Clay's or Horne's Hill, and from Palmer's Corner to the Town of Peterboro, in a more direct course, than by the present Road. All the curves are of large radius, none being less than 880 yards, the larger curves are laid down at 7920 feet radius.

The maximum Gradients upon the line are one foot of rise in 90 feet in length, but even where these inclinations occur, which are seldom, they are short. The aggregate rise and fall is 1092 feet—rise 754—fall 338 feet.

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