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TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

Revenue DEPARTMENT

G.O. No.	<i>805</i>	Press.
B.P. No.		Mis.
Dated	<i>13/2/77</i>	197 .

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*Proceedings of the Madras Government, Public Works Department,
1st February 1877. No. 323.*

Read the following:—

No. 82 W.

No. 30. *Note by the Chief Engineer for Irrigation.*

THE estimates for the Cheyair embankments, referred to in G.O., No. 3,504, of the 20th December 1876, in which order also their immediate commencement was sanctioned, provide for—

1st.—The repair and improvement of the old embankment on the right bank of the river above the Railway bridge, and for its extension. The estimated cost of the proposed work is Rupees 22,316, as follows:—

	Rs.
Earthwork	12,438
Clearing sand	915
Revetment	7,774
Gravel backing	1,169

The length of this embankment is stated in the report to be about 8,422 feet, but it scales 8,854 feet on the longitudinal section, on which the distances marked

are all individual instead of continuous. The cost, therefore, will amount to about 13,300 Rupees a-mile, and there will be some small outlay in addition for head sluices, the designs and estimates for which have not yet been submitted for sanction. The rates for earthwork are high, 1 Anna 11 Pies to 1 Anna 4 Pies a cubic yard. It is presumed that the higher rate has reference to long lead where the surface soil near the flood bank is sand, and unsuited therefore to the work; but the cheapest rate is higher than such simple work, as embankments should under ordinary circumstances cost.

The survey is on too small a scale (4 inches to the mile) to admit of the details of the alignment being looked into. The report exhibits some discrepancy in paragraphs 2 and 5 between the descriptions of the upper terminus.

The undersigned is very doubtful whether the flood bank should be taken across the Agraharam channel at all. It will be somewhat awkward to have flood water coming down the head of that channel, and then turning along the face of the embankment to the river. The channel above the proposed site for a head sluice would be liable to much silting. The proper place for the head sluice of this channel is on the west face of the hill, as near the head as ground or rock above flood level is to be found, and it would be better to re-align part of the channel east of the hill if its left bank be too close to the river to allow of its being turned into a flood bank, rather than to select a faulty line for this portion of the embankment. This point should therefore be further considered, but it may be settled locally.

The undersigned has some doubt as to whether the estimate rates generally are ordinary or special with reference to the prevailing high prices of food, *e.g.*, there are rocky hills all about this part of the river and within a mile of the line of the flood-bank, and yet Rupees 1½ a cubic yard are entered for revetment. With one mile cartage 9 or 12 Annas should suffice.

2ndly.—The restoration of some old and nearly obliterated flood banks and the formation of a complete embankment from the Madras and Cuddapah road, a short

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distance below the railway, on the left bank of the river, to high ground near the head of the Patur channel. The length of this embankment will be 18,400* feet, or 3.48 miles, and the estimated cost is Rupees 30,534 as follows:—

	Rs.
Earthwork	22,528
Clearing sand	1,335
Stone revetment	5,221
Gravel backing	1,477

or Rupees 8,774 a-mile.

The rates for earthwork vary from 1 Anna 11 Pies to 1½ Annas a cubic yard; considerably more than one-half the whole is at the highest rate, and only about 15th at the lowest rate.

It has not been explained why it has been deemed desirable to include in this section of the embankments the length between the railway and the Madras road; and on the longitudinal section the position of the railway and levels of the road and railway have not been shown.

With regard to the alignment of the lower part of this flood bank the undersigned can offer no opinion. Without ground levels on lines transverse to the river it cannot be judged whether higher ground is to be met with within the limits in which the alignment could be fixed; but the presumption is that for the lower half a-mile or so, more favorable ground might be found.

2. To lay out embankments properly the marking of the axis of the river on the survey is necessary, next the fixing of a normal width of river-bed, then the proper distance apart of the embankments should be determined, and, lastly, the actual alignments, with such variations from the proper or normal, as circumstances and the features of the ground may indicate to be desirable or requisite.

3. The full benefit of these embankments, especially as regards the railway, will not be secured until the bed of the river has been regulated by navel plantations or otherwise, and a sufficient, but not excessive, width for ordinary full freshes, with regular curves, thus aligned. The principal currents may then be expected to run tolerably parallel to the axis, and material inequalities in the level of the bed will, if not removed, be reduced considerably. In high floods water will extend over the whole space between the embankments, but even then the presence of a regulated deep channel will beneficially influence the position and direction of the currents.

On the Survey has been noted an approximately proper axis and alignments for the ordinary deep bed; the survey does not extend far enough west to determine the proper axis conclusively.

4. The expenditure which may be incurred on these flood banks will, under the G.O., No. 3,410, 14th December 1876, orders as per margin, have to be charged " " 3,504, 20th " " ultimately to—

- (1) the railway to the extent of the value of the special work rendered unnecessary by these more extended embankments;
- (2) Ordinary Agricultural, River embankments, the value of the work done at normal rates, less the Railway contribution;
- (3) to Famine Relief Work—the balance of the outlay;

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No. 323.*

all expenditure in the first instance being debited to the last head. Separate accounts should be kept for each embankment.

27th January 1877.

(Signed)

JOHN MULLINS, Lt.-Col., R.E.,
Chief Engineer for Irrigation.

To the Secretary to Government, Public Works Department.

No. 31.

ORDER THEREON, 1st February 1877, No. 323.

IRRIGATION, No. 4.
Account.

The following estimates for embankmenting the Cheyair, in the Cuddapah District, are sanctioned provisionally:—

No. 303—I. of 1876-77.	1. Right bank above the railway	Rs. 22,316
	2. Left bank from the Madras road to near head of Patur channel	30,534

Before final sanction is accorded the District Engineer will give attention to the remarks of the Chief Engineer for Irrigation, and he will state whether the rates entered in his estimates are ordinary or abnormal, and if the latter, he will forward revised (separate) abstracts at normal rates. Colonel A. S. Moberly will consider himself authorized to settle modifications of details without further reference.

2. The Consulting Engineer for Railways will ascertain and report what the estimated cost was of the work, which it will now be unnecessary for the Railway Company to carry out, for the protection of their line. Probably information on this point is on record, but if not, an estimate should be made.

3. Debits of expenditure will be made in the manner indicated at the end of the foregoing Note.

4. This sanction has been registered as No. 303—I. of 1876-77.

(True Extract.)

John Mullins

Lieut.-Colonel, R.E.,

Secretary to Government.

To the District Engineer, Cuddapah.

- " Collector of "
- " Consulting Engineer for Railways.
- " Chief Engineer for Irrigation.
- " Examiner of Public Works Accounts
- " Revenue Department.

Exd. S. T. Austin.

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I.T.B.

WORKS.
No 1219

THE DISTRICT ENGINEER,
CUDDAPAH,
&c., &c., &c.

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Dated February 1st.
To
By *10 Febry.* Encl.

G. O., 1st February 1877, No. 388.

INTERVAL.
Dec. 30-31.

To B. P. M. 2/10/72

No 805
*Communicated to the
Board of Revenue*

13 Feb 77

Chygair River in the Cuddapah District.
—The estimates, amounting to Rs. 52,850,
for embanking the —, sanctioned provisionally with remarks.