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MADRAS RECORD OFFICE

GOVERNMENT OF MADRAS

Revenue. DEPARTMENT

G.O. No. / B.P. No.	571.	~~Press~~ / Mis.

Dated 23-3-1875. ~~196~~ .

Not to be folded or roughly handled

Proceedings of the Madras Government, Public Works Department,
16th March 1875.

Read the following papers :—

No. 378. From Captain J. PENNYCUICK, R.E., District Engineer, North Arcot, to Lieutenant-Colonel J. MULLINS, R.E., Chief Engineer for Irrigation, dated Vellore, 15th August 1874, No. 1,438.

I HAVE the honor forward, herewith, an estimate, amounting to Rupees 53,000, with plans and sections, for the repairs and improvements required to the Caveripauk tank.

1 Estimate.
1 Set of Plans.

2. Full reports have been made from time to time of the work in progress on this tank, and the operations up to the end of September last were fully described in my letter, No. 2,242, of 11th October 1873, printed with G. O., No. 123 of 19th January 1874.

3. Since the date of the above letter the work done has been mainly confined, as explained in my letter No. 3,247, of 14th January last, printed with G. O., No. 626, of 10th March, to the improvements to the revetment, sectioning and turfing the slopes, and gravelling the top of the bund; the only other work done having been the insertion of the puddle trench and stone drains directed in paragraphs 4 and 5 of your note printed with the same order.

4. The puddle trench has not been of much use, the leakage appearing to go much deeper than the level of the fields in rear, down to which the puddle was carried as directed. As, however, the leakage is entirely under the bund and not through it, and does not affect the stability of the bund in any way, it is of no practical importance; the water which passes out is not even wasted, but used for cultivation.

5. The stone drains so far as they have yet been executed have proved very serviceable; even at the bungalow, where the leakage was worst, the effect of the drains has been great. The saturation of the bund has not been stopped altogether, but it has been very materially reduced, and I must admit that I was mistaken in attaching too little value to these drains.

6. The gravelling of the top of the bund, though an expensive item, will amply repay its cost by preventing percolation.

7. No provision has been made in the estimate for the puddle facing to the bund at the bungalow referred to in paragraph 3 of your note abovementioned, because, under present circumstances, it does not appear necessary, the stone drains having proved so efficient. Moreover, it is exceedingly doubtful when the water will fall low enough to allow this work to be done; last year was quite exceptional in the absence of rain during the south-west monsoon, and even then the toe of the revetment at this part was barely uncovered.

8. The first part of the estimate, for repairs to the bund itself, amounts to Rupees 42,240, out of which Rupees 33,700 has been already expended. In point of fact this part of the estimate is rather an abstract of what has been done than a true estimate.

9. The whole of the puddling, nearly the whole of the earthwork, about two-thirds of the turfing, gravelling, and repacking of revetment, and about one-third

of the stone drains, has already been executed. The clearing of the bund has been well and cheaply done by the Revenue Department, and strict orders have been given by the Collector for the prevention of any future accumulation of undergrowth.

10. The rates entered in the estimate are those which the work has actually cost, and are by no means high considering the nature of the work. Every thing has been done departmentally, under careful supervision.

11. The remaining portion of the estimate, amounting to Rupees 9,360, is for improvements to the masonry works; of this sum Rupees 8,990 is for new heads to the sluices, the nature of the work to be done being sufficiently explained by the plans and estimates.

12. In three of the plans the wing walls are shown as two feet thick at the top; this may with advantage be reduced to a foot and a half, with a corresponding increase to the bottom thickness. The powerful gearing proposed by Mr. Stephens is altogether unnecessary, and very much simpler arrangements will suffice.

13. The cost of these improvements is by no means excessive, considering the inconvenient and unscientific nature of the present arrangements for regulating the discharge. They will be executed departmentally, and of course with due regard to convenience of season and to economy; it is possible that some saving may be made on the rates allowed for these works.

14. The condition of the tank at present is quite satisfactory, and the work done last year has stood perfectly. It has had a very severe trial from the incessant and almost unprecedentedly heavy rains of the last three months, and has been full up to the crest of the calingulah. When I inspected it last, on the 11th instant, the water was 4 feet below this level.

15. I request that the plans and estimate may be returned when no longer required.

No. 199.

No. 378A. *Note by the Chief Engineer for Irrigation.*

THE estimate, amounting to Rupees 53,000, submitted by the District Engineer, North Arcot, for the repair of the Cauveripauk tank, includes the work already done in 1873 and 1874, as already reported to Government, and the expenditure already incurred amounts to Rupees 33,700. The estimate for the tank bund comes to Rupees 42,240, and that for repairs and improvements to the surplus weir and sluices to Rupees 10,760.

2. The critical state and circumstances of this tank have already been fully explained, and all that it appears to be necessary to state further is that the measures taken for its security have been successful, and that it stood well the test

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of the floods of 1874 which, subsequently to the date of the District Engineer's letter, were, from the overflow of the Palar in October 1874, remarkably severe. Though, therefore, a very large outlay has been incurred, it is satisfactory to find that the result has been satisfactory, and that the revenue has not suffered. From the particulars given at the end of the estimate it appears that the—

Ayacut Area is	... Acres	5,672
Do. Assessment	... Rupees	35,385
Average Revenue	... ,,	36,506

and that the previous repairs executed cost Rupees 3,000, which outlay was incurred in 1871.

The breaching of this tank would have occasioned a heavy loss of revenue, and great damage to the tanks below it, so that it was well worthwhile to take the most effective steps to prevent such a calamity.

3. The estimate for the tank bund requires no remarks. All that has been done has been fully considered and reviewed already, and that which remains to be done has been decided to be necessary.

4. As regards the masonry works, the slight alterations to the surplus weirs, estimated to cost Rupees 300, need no notice. The alterations of the heads of six of the sluices are the same in kind as those already carried out many years ago to the other sluices, and they are needed for the better regulation of the water-supply. It has to be noticed, however, that the tunnels of all these sluices are very small, and that much care will need to be taken to prevent any undue opening of the vents of the new heads, otherwise damage to the tunnels may ensue. Captain Pennycuick has remarked that the gearing proposed by Mr. Stephens to be fitted to them is more elaborate than is required, but he has not described that which he proposes to substitute. The motion must be very slow. The shutters should slide on angle irons, the masonry in which these are fitted should be most substantial, the flooring and sides of the vent under the face wall must be of the best cut-stone masonry, the junction of the old and new work must be most carefully effected, and the maximum amount of opening to be allowed at each foot of depth for each sluice should be calculated with reference to the acreage, and a board showing this information should be fixed at each head. The wing walls of some of the sluices are, as shown in the plans, of insufficient thickness at their junction with the face walls. Taking into account that the face walls act as buttresses, the average thickness should not be less than one-fourth of the height. The walls of the Cheri, or second sluice, fulfil this condition. At the Mohoripett, or fourth sluice, the base of the wings should be 6½ instead of 6 feet. The Cherimodoo, or fifth sluice, will do. An additional two feet should be given at the Cheripulla, or sixth sluice, and 3½ feet should be added to the base of the wing of the Moola, or seventh sluice. Hydraulic mortar should be used for all these alterations.

CAMP, GOODOOR, (Signed) JOHN MULLINS, Lieut.-Colonel, R.E.,
18th February 1875. *Chief Engineer for Irrigation.*

Proceedings of the Madras Government, Public Works Department,
16th March 1875.

No. 379. ORDER THEREON, 16th March 1875, No. 730.

IRRIGATION, No. 26.

HIS Excellency the Governor in Council sanctions the estimate, amounting to Rupees 53,000, for the repair of the Cauveripauk tank, and notices that up to August last Rupees 33,700 had been expended, and that the estimate is equivalent to nearly 1½ years average revenue.

2. The requirements of this very important reservoir have been carefully ascertained, and the work hitherto done has been effectively carried out. The remarks in paragraph 3 of the foregoing note will receive the District Engineer's attention in making the necessary alterations to the several sluices.

(True Extract.)

Colonel, R.E.,
Secretary to Government.

To the District Engineer, North Arcot.
,, Chief Engineer for Irrigation.
,, Controller of Public Works Accounts.
,, Revenue Department.

Exd. S. T. Austin.
Spare Copies

No 1053
Revenue Department
Govt. of {1875} Madras.

PUBLIC WORKS.

To

THE DISTRICT ENGINEER,

NORTH ARCOT,

&c., &c., &c.

Dated March 16th.

Recd. —a—23?

Encl.

G. O., 16th March 1875, No. 730.

MARCH.

Nos. 378-379

15 Lots Orders & Connd Letter

Cauveripauk Tank, North Arcot District. —The estimate of Rupees 53,000 for the repair of the — sanctioned, with certain observations.

No 571
Comm.r Lotties
Board of Revenue

23d March 75