M.R.O. 1—20,002—12-8-65.

195-3

(1) Number of Pages 6

(2) Date of repair 8-12-65

(3) Initials of the Referencer MK

MADRAS RECORD OFFICE

GOVERNMENT OF MADRAS

Revenue DEPARTMENT

G.O. No.	195	Press
B.P. No.		Mis.
Dated	31-1-1873	196 .

Not to be folded or roughly handled

195

Proceedings of the Madras Government, Public Works Department, 28th January 1873.

Read the following papers:—

No. 560. From the Superintending Engineer in charge of 4th Division, to the Secretary to Government, Public Works Department, dated Madras, 30th August 1870, No. 2,236.

I HAVE the honour to forward three plans, specification, and estimate, amounting to Rupees 2,87,000, for the extension of the Eastern Coast Canal northwards from Doogarazapatam to Kistnapatam, called for in paragraph 4 of Government Order, No. 2,735, dated 20th August 1869. The plans now submitted show a survey and longitudinal section of the canal, a sketch of the lines of proposed canal which have been selected from time to time by the officers in charge of the navigation, and a drawing of the two masonry bridges proposed to be erected.

3 Plans.
1 Specification.
1 Estimate.

2. In the order above quoted, an estimate, amounting to Rupees 1,88,210, for the portion of canal from Doogarazapatam to the end of the Siddaveram tank beyond the Soornamooky river, a distance of 11¼ miles, was returned in order that the cost of the entire extension of the canal might be incorporated in one estimate. This estimate is now submitted, and it will be seen that the sum total is much below the probable amount* which the canal was expected to cost by the late Executive Engineer in charge, Mr. Fraser.

* Rupees 4,11,606.

3. The cost per yard for the excavation of the canal would, at first sight, appear excessive, but Captain Hasted, R.E., who prepared and submitted the estimate, points out that it is proposed to excavate such a section as will admit of 4½ feet of water below mean tide level, to which depth the canal has been already excavated for the length of nine miles from Doogarazapatam to Siddaveram village by Mr. Fraser. The cost likewise of baling water is a very heavy item to be added to the rate for excavation. I observe also that Mr. Fraser's rates are higher than those allowed for by Captain Hasted, and which he states are the same as those paid for the actual work already carried out. The estimate is prepared on different data for every yard of cutting, and whilst the original rate was 1½, 4, and 6 annas per yard for the first, second, and third yard in depth of cutting, the rate now allowed for the work to be carried out is 1¾, 3¼, and 4 annas per yard. There are two masonry bridges to be built at a cost of Rupees 3,860 each. Though there is no cart traffic near the canal, the villagers require the means of crossing it when the water level is high, in order to carry on their cultivation.

4. The first portion of the estimate allows for the actual cost of the work as carried out, and forms four out of the nine divisions into which it has been divided by Captain Hasted. The section was made so that the side slopes were kept 3 to 1, but owing to the very loose nature of the soil, which consists almost entirely of sand, the banks at this inclination have not withstood the action of the current and local rains. The section for the portion of the canal still to be excavated however will have banks at 2 to 1, owing to the better and firmer nature of the ground to be cut through.

5. The expenditure to date in each year is shown in the margin, and there will be required a sum of Rs. 1,51,000 to complete the work. The expenditure this year is charged to the loan fund of two lakhs.

1868-69	...	...	...	Rs. 6,248
1869-70	...	...	...	,, 64,796
1870-71	...	...	...	,, 35,154
	...	...	...	,, 29,827

G. O., No. 1,802, dated 27th July 1870.

6. As regards the direction already taken and that proposed to be adopted for the line of canal northwards, the navigation from Doogarazapatam to the Soornamooky river is carried through the backwater, and the canal thence turns westwards, in order to reach a swamp which runs between sand hills nearly as far as the Ramperu river. The line of crossing of the Soornamooky river, I understand, was approved of by the late Chief Engineer for Irrigation, Colonel Anderson.

7. From the sketch herewith forwarded it will be seen that the line chosen for the canal is the one selected by Colonel Chambers, and it takes advantage of the deep bed of the swamp and avoids the sacrifice of wet cultivation as much as possible. Mr. Kennedy's proposed line was nearer the sea. This swamp ends near the village of Iskaroyapolliem, where a tidal creek communicates with the Ramperu river. The canal will be dropped into this creek, as a bund at the 93rd mile is thrown across the end of the swamp, the water in which is now kept up for irrigation, and the bed of the creek will be slightly deepened. The river itself is deep and the bar is always open for large dhonies.

8. Captain Hasted proposes that the point B, shown in the survey, should be chosen for the landing place for goods, but that, if necessary, a small branch canal should be cut to the public road. The Local Funds of the district might be made use of for building wharfs, etc. Though a straight line of canal could be made from the swamp to the point selected for the terminus, west of the Collector's bungalow, it is not thought desirable, merely for the purpose of shortening the canal, to do so, when a considerable extent of wet cultivation would be sacrificed and the navigation at the mouth, as Captain Hasted considers, would be found more difficult to keep open.

9. It is not anticipated that the crops will be much affected by the salt water, as the Executive Engineer reports that the surface of the canal will be 2 feet, on an average, below the level of the ground. Catch drains will also be dug outside the spoil banks wherever necessary. In adopting such a plan as that proposed by Captain Hasted, namely, cutting a deep trench through the low lands covered with water, and embanking on each side with side channels to connect the swamp where it is cut through, I am apprehensive that the canal will drain the water now used for the rice fields, or, at any rate, in such portions of it where porous soil is met with. The Executive Engineer, however, does not hold this opinion, and believes there will be no leakage.

10. In the Order of Government, No. 1,619, dated 6th July 1870, it was pointed out that it would be extremely difficult with manual labour alone, and without steam or mechanical appliances, to deepen the *existing* canal to such a depth as to ensure 4½ feet of water below mean sea level, but from Captain Hasted's report, submitting the estimate, it would seem that this depth has been excavated by Mr. Fraser for the nine miles of extension lately carried out under his orders

195/2

Proceedings of the Madras Government, Public Works Department, 28th January 1873.

Though such cutting in the portions under water must be, from the amount of baling, difficult of accomplishment, the Executive Engineer is of opinion that this depth should still be maintained, because when the water in the canal sinks one foot below mean sea level, the largest boats now employed have trouble in the navigation.

No. 561. From the Government of India.

(Here enter No. 145-A. I., dated 29th September 1870.)

No. 562. From the Accountant-General to the Government of Madras through the Revenue Department.

(Here enter No. 255, dated 26th November 1870.)

No. 563. From do. do.

(Here enter No. 926, dated 6th May 1872.)

No. 564. ORDER THEREON, 28th January 1873, No. 274.

CIVIL WORKS, No. 29.

THE project for the extension of the East Coast Canal north of Madras, from Doogarazapatam to Kistnapatam, for which a revised estimate of Rupees 2,87,000 is submitted with the letter above recorded, was commenced in 1868 on an estimate of Rupees 2,35,000, and an expenditure of Rupees 1,36,026 was incurred up to August 1869, when it became necessary to suspend operations. Of that expenditure Rupees 71,044 have been charged to the Canal Funds and Rupees 64,982 to the loan of two lakhs conceded by the Government of India in July 1869. His Excellency the Governor in Council has now determined on completing the work from Provincial Funds, and the submission of the estimates to the Government of India is therefore not required under the Financial Resolution of that Government, dated 14th December 1870, No. 3,334.

2. The rise in prices which has taken place since the original estimate of Rupees 2,35,000 was framed in 1863 would have rendered a much larger excess than is represented by the revised estimate of Rupees 2,87,000 inevitable, had not a change in the direction of the canal, sanctioned at the recommendation of the late Colonel Anderson, rendered a less depth of cutting necessary. His Excellency in Council is satisfied that, looking to the nature of the work and the difficulties under which it is to be carried out, the increased outlay required for the completion of the project is not excessive.

3. As regards the direction in which the extension is to be taken, it is observed that for the first six miles advantage is taken, as always intended, of a natural depression or backwater, and that from the point where this terminates, the canal will make a sweep through the lowest ground till after crossing the Soornamooky river, it strikes into a swampy hollow which, fortunately trending in a favourable

direction, is followed almost up to the point where the tidal estuary of Kistnapatam is reached. By selecting this route the comparatively high ground near the coast, along which it was previously intended to take the canal in order to prevent interference with cultivation and under an impression that more obstruction from excess of water would be experienced in the swamp than in the sand ridge, will be avoided, and the amount of excavation greatly diminished.

4. With a width at bottom of ten yards the canal will be excavated with side slopes of 3 to 1 in sandy soil and 2 to 1 in firmer earth, and, as there is no wheeled and little other traffic to be interrupted by the work, it is proposed to provide for its being crossed by narrow bridges at two points only.

5. His Excellency the Governor in Council sanctions the revised estimate of Rupees 2,87,000, and resolves to direct that the sum of Rupees 39,982, remaining to be refunded on account of the loan, be disbursed, and adjusted later in the year by a transfer of the amount from savings under Provincial. An allotment of Rupees 75,000 will be entered in the Provincial Budget for 1873-74 for the work, and the District Engineer, Chingleput, will make the necessary preliminary arrangements to admit of operations being vigorously carried on during the ensuing year to ensure the whole of the grant being worked up to without fail.

		Rs.
Outlay from Loan	... ...	64,982
Amount already refunded	... ...	25,000
		39,982

(True Extract.)

Colonel, R.E.,
Secretary to Government.

To the District Engineer, Chingleput and Nellore.
,, Accountant-General.
,, Financial Department.
,, Revenue do.
,, Controller of Public Works Accounts.

Sole substituted for the ... letter ... Number ... date

Exd. S. T. Austin.

Revenue Dept

No. 280

Govt. of [1873] Madras.

PUBLIC WORKS.

To

THE DISTRICT ENGINEERS,

CHINGLEPUT & NELLORE.

&c., &c., &c.

Dated January 28th.

Recd. a 30th. Encl.

G. O., 28th January 1873, No. 274.

JANUARY

Nos. 560-564

Extension of the East Coast Canal, north of Madras, from Doogarazapatam to Kistnapatam.—Passing orders on revised estimate of Rupees 2,87,000 for the project.

#495

31st January