

(1) Number of pages _____

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(3) Initials of the Referencer _____

MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

G.O. No. 1420 (9)	Press Mis.
Dated 25-4-	1877.

Not to be folded or roughly handled

Read the following papers :—

No. 605. From Colonel A. S. MOBERLY, R.E., District Engineer, Cuddapah, to the Chief Engineer for Irrigation, Public Works Department, dated Cuddapah, 20th March 1877, No. 2,941.

WITH reference to G.O., No. 370, dated 3rd February last, I have the honor to submit for approval and sanction a survey, two sections, report, specification, and abstract estimate, amounting to Rupees 18,070, for constructing from Famine Relief Work an embankment along the right bank of the Paupagnee river extending from the village of Petha Putha to the Madras Railway, and to state that the necessity of work is explained in the report.

No. 174—W.

No. 605-A. *Note by the Chief Engineer for Irrigation.*

IN G.O., No. 370, 3rd February 1877, it is stated, "Paupagnee river embankment is already being carried out." With reference to this the District Engineer says this estimate, &c., are forwarded.

The embankment proposed is from the railway at between the 16th and 17th telegraph post of 175th mile to the existing protective bank near the village of Petha Putha.

The length is 3,440 yards. The top width of bank to be 6 feet with slopes of 2 to 1, and the top level to be (according to longitudinal section) 5 feet above M.F.L.

The plan shows the line for the embankment as nearly direct between its two extreme points, and for most part of its length at a considerable distance (from $\frac{1}{4}$ to $\frac{1}{2}$ mile) from the existing edge of the river, but for about 150 yards it is apparently to be taken as closely as possible to the edge where there has been, and from the plan would appear still to be, severe erosion during floods. It will probably be better to move it at this place back sufficiently to allow for any further cutting back of the river margin likely to occur before that is efficiently protected by nand planting or the set has been diverted from it. The estimate also provides for carrying the Bellary road over the embankment with gradients of 1 in 40. The place where the road crosses is shown on the longitudinal section, but not on the plan. According to the former it is approximately at 1,250 yards from the railway, which distance plotted on the plan comes where the embankment as proposed runs close to the river margin, and there would be no room for the ramp or approach on the river side, which according to the specification and section is to be 580 feet in length. This also points to the necessity for moving the embankment back at this place. The estimate provides for carrying the road over the embankment with gradients of 1 in 40; but 1 in 30 will be sufficiently easy and will save about Rupees 330, thus—

Proceedings of the Madras Government, Public Works Department,
25th April 1877. No. 1,420.

Revised estimate at rates in originals and with same breadths and thicknesses of metalling and gravelling.

Quantity.	Work.	Rate.	Amount.
C. YDS.		RS. A. P.	RS. A. P.
9,605	Earthwork	0 1 2	700 5 10
9,605	Tamping	0 0 3	150 1 3
371	Metalling	2 1 0	765 3 0
49½	Gravelling	1 14 0	92 13 0
	Culvert (say)	...	500 0 0
			2,208 7 1
	Contingencies, 5 per cent.	...	111 8 11
			2,320 0 0
	Original estimate	...	2,650 0 0
	Saving	...	330 0 0

The metalling proposed is only 5 yards wide and 9 inches thick covered by 1 inch of gravel, leaving 1 yard wide along edge of road with unprotected surface, which in high embankment is not wise. The soil in estimate is said to be "loamy and clay," so merely gravelling the unmetalled edges might prevent channelling.

The proposed protective embankment will cross three river channels for which it is said plans for head sluices are being prepared, in the meantime Rupees 5,600 are entered as their probable cost; the positions of the channels are shown on the longitudinal section, but not on the plan.

The length of the embankment will be 1 mile 7 furlongs and 140 yards, and its cost exclusive of head sluices is Rs. 9,820 } exclusive of "Reforming Bellary Road,"
do. inclusive of do. ,, 15,420 } Rs. 2,320,
or Rupees 7,889 a mile.

The chief value of this flood bank will be in preventing danger to the Railway and also to the Madras Irrigation and Canal Company's Canal.

FORT ST. GEORGE,
2nd April 1877.

(Signed) G. T. WALCH,
Ag. Deputy Chief Engr. for Irrigation,
for Chief Engineer for Irrigation.

To the Secretary to Government, Public Works Department.

No. 606. ORDER THEREON, 25th April 1877, No. 1,420.

IRRIGATION, No. 60-A.

The particulars of the Paupagnee embankment, the execution of which as a Railway Famine Relief Work was approved in G.O., 3rd February 1877, No. 370, are given in the foregoing papers, and the estimate is sanctioned as follows :-

Proceedings of the Madras Government, Public Works Department,
25th April 1877. No. 1,420.

Ordinary Agricultural.
River Embankments.
Original Works.
Fund.—Famine Relief.

Paupagnee right embankment above railway.

Amount of Estimate, Rupees 17,740.

The work is being carried out by the Public Works Department with the assistance of the Railway Officers.

2. It is observed that estimates for three head sluices in the line of this embankment have to be submitted, and as without these the flood bank will not be safe, no avoidable delay should be permitted.

3. The remarks of the Chief Engineer for Irrigation with respect to the necessity of setting back the line of embankment in places and with reference to other points should receive attention.

(True Extract.)

(Signed) JOHN MULLINS, Lieut.-Colonel, R.E.,
Joint Secy. to Govt., P.W.D.,
Irrigation Branch.

To the Chief Engineer for Irrigation.
„ Consulting Engineer for Railways.
„ Examiner of Railway Accounts.
„ „ of Public Works Accounts.
„ District Engineer, Cuddapah.
„ Revenue Department.

Erd. T.D. Ryan.
Spare Copies

No 234 Note

5

I prefer the proposed river
embankments to the alternative
measure of strengthening the Railway
bank.

The effect of the proposed
banks parallel to the course of the
river will be to confine the stream,
to increase its current, to clear away
sand banks, and thus to increase
the discharging capacity of the bridge.

They will also tend to keep the direction
of the main current at right angles
to the bridge, an object in every way
desirable.

These points will not be
obtained by strengthening the
Railway bank; although, if effectually
carried out, with stone revetment
where required, this may answer
as

as a protection for the approaches
to the Railway bridge. In my opinion
the other objects aimed at will not
be so efficiently secured by the
strengthening of the Railway bank
as by the construction of parallel
river banks; while in the matter of
cost there will probably be little
difference.

The foregoing remarks
are written solely from a Railway
point of view - The effect of the proposed
river embankments will without doubt
be to protect a considerable area
from floods.

It is of great importance
that the river banks should be well
set back, and it was understood
from the Railway Officers that this
had

had been done. From the note
by the Chief Engineer for Irrigation,
it appears that there is room for
improvement in this respect

Madras
17 April 1877

W. M. M. M.
L. H. R.
J. S. M. M.

P.W.D.

24 APR 77

From

The hon^r Eng^r for W^{ts}.

Dated 17th April 1877

8234

40 25 April 77 102.605

Note by the Chief Engineer for Irrigation
as shown with one of the
plans Encl. O. No. 570, 3rd February 1877
it is stated: "Paupagnee river embank-
ment is already being carried out."
With reference to this the District Engi-
neer says this estimate, &c. are forwarded
for consideration in the same manner.

The embankment proposed is from
the Railway at between the 16 and 17 tele-
graph post of 17.5th mile to the existing
protective bank near the village of
Petha Patha.

The length is 3440 yards. The top
width of bank to be 6' with slopes of 2
to 1, and the top level to be (according to
Longitudinal section) 5 feet above M.F.L.

The Plan shows the line for the
embankment as nearly direct between
its two extreme points, and for most part
of its length at a considerable distance
(from $\frac{1}{4}$ to $\frac{1}{2}$ mile) from the existing edge
of the River, but for about 150 yards it

is apparently to be taken as closely as possible to the edge where there has been, and from the plan would appear still to be, severe erosion during floods. It will probably be better to move it at this place back sufficiently to allow for any further cutting back of the river margin likely to occur before that is efficiently protected by navel planting or the net has been diverted from it. The estimate also provides for carrying the Bellary Road over the embankment with gradients of 1 in 40. The place where the road crosses is shown on the Longitudinal section, but not on the plan. According to the former it is approximately at 1250 yards from the Railway, which distance plotted on the plan comes where the embankment as proposed runs close to the River margin and there would be no room for the ramp or approach on the river side which according to the specification

Specification and section is to be 580 feet in length. This also points to the necessity for moving the embankment back at this place. The estimate provides for carrying the road over the embankment with gradients of 1 in 40, but 1 in 30 will be sufficiently easy and will save about Rupees 330. Thus

Revised Estimate at rates in Originals and with same Breadths and thickness of metalling and gravelling.

Cub yards		Rate	
9605	Earth work	1 2	700 5 10
9605	Tamping	3	150 1 3
371	Metalling	2 1	765 3 2
49 1/2	Gravelling	1 14	92 13
	Culvert (say)		500
			2208 7 1
	Contingencies - 5 percent		111 8 11
			2320
	Original estimate		2650
	Saving Rupees		330

The metalling proposed is only 5 yards wide and 9" thick covered by 1" of gravel, leaving 1 yard wide along edge of road with unprotected surface which in high embankment is not wise. The soil

10-4-1-108, 13, 19

As they say

[illegible]

11

Canoe. —

Swales

Ag. Dy. Chief Engineer for Irrigation
for Chief Engineer for Irrigation.

To The Secretary to Government
P. W. D.

Ph

Amount of Estimate - Purpos 1774₀
The

16

The work is being carried out by the P. W. D. with the assistance of the Railway Officers.-

2 It is observed that estimates for 3 head sluices in the line of this embankment have to be submitted, and as without these the flood bank will not be safe no avoidable delay should be permitted. The remarks of the Chief Engineer for Irrigation should receive attention.-

Intercepted by the Chief Engineer for Irrigation. The time of the day is not known. It is not possible to get the details.

4.7/4

Ch. for Irrig. ✓
C. E. for Rys. ✓
R. Rys. Accts. ✓
P. H. Accts. ✓
D. E. Caddapah ✓
Rev. Dept. ✓

Drpd. 11-5-77

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H. H. ...
...

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...

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Aug 14/77
Cu 77-4-77

18

18
Govt. of 1877 Madras
PUBLIC WORKS.

To The Chief Eng^r for Irrigation

Dated

Issued

Recd.

Encl.

G. O., 25 April 1877, No. 1420

Nos. 505-606
to 500

Pampassee River Embankment,
Cuddalore Dt

The estimate of Rs 17740
for the —, sanctioned
with remarks.

Entd. in Reg^r

Rev 7-4-77