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T A S M A N I A .

H O U S E O F A S S E M B L Y .

T R A M W A Y :

Report on Survey of proposed Tramway from Strahan, Macquarie
Harbour, to Tin Mines at Mount Heemskirk, by Mr. J. C. Climie, C.E.

Laid upon the Table by the Minister of Lands, and ordered by the House to be
printed, August 16, 1882.



*Lands and Works Office,
Hobart, 12th January, 1882.*

SIR,

In accordance with arrangement made at personal interview this day, I have the honor to request that you will be good enough to undertake the complete Engineering Survey of proposed Railway from Macquarie Harbour to Mount Heemskirk, and lay out the same for a 3 feet 6 inch gauge.

Particulars of works to be carried out are enclosed herewith, and they are to be understood to include all information necessary for valuing and letting construction by contract.

Payment will be at the rate of £30 per mile for the completed work, but instalments approximating £20 per mile will be paid from time to time as the work progresses.

I have, &c.

JAMES FINCHAM, *Engineer-in-Chief.*

J. C. CLIMIE, *Esq., C.E., Currie's Hotel, Hobart.*

SURVEY OF PROPOSED RAILWAY FROM MACQUARIE HARBOUR TO MOUNT HEEMSKIRK.

MEMO.

PLAN to be plotted to a scale of 4 chains to an inch, showing divisions of property or claims, with bearings, and names of owners, lessees, or occupiers written thereon, and extending not less than 10 chains on each side of centre line.

Section to be plotted to a horizontal scale of 2 chains to 1 inch, and to a vertical scale of 20 feet to 1 inch. To be graded.

Centre line to be cleared of brush and trees of sufficient width (not less than 8 feet) for the line to be staked out with numbered stakes driven into the ground, and 1 chain apart throughout, and marked with poles with crosses at certain intervals, so as distinctly to mark the centre line, as well as by trenches cut in ground. End of curve to be marked with 3 stakes. Intersection of tangent to be permanently marked.

Levels in feet and decimals to be marked on the section at each stake, showing the depth of cuttings and heights of banks respectively, with the nature of the soil, ascertained by trial holes or borings.

Bench marks not less than every half mile to be clearly cut on trees on side of line and shown in position on plan, with their respective heights above datum.

Both plan and section to be plotted on mounted paper, and to be complete in every respect for the due construction of the line.

Cross sections to be taken on all sloping ground at every chain, to be plotted on sheets of ordinary drawing paper to a scale of one-tenth of an inch to one foot horizontal, and vertical, and to sufficient extent to enable the quantities of excavation in cuttings and banks to be correctly estimated.

Sections at bridges and culverts to be plotted on separate sheets to a scale of a quarter of an inch to a foot, with information given as to foundations and available building material.

SUMMARY of Works to be done in this Engineering Survey.

Line to be selected and staked out.
 Levels to be taken with check levels.
 Bench marks and stakes to be numbered.
 Curves to be distinctly marked by additional stakes, and to be not less than 5 chains radius.
 Section to be graded, with gradients of not less than 1 in 40.
 Land plan showing streams, boundaries, mineral sections, and rivers.
 Working section, with cross sections.
 Information as to description of excavations.

Melbourne, 27th July, 1882.

DEAR SIR,

I HAVE, in accordance with your instructions received in January last, completed the survey of proposed Railway from Mount Heemskirk to Macquarie Harbour, and forward plans and sections of the same. You will observe that there is (2) two miles shown by coloured red line at the Heemskirk end not permanently staked, the weather unfortunately preventing me from finishing this portion of the work. However, I shall return at once to Heemskirk and proceed with the work, as well as the further extension, as requested.

The line shown on the plan by a full red line represents the centre line, and is marked on the ground with pegs driven at every chain, and a stake at each peg about three feet long, numbered, showing the distance in miles and chains.

The curves are distinctly marked by additional stakes at the beginning and end of each curve.

Cross sections have been taken at all parts where necessary.

Bench marks are made at points marked in longitudinal section.

Levels have been checked, and other detailed instructions complied with.

The total length of line from Boat Harbour to Macquarie Harbour is 20 miles 58 chains. From proposed Heemskirk Station to Macquarie Harbour it is 62 chains longer, or 21 miles 40 chains.

The line permanently surveyed commences at Boat Harbour and runs near the sea coast to the Henty River; for about half a mile there is some very good land passed through, the remaining portion is of a quartzose formation; the whole is more or less covered with scrub. The material for ballast at this end of the line is good, but will be expensive.

The line from the little Henty River to the Big Henty River has been kept considerably inland to avoid as much as possible the swampy country and bare sandhills. There is about 2½ miles of very excellent land suitable for cultivation passed through, and good gum timber; the remaining portion is sandy, and a good deal of that swampy land; there is stone for ballast, but hard and expensive.

At both rivers there is good gum timber to be got suitable for bridge buildings.

The line from the Big Henty River to 18 miles 25 chains (Macquarie Plains) is, for the most part, from 1½ to 2 miles inland, and passes through most irregular and difficult country, a continuous jumble of sand ridges and sand hillocks rising from 20 to 170 feet in height, and it is impossible altogether to avoid them. This portion of the survey caused me great delay to thoroughly examine the district in many directions hoping to find the flat country so much spoken of, but I did not find it. The heaviest portion is from 13 miles to 13½ miles, and it may be slightly improved, as shown on the section.

There is no stone or other material suitable for ballast on this portion of the line, neither is there any timber of value for railway purposes; throughout there is ti-tree, manuka, wirewood scrub, and small gums. The land is of little value, excepting the manuka flats, which may be of value if drained. Water is scarce, as may be expected, amongst these sand ridges,—at any elevation more than 60 feet above the sea I found very little even for drinking purposes; and this will be an additional item of cost in construction.

From 18 miles 25 chains to Macquarie Harbour the line passes through open button-grass plains, and is laid out so that there are none of the allotments interfered with.

Easier gradients may be got on approaching the station ground.

I kept the line in its present position to pass through a gravel ridge; but I found that on the whole of the open country there is gravel, which will be of great value for ballast,—indeed, from the Macquarie Plains the whole of the ballast can be got at less cost than by quarrying and breaking on other portions of the line.

You will observe, by referring to the plans and sections, that throughout I have adopted 10 chains radius for curves; and there is no gradient more than 1 in 40 on the line permanently staked out.

The trial section of line to Heemskirk shows one in thirty for forty-four chains, but this can be altered so that Heemskirk station can be reached with a gradient of not more than one in forty in any part. Curves on this portion will be five chains radius.

The line from this point can be extended to the Gap and North Heemskirk, with reasonable gradients and cost, to give easy access to every mine in the neighbourhood. The Orient and Mount Agnew mines can be reached by branching off at any convenient point on the line, shown on plan Number 1. The Montagu and Cumberland, and other mines adjoining, would use the station marked "Heemskirk station" at Boat Harbour road. The main line may be extended, and constructed to be worked by steam power, to benefit every mine in the district of Heemskirk.

The only bridges of any importance are the two over the Henty Rivers and Badger Creek. Timber suitable for their construction is plentiful near the site of these bridges.

In making the estimate of cost I have calculated to construct the works in a substantial manner, and render the whole complete. The amount will include the construction of the high-level line from the Heemskirk station to Macquarie (Swan Basin).

The line shown on the plan from Boat Harbour to a point one mile twenty-two chains I presume need not be constructed, now that a line can be got to the high-level within your limit of instructions, namely, gradients one in forty and curves of five chains radius.

I would mention that since the survey was made from Boat Harbour to the point referred to, namely, one mile twenty-two chains, a good road has been made from the Little Henty River to Boat Harbour, which would give sufficient accommodation to the people of the township of Reminé.

I hope to be in Hobart on the 3rd of August next, and shall be happy to give you any further information.

Yours respectfully,

J. C. CLIMIE.

JAMES FINCHAM, *Esq.*, *Engineer-in-Chief*, Hobart.