

(1) Number of pages 6
(2) Date of repair Apr 1987
(3) Initials of the Referencer long

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

DEPARTMENT

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G.O. No.	712(W)	Press.
B.P. No.	(SC)	Mis.
Dated	16. 3. 1881	198.

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GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

16th March 1881, No. 712 W.

Buildings and Roads.
Civil Works.

Read the following paper:—

No. 45. From W. PARKES, Esq., M. INST., C.E., Engineer-in-Chief, Madras Harbour Works, to the Secretary to Government, Public Works Department, Buildings and Roads, dated Madras, 1st March 1881.

At the suggestion of the Examiner of Public Works Accounts, I have the honor to submit herewith a revised estimate of the Harbour Works in a form that can be more easily compared with the expenditure than the original estimate. The two are shown side by side on the accompanying statement A.

2. As you will observe the total amount is the same within 6,000 rupees as that of the original estimate, but the items which go to make up that amount have been altered so as to be more nearly proportional to the actual expenditure. On each of these items there is up to the present time a saving amounting in the aggregate to upwards of a lakh of rupees independent of "contingencies," and I have every hope this saving will be maintained to the completion of the work, but I do not think it would be desirable at the present stage to submit an estimate of reduced total amount. The estimate as now presented however includes the cost of the proposed additions to the pier heads.

3. I should explain also that no credit is taken for the value of the plant and machinery now on the works. These may probably be valued at about $1\frac{1}{2}$ lakhs of rupees, but whether such an amount be realised will depend of course on the demand. The original estimate however was intended to cover the first cost of these materials.

4. I may take this opportunity of explaining the reasons for some of the differences both in quantity and price between the corresponding items of the two estimates, which will be substantially equivalent to explaining the differences between the original estimate and the rate of expenditure to the present time.

5. The two sub-heads "Preliminary Works" (items 1—7) and "Tools and Plant" (items 15—21) were included in my original estimate in one item "Plant and Preliminaries" for which £80,000 was allowed. This was afterwards divided rather arbitrarily into two sub-heads estimated respectively at Rs. 3,80,000 and 4,20,000 which I have adopted in the accompanying abstract A, so that they may be inserted side by side with the similar sub-heads in the revised estimate. The sums inserted against the several items in the revised estimate are simply the expenditure upon those several items up to the 31st December last except in one case "General Tolls," No. 20, where a further sum of Rs. 6,000 is estimated as liable to be required before the work is completed.

6. My original estimate of £80,000 was for the supply of a sufficient stock of plant for carrying on the work at full speed, and it was intended that the account should be closed when this was accomplished, leaving any future additions to be

charged to the works. I was desirous of closing the account in February 1879 (see report of that date G.O., No. 608 W., of 27th February 1879) in order that for the future the expenditure on the works might be definitely compared with the estimate. Under the direction of the Examiner however the accounts of expenditure were kept upon a different system which involved keeping them all open to a much later stage. I do not offer any opinion on the relative merits of the two systems, but it is clear that an estimate made on one system is not fairly comparable with an account of expenditure on the other.

7. Besides this the apparent cost of most of these items has been materially enhanced by the purchases in England being converted into Indian currency at the depreciated rate, while the estimate was converted at par. In the case of some of the articles purchased also, the prices in England had materially risen from those on which my estimate was based. These facts will, I think, sufficiently explain the reason of an excess of Rs. 9,45,771 over Rs. 8,00,000, which in a great measure is more apparent than real. I should also here mention that the cost of the Goliath crane and other machinery at the south pier block ground which has hitherto been charged to "Contingencies" as having been procured after the account for plant was supposed to be closed is now charged to "Tools and Plant." Some other similar transfers have also been made in accordance with the same principle.

8. Passing now to the rubble stone in surf banks and bases (items 8 and 11), it will be seen that I have added 10,000 tons to the quantity originally estimated for the north pier, and deducted 35,000 tons from that for the south pier. In the original estimate I made a liberal allowance for an excess of stone actually to be used over that calculated from the bare sections, and this has been on the whole more than enough, notwithstanding the greater depth of water in which the heads are now placed. I made the allowance however on a supposition which has not been confirmed by experience. I thought it would sink into the sand, and more so near the shore than in deep water, so I made my greatest allowance for the work first executed. It turned out however that it sunk very little into the sand, so there was at first a large saving in quantity, but the higher bank in deeper water consolidated to an extent I did not anticipate, and to allow for this an extra quantity had to be deposited which more than balanced the saving on the earlier portions of the north pier, and reduced them materially in the case of the south pier.

9. The increase of price from $1\frac{1}{2}$ to 2 rupees is partly due to the fact that, though I made an allowance over the ordinary prices for rubble stone which prevailed in 1873 for the extra cost which is sure to follow a pressing demand for labor, yet that allowance was not sufficient. It is to be remarked that there is no effectual competition for the contracts. A rise of price followed immediately on a public advertisement being issued for tenders in 1878, since which time the only contractors who have command of labor appear to have felt themselves more secure of their monopolies.

10. The steam hopper barges also have been unexpectedly expensive owing to the long periods during which they were unable to work either from being out of repair or obliged to shelter at Cocanada. While they are at work however they deposit the stone at a very cheap rate, and I have no doubt they have served to keep down the price of the deposit from cargo boats.

11. The saving of rather more than a rupee per cubic yard in the cost of the concrete blocks is due to the stone of which they are formed being supplied from Pallavaram at Rs. 2 per ton instead of from Tirutani at Rs. $2\frac{1}{2}$ as estimated. The saving would have been greater, but for the enhancement of the apparent cost of the Portland cement by the state of the exchange.

12. In the cost of setting blocks the estimated rate of Rs. 80 per lineal foot is equivalent to Rs. 3-3-0 per cubic yard, while the actual cost is rather under Rs. 1-9-0, a saving of 40 per cent. This is solely due to the increasing skill and care displayed in the various departments of the work.

13. *Lighthouses.*—In the original estimate £3,000 was allowed for each lighthouse, but this was before any definite design had been considered for the pier heads, and the amount is sufficient to allow of independent submarine foundations. These

will be unnecessary with the widened pier heads now proposed, and the cost of them may therefore be transferred to the estimates for the piers, leaving 20,000 rupees for the superstructures only.

14. *Establishment.*—This was originally estimated at 5 per cent., but during the years 1877 and 1878 first one pier and then the other were so many months without making much progress that the expenditure was reduced without a corresponding reduction in the cost of establishment, which latter consequently rose to 9 per cent. at the end of 1878. In the two following years the greater rate of expenditure reduced it to $6\frac{1}{4}$. As, however, during the later stages the expenditure on works will be reduced before that on establishment can be, the percentage of the latter will again rise, though I hope the allowance of 7 per cent. will leave a surplus.

15. *Contingencies.*—This was originally taken at 10 per cent., but up to 31st December 1880 the charges debited to this head had amounted to little over 3 per cent. on the expenditure on works. The $3\frac{1}{2}$ per cent. now taken on the whole will allow 7 per cent. on the unexpended portion of the estimate for any future contingencies. The only further charge in prospect, however, is for storm water channels from the outlets of the drains to the water's edge amounting to Rs. 5,000.

16. There is indeed one claim now being made which, if substantiated, will make a further charge against the Harbour Works; I allude to the claim of the Madras Railway Company for a payment to cover their alleged loss in the carrying of the stone from Ambatūr. I do not at present offer any opinion on the merits of this claim, but I would remark that, inasmuch as the cost of conveyance was an item which I was obliged to take on the word of the Agent and Manager quite irrespective of my own judgment, a special amendment of the estimate should be made by an order of Government to cover the amount of the claim.

17. Abstract B is a statement of the expenditure to 31st December 1880 compared with the revised estimate, which I hope may be found suitable in form for future monthly statements. In the case of four sub-heads, "General Tools," "Stores," "Contingencies" and "Establishment," I have given the details in separate schedules so as to show particulars of expenditure which should be placed on record, but which, not having corresponding details in the estimate, cannot be conveniently inserted in the body of the statement.

No. 46. ORDER THEREON, 16th March 1881, No. 712 W.

WITH this letter the Engineer-in-Chief, Madras Harbour Works, submits the estimate for the works recast so as to admit of easier comparison with expenditure.

2. The total amount of the estimate as now submitted amounts to Rs. 58,45,165 and includes Rs. 2,00,000 on account of the moorings, but excludes a corresponding sum for extra rubble not now required. It also includes an additional sum of Rs. 10,394 for the pier heads, the amount being transferred from lighthouses under the circumstances explained in paragraph 13 of Mr. Parkes' report. No credit has been taken for recoveries by sale of tools and plant on completion of the works for which they have been procured. A sum of Rs. 1,00,000 may be shown on this account as a deduction from the total amount of the estimate, the full provision under "Tools and Plant" being allowed to stand. This course will admit of the full expenditure on the sub-head, while the recoveries can be checked when the work is finished and the accounts closed.

3. As regards the lump sum provision for lighthouses (Rs. 20,000), and moorings (Rs. 2,00,000), it seems desirable that detailed abstract estimates should be submitted so as to have some record of the kind of work executed as well as the quantity, rate, and cost thereof in the event of future reference becoming necessary.

4. It is noticed that the revised estimate provides Rs. 1,78,806 for contingencies, of which Rs. 1,41,899 would appear from Schedule 2 to have been already expended. A sum of Rs. 79,751 only of this sum, however, is shown as outlay on the protective

works north of the harbour, the probable cost of which as estimated by Mr. Thoro good will be about 1½ lakhs if the revetment is to be proceeded with. This point, well as the claim for compensation by the Madras Railway Company for conveyance of material, will require further special consideration and orders.

5. With these remarks the revised estimate as amended by the deduction of Rs. 1,00,000 on account of sale of tools and plant will be printed for future guidance in the execution and accounts of the works.

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.

To the Engineer-in-Chief, Madras Harbour Works.
„ Superintendent, do. do.
„ Examiner of Public Works Accounts.
„ Marine Department.

Exd. E. C. Shunker.
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BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1881) Madras.
PUBLIC WORKS.

THE ENGINEER-IN-CHIEF,
MADRAS HARBOUR WORKS,

&c., &c., &c.

Dated March, 1881.

Issued

Recd.

Encl.

G. O., 18th March 1881, No. 712 W.

MARCH.

No. 45-48.

Madrass Harbour Works.—Orders on letter
from the Engineer-in-Chief submitting a
revised estimate for the —.