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MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No. 700 (2) Press
B.P. No. — Mis. >

Dated 18.3. 1876.

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
18th March 1876.*

No. 296. Read the following endorsement of the Chief Engineer for Irrigation, dated Fort St. George, 16th February 1876, No. 210:—

From Major J. BEATTY, R.E., District Engineer, Godavery, to Lieutenant-Colonel J. MULLINS, R.E., Chief Engineer for Irrigation, dated Camp at Dowlaishweram, 3rd January 1876, No. 2,938.

I HAVE the honor to submit an estimate for raising the river embankment of the

1. Longitudinal and cross sections of the river embankment from Rajahmundry Provincial School to the town.
2. Longitudinal section of the river embankment from Rajahmundry to Purushottapatnam.
3. Cross sections of the river embankment from Rajahmundry to $4\frac{1}{2}$ mile.
4. Cross sections of the river embankment from $4\frac{1}{2}$ to $9\frac{1}{2}$ mile.
5. Do. do. from $9\frac{1}{2}$ to $14\frac{1}{2}$ mile.
6. Do. do. from $14\frac{1}{2}$ to $19\frac{1}{2}$ mile.
7. Revised Estimate.
8. Comparative Statement.

Rajahmundry Range to 4 feet above the highest recorded floods. The circumstances under which this estimate has been prepared are similar to those given in my letter, No. 2,752, of 9th December 1875, when submitting the estimate for raising the embankment from Vejaishweram to Polavaram.

2. The estimates already sanctioned and not yet fully worked out are as follow:—

(1.) *Constructing Road from Rajahmundry to Rahitapuram.*—This was for earthwork and masonry only; no gravelling or metalling. The amount of the estimate was Rupees 47,330, and it was sanctioned in G.O., No. 2,133, of 7th September 1872; half the cost was to be met from Local Funds. The allotment for the present year from Imperial Funds was Rupees 13,895, and the expenditure has been Rupees 5,230-6-5; this was merely an adjustment in this year of expenditure previously made from Local Funds in excess of the Local Fund share of the work. The total expenditure up to date against this estimate has been Rupees 23,665 charged to the head Local, and Rupees 15,000-8-7 charged to the head Imperial. There is a balance of this year's allotment of Rupees 8,664-9-7 against which no expenditure has yet been charged.

(2.) *Constructing Road from Rahitapuram to Purushottapatnam.*—The amount of the estimate was Rupees 12,400, and it was sanctioned in G.O., No. 2,356, of 21st August 1874. This also was for earthwork and masonry only, and Rupees 3,470 was to be paid from Local Funds. The allotment of the present year was Rupees 8,900 from Imperial Funds, and the expenditure has been Rupees 8,328-15-6. This was merely an adjustment made in this year of expenditure previously made from Local Funds in excess of the Local Fund share of the work. The total expenditure up to date against this estimate has been Rupees 3,470 under the head Local, and Rupees 8,328-15-6 under the head Imperial. The balance of this year's allotment against which no expenditure has been charged is Rupees 571-0-6.

3. The total balance of allotments under the two estimates against which no expenditure has been charged is therefore $8,664-9-7 + 571-0-6 =$ Rupees 9,235-10-1, which I request that Government will be pleased to transfer to the new estimate now

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submitted. The unexpended balances of the estimates are Rupees 8,664-7-5 and Rupees 601-0-6, making a total of Rupees 9,265-7-11.

4. I have already proceeded with and executed such work as was most urgently required for raising some of the lowest portions of the embankment shown in the sections now submitted. All the work done this year has been done since those sections were prepared, and the expenditure has been kept separate in the progress report, as it will be most convenient to charge it against the new estimate. The expenditure so incurred and shown separately in the progress report amounts to Rupees 7,365-14-0, and I have stopped the work pending receipt of orders on the new estimate.

5. The sections show that the mean height of bank now is about 4.25 feet. I have shown by a yellow line the height to which the sanctioned estimates were intended to raise it, which would have given it a mean height of about 5 feet; i.e., it is now on the average about 9 inches lower than my predecessor proposed to make it. The red line shows the height to which it is now proposed to raise it, and this would give it a mean height of 8.65 feet.

6. The estimate now submitted, which provides for raising to 4 feet above the highest floods, amounts to Rupees 1,25,085, and deducting the amounts of estimates already sanctioned, the balance now requiring sanction is Rupees 65,355.

Should you still consider it advisable to raise the embankment to 6 feet above maximum flood level, I roughly estimate the extra cost at Rupees 50,000 in addition to the amount of the present estimate.

7. As to the share of this extra expenditure to be charged to Local Funds, I think it best to consider what would have been the cost of the earthworks of the road if it had not been constructed on the embankment.

A road made parallel to the embankment, but independently of it, would probably have cost Rupees 3,300 a mile, of which about Rupees 1,100 would have been the cost of gravelling; so that the other items, masonry, earthworks, turfing, and compensation for land, would have come to Rupees 2,200 per mile, or Rupees 41,925 for 19 miles and 1,000 yards, the distance from Rajahmundry to Purushottapatnam; and, as Local Funds have been already charged with Rupees 27,405 on this account, I think that they may fairly be expected to contribute Rupees 14,520 towards the work now proposed.

8. As explained above* there is a sum of Rupees 1,869-12-1 (=9,235-10-1—7,365-14-0) now available from the allotments of the present year for expenditure

* Paragraphs 3 and 4.

on this work as soon as sanctioned, to which I would add Rupees 4,000, as proposed in my letter, No. 2,752, of 9th December 1875, from the allotment of this year for the Polaveram road.

9. In anticipation of sanction being given at an early date to the two revised estimates referred to in the last paragraph, and as the time is short for utilizing the balances of allotments in this official year, I have now authorized the Range Officers to proceed with the works. The statement given on next sheet shows the allotments and expenditure proposed for both roads this year.

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18th March 1876.*

Statement of Allotments and Expenditure on the Polaveram and Purushottapatnam Roads in the present official year.

Name of Work.	Present Allotments.	Proposed revised Allotments.	Outlay up to date in this year.	Outlay proposed in January to March 1876.	Total Outlay proposed this year.
<i>Ellore Range.</i>	RS.	RS.	RS.	RS.	RS.
Polaveram flood bank road ...	I 10,000 L 6,210	I 6,000 L 3,077	3,077	6,000	I *6,000 L +3,077
<i>Rajahmundry Range.</i>					
Rahitapuram flood bank road ...	I 13,895	I 26,795	{ 5,230 +7,366 }	5,870	I 26,795
Purushottapatnam flood bank road.	I 8,900	...	8,329	...	...
Total allotments...	39,005				
Deduct amount surrendered under Local.	3,133				
		Total proposed expenditure ...			35,872
Balance of allotments ...	35,872				

* The balance of Rupees 4,000 to be transferred to the Purushottapatnam road.

† The balance of Rupees 3,133 has been surrendered to Local Funds.

‡ At present charged to Miscellaneous advances but debitable to the revised estimate as soon as sanctioned.

SUBMITTED for the consideration of Government in connection with the orders as per margin in which the estimates for flood banks, combined with a Local Fund road from Rajahmundry to Purushottapatnam, were sanctioned.

2. Those estimates were for two sections, viz. :—

	RS.
Rajahmundry to Rahitapuram ...	47,330
Rahitapuram to Purushottapatnam ...	12,400
	59,730

and the amounts chargeable to the two funds respectively were—

	Agricultural. RS.	Local Fund. RS.
On the larger estimate ...	23,665	23,665
" other " ...	8,930	3,470
	32,595	27,135

3. The recent high fresh in the Godavery having demonstrated that the flood banks as sanctioned would be liable to be breached when most required, and observa-

tions having been made of the flood levels at various points, which indicate that the surface fall of the river as originally calculated was not quite correct, the arrangements have been revised, and it is now proposed to make the top of the flood bank 4 feet above the highest recorded fresh, a margin which may be considered sufficient, but which is not more than enough for safety.

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18th March 1876.*

4. The amount of the revised estimate for the two sections is Rupees 1,25,085 as mentioned in paragraph 6 of the District Engineer's letter, but that given in the comparative statement is Rupees 1,25,108-8-1 which may be taken as Rupees 1,25,110, and the difference between this and the amount already sanctioned is Rupees 65,380. The increase is very large, and it is to be regretted that the investigations as to flood level were not properly carried out in the first instance. No money, however, has been wasted, and the work already done has been executed at from one-ninth to one-eighth less than the sanctioned rates.

5. It will be well that the District Engineer should consider whether it will not be preferable, where the banks will be very high, to place the road behind the bank at a lower level. It seems probable that some expense may thereby be saved, and it would certainly be more advantageous for the road which is a narrow one, 13 feet from outside to outside, not to be on the top of a high bank.

6. The District Engineer, in paragraph 7, suggests the way in which the Local Fund share of the outlay may be calculated, viz., with reference to the cost of an independent road in the same locality which he estimates at Rupees 2,200 a mile exclusive of gravelling, and on this basis the sum to be contributed by Local Funds would be Rupees 41,925 against the Rupees 27,135 already agreed to. Major Beatty should have consulted the Local Fund Board on this subject. The proposal appears to be fair, and it would make the respective contributions.

									RS.
Agricultural	...	...	...	...	...	...	...	...	83,185
Local Funds	...	...	...	...	...	...	...	...	41,925
									Total, 1,25,110

(Signed) A. DEC. SCOTT, Major, R.E.,
for Chief Engineer for Irrigation.

No. 297. ORDER THEREON, 18th March 1876, No. 708.

IRRIGATION, No. 25.
Account.

THE revised estimate of Rupees 1,25,110 for the combined flood bank and road from Rajahmundry to Purushottapatnam on the left bank of the Godavery is sanctioned.

2. It is observed that the very great difference of Rupees 65,380 in excess of the amount, Rupees 59,730, already sanctioned for the two sections of this embankment is due to the levels of river flood on which the previous estimates were based having been found to be considerably under those which subsequent investigations have shown to be correct, and as a consequence a bank giving a margin of 4 feet above maximum recorded flood level will average 8.65 instead of 5 feet in height. It is not satisfactory that so considerable an error should have occurred.

3. The District Engineer will give consideration to the remark in paragraph 5 of the Chief Engineer's endorsement regarding the best position for the road which is in connection with the flood bank.

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18th March 1876.*

4. The proposal for dividing the cost of the embankment between Agricultural and Local Funds will be referred to the Financial Department, the District Engineer having omitted to consult the Local Fund Board.

5. The utilization of the grants for the current year for the embankments on both sides of the river, in the manner shown in the statement appended to the District Engineer's letter, is approved.

6. The sanction accorded in paragraph 1 has been registered as Irrigation No. 55 I. of 1875-76.

(True Extract.)

(Signed) G. W. WALKER, Major-General, R.E.,
Secretary to Government.

To the District Engineer, Godavery.
.. Chief Engineer for Irrigation.
.. Examiner of Public Works Accounts.
.. Financial Department.
.. Coll. Godavery.

Exd. W. J. Lewis.
Spare Copies

Enclor. 9.

N: 1286 - 14 May/72
 " 2133 - 7 Sept/72
 " 2356 - 21 Aug/74

Submitted for the consideration of Government in connection with the orders as per margin in which the estimates for flood banks, combined with a local fund road, from Rajahmundry to Rushakottapuram were sanctioned.

2. Three estimates were for 2 sections viz
 Rajahmundry to Rushakottapuram Rs. 47,330
 Rushakottapuram to Rushakottapuram " 12,400
 Total Rs. 59,730

and the amounts chargeable to the two funds respectively were

	Agricultural	Local Fund
on the larger estimate	23,665	23,665
other	8,930	3,470
Total	32,595	27,135

July 1875

3. The recent high fresh in the Godavari having demonstrated that the flood banks as sanctioned would be liable to be breached when most required and observations having been

been made of the flood levels at various points which indicate that the surface fall of the river as originally calculated was not quite correct, the arrangements have been revised and it is now proposed to make the top of the flood bank 4 feet above the highest recorded fresh a margin which may be considered sufficient, but which is more than enough for safety.

4. The amount of the revised estimate for the two sections is Rupees 125,085 as mentioned in para 6 of the District Engineer's letter, but that given in the comparative statement is Rupees 125,100-2-1 which may be taken as Rupees 125,110 and the difference between this and the amount already sanctioned is Rupees 65,380. The increase is very large and it is to be regretted that the investigations as to flood level were not properly carried out in the first instance. No money, however, has been wasted, and the work already done has been executed

8
executed at from $\frac{1}{7}$ to $\frac{1}{5}$ less than the sanctioned rates.

5. It will be well that the District Engineer should consider whether it will not be preferable, where the banks will be very high, to place the road behind the bank at a lower level. It seems probable that some expense may thereby be saved and it would certainly be more advantageous for the road which is a narrow one - 13 feet from outside to outside not to be on the top of a high bank.

6. The District Engineer, in para 7, suggests the way in which the Local Fund share of the outlay may be calculated, viz, with reference to the cost of an independent road in the same locality which he estimates at Rupees 2200 a mile exclusive of gravelling, and on this basis the sum to be contributed by Local Funds would be Rs 4,925 against the Rupees 27,135 already agreed to.

Major

Agricultural ———— \$3,100
Local Funds ———— 41,925
Total 1,25,110

Larkin House
 16th February 1876
 For Chief Engineer for Irrigation

Pro 18th March 76 B.W. 296

Comp. V.B.

[Faint handwritten notes, possibly bleed-through from the reverse side.]

4821st Oct/67 N 3264
 .. 11th June/72 .. 1286.
 .. 7th Sept .. 2133.
 .. 21st Aug/74 .. 2356.
 .. 6th Aug/75 .. 2280.
 .. 10th Sept .. 2611
 .. 15th Jan/76 .. 94.

P.W. 1896 Sept.

No. 1890

From

The Chief Engr.
for Irrigation

Dated 16 Feb:
 Recd. 14 March } 1896
 E. G. No 210

Submitting letter
 of Mr. St. Engr. P. S. S. S.
 on the subject of
 raising the river embankment in do. V
 Kung, with remarks.

No 708 Public Works Dept.

Proceedings of the Madras Government
 Under date the 18th March 1896.
 Read the following

From

The Chief Engr. for
Irrigation

{ B.E. No 210 d/10th Feb 1896.

The revised estimate
 of Rupees 1,25,110 for
 the combined flood
 bank and road from
 Rajahmundry to
 Purnihattaputnam
 on the left bank of
 the Godavery is
 sanctioned. -

It is observed
 that the very great
 difference of Rupees
 65,380 in excess of
 the amount Rupees
 59,730 already sanc-
 tioned for the 2 sections
 of

of this embankment is due to the levels of river flood on which the previous estimates were based, having been found to be considerably under those which subsequent investigations have shown to be correct and as a consequence, a bank giving a margin of 4 feet above maximum recorded flood level will average 8.65 instead of 5 feet in height. It is not satisfactory that so considerable an error should have occurred.

2 The District Engineer will give consideration to the remark

8
remark in para 5 of the Chief Engineer's endorsement regarding the best position for the road which is in connection with the flood bank.

2 The proposal for dividing the cost of the embankment between Agricultural and Local Funds will be referred to the Financial Department, the District Engineer having omitted to consult the Local Fund Board.

4 The utilization of the grants for the current year for the embankments on both sides of the river, in the manner shown

in the statement
appended to the
District Engineer's
letter, is approved.-

Amf

Amf

The sanction awarded
in para. 1 has been
registered as ^{negative} No. 551 of
1875-76-

296- 297

Sept. 31. 376

A. E. Goddard. 9
Ch. E. for J. with 968
Ex. P. W. a. Enclosure
Finl. Dept. 7
1876 8. 7. 4

1890

Gobi. of Madras.

PUBLIC WORKS.

To The St Engineer
Godavery

20

20

Dated

Issued

By

For

18 Rupee No. 708

No. 296-297

Combined flood bank & road
from Rajahmundry to Purni
-hattaputnam, Godavery riv

The Revised Estimate of
Rs 125110 for the — — —
— — — — — with remarks.