

to spend at least, say, £1,000 more on the work, my estimate being £4,238, or, with contingencies, say, £5,000. The work proposed is of as cheap a character compatible with stability as can be erected, except the coal-bunkers, which are of a thoroughly permanent character. In the viaduct and approach round timbers are to be used as piles, mixed birch, totara, cedar, and yellow pine, and rimu and matai for superstructure, which may be either sawn or squared, the piers to be driven at 12ft. centres. The estimate is, to a certain extent approximate, as there were no finished plans for either the viaduct or approach. The structure proposed will last probably eight to ten years, by which time the coalfield will be thoroughly proved, and the company should be able to renew it if it is required.

Between the plans and the report there will be found some discrepancies, first as regards the length of bunkers, which in plan are shown 175ft., while report allows 112ft., the height as shown is also different being in excess of the drawing. Allowance for these discrepancies is made in the estimate.

J. GEO. BLACKETT,

The Engineer-in-Chief, Wellington.

Resident Engineer.

No. 4.

Mr. W. WILLIAMS to the SECRETARY, Marine Department.

SIR,—

Collingwood, 29th May, 1880.

I have carefully taken soundings as you requested me. I cannot find 20ft. of water at low-water spring tides on either side of the Parapara, in less than about 800 yards from high-water mark ordinary tides, until I come to the point at Tukurua (see pencil-mark on plan). At that spot it is 518 yards or thereabouts from high-water mark ordinary tides to 20ft. of water, low-water spring-tides.

I have also sounded off Tomatea, and the only place that 20ft. of water can be obtained in any distance less than half a mile from high-water mark ordinary tides to 20ft. water spring-tides is opposite sections 9 and 10 (see pencil-mark on plan). At that spot the distance is 820 yards or thereabouts from high-water mark ordinary tides to 20ft. of water low-water spring-tides.

I have, &c.,

The Secretary Marine Department, Wellington.

W. WILLIAMS.

P.S.—As Tomatea is not marked on plan I have taken the liberty of writing in pencil.—W. W.

The RESIDENT ENGINEER, Nelson, to the ENGINEER-IN-CHIEF.

(In re *Deep-water Wharf, Collingwood, and Connection of same with Coalfield.*)

(Memorandum.)

Public Works Office, Nelson, 19th June, 1885.

In accordance with your instructions, I have the honour to report as follows on the practicability, &c., of a deep-water wharf, as indicated on tracing from Geological Department, by Dr. Hector.

On examining the line of soundings marked A, which are taken on line of proposed wharf, as indicated by Dr. Hector, it will be seen that it is only at a distance of about 58 chains from high-water mark that 18ft. of water low-water springs can be obtained, and that in about the centre of line a sandbank with only 4ft. water at low-water springs is crossed. In the second line of soundings (B) this bank is again crossed, but the depth on it has increased to 8ft. at low-water springs. On the lines of soundings C and D there are no traces of any bank.

I have therefore chosen as the wharf site a line about midway between the lines B and D. Up to the second line of soundings (B) I am of opinion that the sand is shifting, but, beyond that, it shifts very slowly, if at all. North of the line of soundings marked D the beach between high- and low-water rapidly widens, and I was informed, as it might be expected, that the sandbank increases in width up to the mouth of Pakawau Inlet. No soundings were taken south of the line of soundings marked A. The beach shoals very slowly, and precludes any idea of a deep-water wharf being built anywhere between that point and Collingwood. The length of wharf required to get a depth of 18ft. at end, at low-water springs, is 2,440ft. from high-water mark; this would give an available length of wharf, between the depths of 15ft. and 18ft., of about 350ft. The width of this end should be sufficient to allow a double line of rails and siding for empties. I have allowed 50ft. A length of about 300ft. in centre of wharf should be constructed of same width, to allow empty and full trucks to pass. The rest of the wharf (about 1,790ft.) should be not less than 15ft. wide, to give sufficient stability to the structure, which, owing to the great rise of tide, 14ft. at springs, is much silted up. The floor of the wharf will be about 6ft. above high-water springs.

The prevailing wind is south-west, which generally at this point blows directly off the land, and cannot make any sea. I was at the site during a very bad south-wester, but there was no sea which would cause vessels to leave the wharf. The worst sea is easterly, and during this vessels could not lie alongside the wharf, as the sea has a very long fetch, and will break heavily on beach. The sea would, however, run parallel to wharf itself, and would not, I think, endanger the structure. The bottom, so far as low-water level, is sandy, and this character is, I think, preserved out as far as end of wharf. The wharf would be situated 4 miles 70 chains from nearest point of Collingwood Coal Tramway, about seven and half miles from the foot of incline in Kerr and Russell's mine (this however is not yet worked), and about three miles from a new lease (which is well spoken of) taken up on north of Pakawau Inlet (also at present unworked). It can, therefore, hardly be considered central.

The cost of wharf I estimate as follows: 1,790ft., at £10 per lineal foot, £17,900; 600ft., at £30 per lineal foot, £18,000: total for wharf, £35,900.