

(No. 14.)



1900.

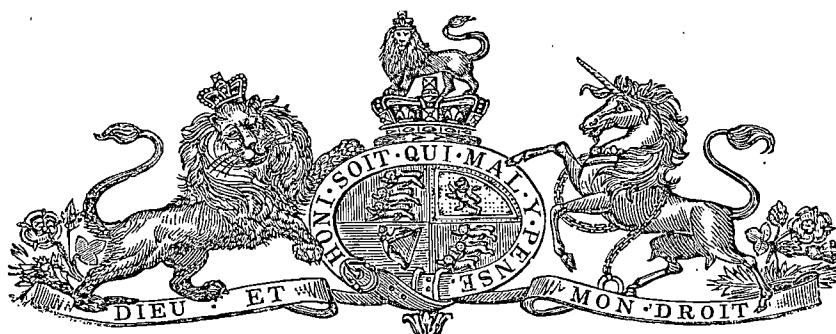
PARLIAMENT OF TASMANIA.

CANAL THROUGH EAST BAY NECK:

REPORT BY C. NAPIER BELL, M. INST. C.E.

Presented to both Houses of Parliament by His Excellency's Command.

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CANAL THROUGH EAST BAY NECK.

REPORT, 7TH FEBRUARY, 1900.

SIR,

THE project for making a canal through East Bay Neck has been discussed for the last 50 years by different people, and one man even offered to make it at his own cost, but the Government would not grant him the right to collect tolls.

The advantages which the canal would confer on the coasting trade of the East Coast are very evident in the distance shortened to reach Hobart, and in the convenience and safety of the inland navigation which would then be possible, and many people expressed the opinion that the tolls collected on ships and boats would pay the interest on the cost of making this canal.

The cutting of this canal would join the inland water system of the Derwent with Blackman's Bay, opening on to the East Coast at Maria Island. Blackman's Bay is a long and wide inlet, which communicates with the sea by an opening about 300 feet wide. The bay is encumbered with sandbanks, but a fairly deep channel is formed, with 14 to 20 feet of water, except at one place, shown on plan herewith, where for half a mile the soundings give only four to five feet. With this exception the channel gradually deepens from East Bay Neck to the neck, where there is over 20 feet of water. I did not go out to sea, but I was told that there is no bar, and that bold water is carried right out to sea. Of course, before any work is undertaken, soundings should be taken from the heads out to sea so as to remove all doubts on this subject. When the shoal shown on the plan was dredged there would be about 12 feet of water at low tide right up to the neck, which would be sufficient water for vessels up to 300 or 400 tons. From Norfolk Bay the navigation is quite open to Hobart.

The range of tides, as ascertained by Mr. Surveyor Chrisp, is about 3·6, but with strong winds it may rise to over four feet on one or the other side of the neck. When Mr. Chrisp's observations were made, high water was found to be about four inches higher in Blackman's Bay than in Norfolk Bay, and low water about nine inches higher in Blackman's Bay; also, high water occurs half an hour sooner in Norfolk Bay. From these observations it seems evident that if the East Bay Neck were cut through there would be at most times a current through the canal, from Blackman's Bay into Norfolk Bay, with a velocity of about three feet a second, or two miles an hour.

There are three sites which are suitable for a canal to be cut through the neck, of which Mr. Chrisp has taken the levels of two, and numbered herein Sections (1) and (2). I consider No. 1 the most suitable, although it is curved, because the cutting would be only 27 feet deep, whereas in No. 2 it would be 40 feet at the deepest. There does not appear to be any rock in either of the two proposed sites, but borings must be taken over both of them to make sure of this. In the cuttings the soil appears to be pipeclay, and out in the bay, on either side, there appears to be two feet of sand and mud overlying pipeclay.

This work, if undertaken, should be let in a contract, the contractor to find his own means of doing it. But for the purpose of making an estimate of cost I have assumed that the neck between high-water mark at either end shall be excavated in the dry with carts or rails and trucks, the water, if any, being pumped out, but between high water, at either end, the entrances to be dredged by bucket-dredge, which also would deepen the channel, as marked in red on plan. The

dredge could be hired for the purpose, and it would take one year to do the work. The excavation in the dry would take more than a year, depending on the number of men and the plant employed.

The present road would need to be diverted for about 32 chains, and a swing-bridge should cross the canal just above high water, near the present jetty. The canal must be placed on both sides, but whether it should have a tow-path or not may be decided when it comes into use.

The water at either end being well sheltered, I do not anticipate that any works will be required to protect the two entrances, and if they should silt up for a while by the wash of the waves it is far cheaper to dredge the silting away than to erect walls or other works to prevent it.

On the Section (No. 1) herewith I have shown the bottom of the canal as 10 feet below the low water of Norfolk Bay, and on the cross section I have shown the bottom width as 22 feet if, for economy, the width should be reduced to 18 feet the saving would be about 18,000 cub. yds.

In the canal the water would be quite still, and as I assume that vessels would pass through slowly there would be no injurious wash; I have therefore not estimated for any pitching of the slopes. If, however, the sides fretted to some extent, dredging is always far cheaper than stone pitching to protect the sides, and as the fretting would only be above high water it would always tend to flatten the slopes, to which there is no objection if it does not go too far.

The cutting through East Bay Neck is a work without risk, and easily done at the price, and when carried out the advantages it will offer to the navigation of the East Coast cannot be doubted.

I have the honour to be,

Sir,

Your obedient Servant,

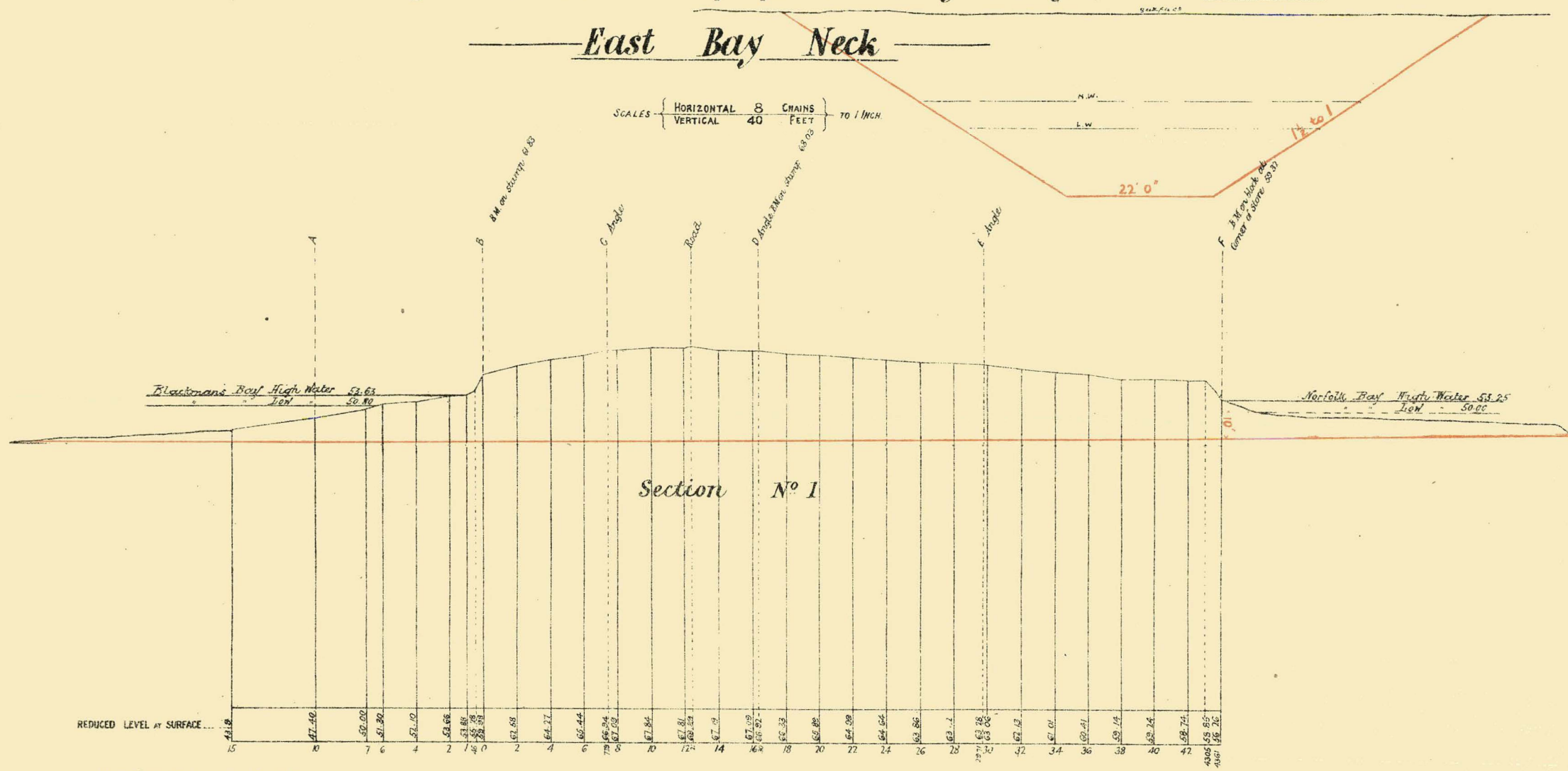
C. NAPIER BELL, *M. Inst. C.E.*

To the Honourable the Minister for Lands.

East Bay Neck

3000. 10. 20

SCALES — { HORIZONTAL 8 CHAINS
VERTICAL 40 FEET } TO 1 INCH.

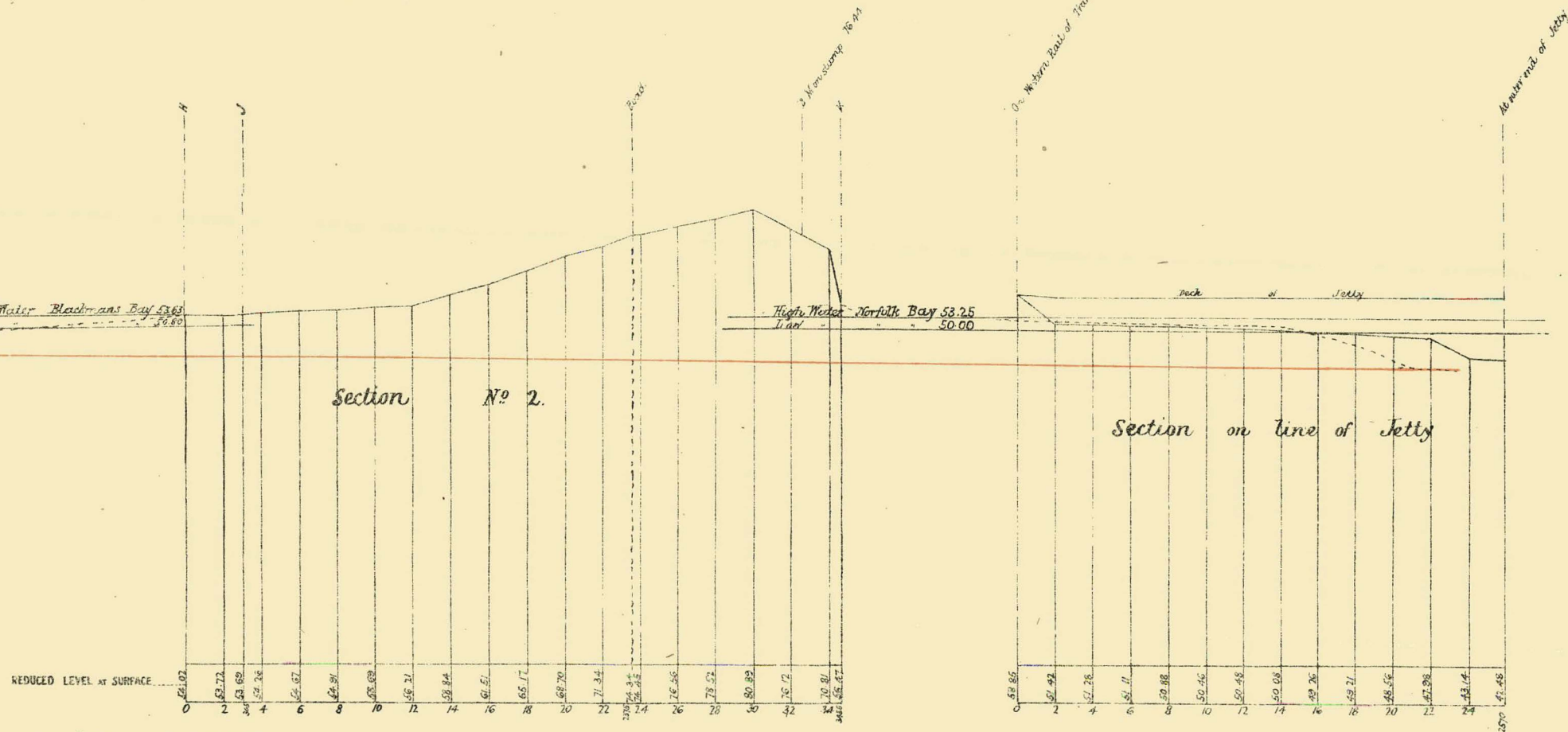


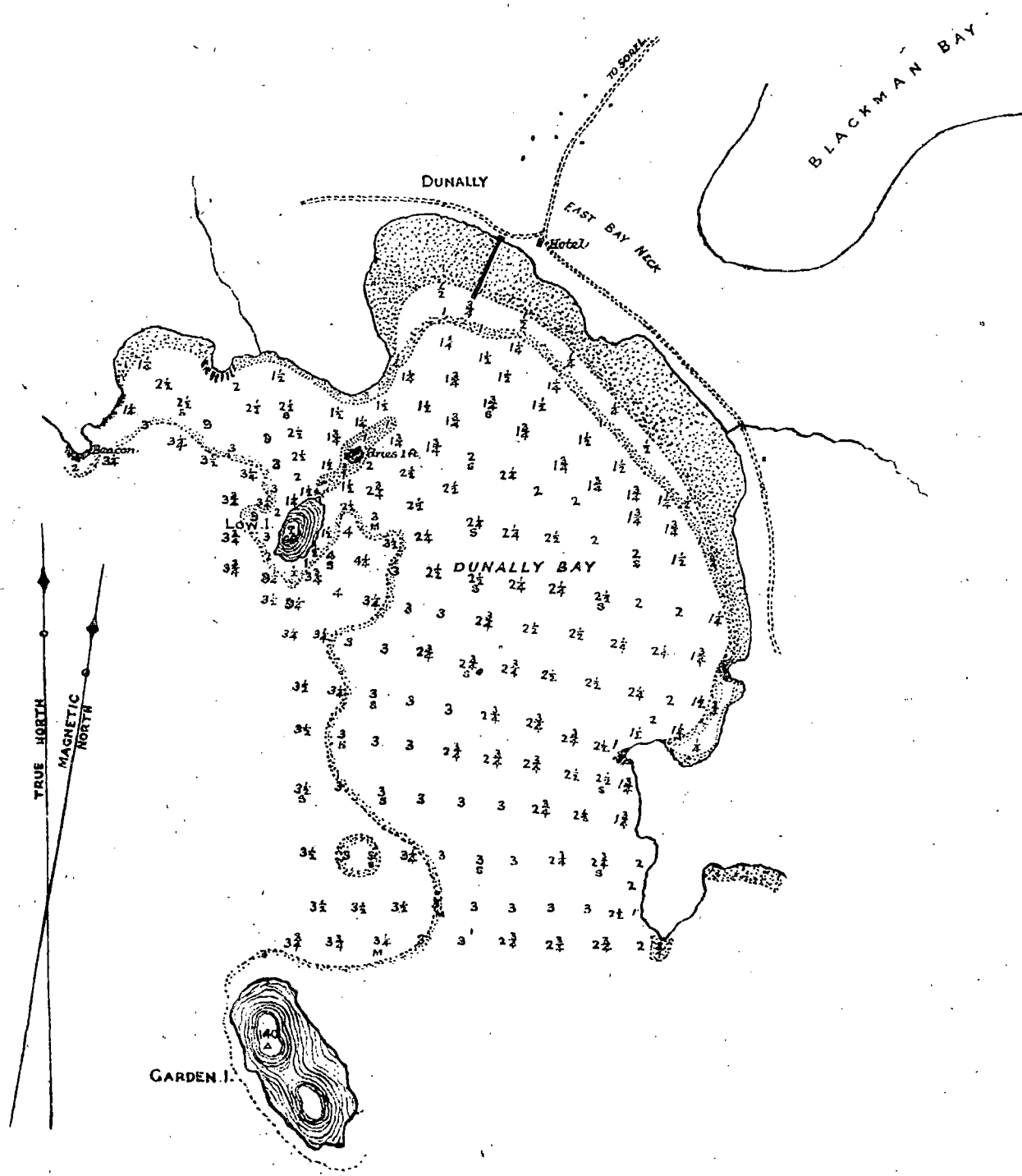
Datum 50 00 feet below low water Norfolk Bay

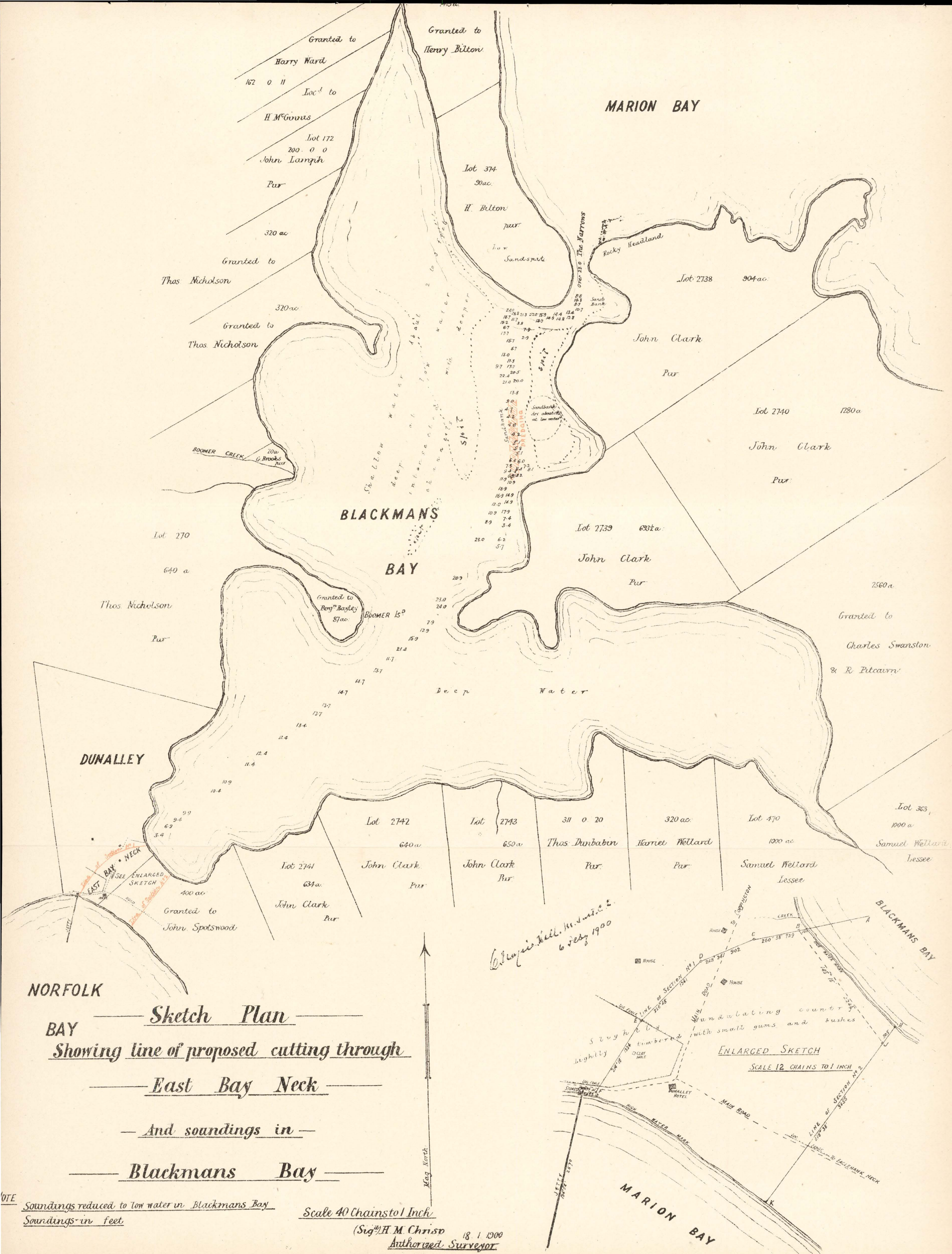
(Sic^o) H M Crisp
18 1 00

— Longitudinal Section of proposed cutting through — — East Bay Neck —

SCALES { HORIZONTAL 8 CHAINS } TO 1 INCH
 { VERTICAL 40 FEET }







NORFOLK

BAY — Sketch Plan —
Showing line of proposed cutting through
East Bay Neck
And soundings in
Blackmans Bay

NOTE Soundings reduced to low water in Blackmans Bay
Soundings in feet

Scale 40 Chains to 1 Inch
(Sig^d) H. M. Christo 18.1.1900
Authorized Surveyor

Clayton Hill, N.S.W. 6 Feb 1900

