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MADRAS RECORD OFFICE.

Government of Madras.

Public works DEPARTMENT.

G.O. No. 2776.	Press ~~Mis.~~
<i>200-201</i>	
Dated 9 - <i>90</i> _{Sept.} 1867.	

Not to be folded or roughly handled

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Proceedings of the Madras Government, Public Works Department
9th September 1867.

No. 200. Read the following Proceedings of the Madras Government in the
Marine Department:—

Sanctioning the construction of a reservoir and
cistern for the supply of water to the Madras
Pier at a cost of Rupees 4,460, and directing
that the outlay be charged to the Port Fund. } (Here enter 2nd September 1867, No. 224)

No. 201. ORDER THEREON, 9th September 1867, No. 2,776.

LOCAL FUNDS, No. 22.
Civil Works.

Communicated to the Superintend-
ing Engineer of the 4th Division for
information and guidance.

(True Extract.)

(Signed) CHARLES A. ORR, Colonel, R. E.,
Secretary to Government.

To the Superintending Engineer, 4th Division, with one Estimate and two Plans.
" Controller of Public Works Accounts.

Exd. S. T. Augustin.

*Proceedings of the Madras Government, Marine Department,
2nd September 1867.*

No. 1. Read the following letter from the Acting Superintending Engineer, 4th Division, to the Secretary to Government, Public Works Department, Fort Saint George; dated Madras, 17th August 1867, No. 2391.

In Order of the 13th June last, No. 1772, I am ordered to report on the course to be taken for rendering the cistern at Clive's Battery, Madras, available for the purposes for which it was built.

ENCLOSURES.
2 Plans.
1 Estimate.

2. There can be no doubt that the supply of water to the shipping from the end of the Pier, by means of pipes laid on from the cistern, mentioned above, has hitherto proved more or less a failure, and this result has been crowned by the bursting of the upper reservoir, which was lately erected to give an increased head, and consequent pressure, for the purpose of establishing a rapid flow throughout the delivery pipe.

3. I have considered with Captain Goddard, and in communication with the Superintendent of Marine, the best method of remedying the difficulties hitherto experienced. The Executive Engineer has suggested the erection of an entirely new cistern and reservoir at the Pier Head, supplied from the same source as before at Clive's Cistern, but the cistern deriving its head of water, to cause the requisite flow in the pipes, from pecottahs worked on the spot, in place of the upper lift at the Seven-Wells, which hitherto supplied the upper and now ruined cistern at Clive's Battery. With certain modifications in Captain Goddard's plans and estimates, I am of opinion that this is the readiest and most economical plan that can be resorted to.

4. Hitherto, the upper cistern at Clive's Battery was worked at an increased cost of pecottah men, the head of water produced above the highest point of the delivery pipes on the Pier being 13 10 feet. Owing to the distance of this head from the end of the Pier being 2726 feet, and numerous bends (one at right angles nearly) and unevenness of level being encountered, the flow has been hitherto extremely sluggish. If we establish a reservoir at the head of the Pier, it can be filled without difficulty from the cistern at Clive's Battery, which is on a higher level, and we diminish the distance of the source of supply to 1226 feet. It is proposed to erect a cistern to be supplied from this reservoir, with a head of 15.3 above its top, or 14.6 above the delivery pipe.

5. I have found that, independent of the decrease in the number of bends, the length of pipes being 2726 and 1226 feet, and heads 13.10 and 15.3, respectively, the discharge through a three inch pipe will be as 120 to 189, or, in other words, the delivery from the proposed new source of supply will, in a given time, be half as much more. I have not taken into consideration, also, the enormous gain obtained by making the point of departure the Pier abutment, in place of a point at right angles to it, considerably north of the line of Pier.

6. The question now arises as to the size of these reservoirs. Captain Goddard originally intended the main supply to contain 192 tons and the cistern 38 tons of water, but, in deference to the views of the Superintendent of Marine, he reduced the quantities, and consequently the amount of estimate, so as to retain only 100 tons in the reservoir and 10 tons in the cistern.

7. I find that a boat-load amounts to two tons, and, under present circumstances, takes 40 minutes to be supplied. I have calculated that the delivery pipe will discharge 2550 gallons, or 12 tons per hour, so that there will be ample water for the shipping if the head is maintained, the usual average supply required per diem being 26 tons.

8. I have proposed to increase the size of the cistern, so as to contain this supply, and I find that a capacity of 8 feet square and 14 feet in depth, giving the head proposed by Captain Goddard, will be sufficient. Though this is more than that estimated for above, it is considerably less than that originally provided; and the capacity accords with the quantity proposed to be maintained by Mr. Franklin in his letter of the 24th June last.

9. To supply 26 tons of water will require the services of three pecottah men for three hours a day, as they can only lift with one bucket 8 tons per hour. From this it will be seen that the delivery at the end of the Pier would be half as much more, and that the head would not be maintained; but we must allow for the delay which will occur in filling the boats whilst the pecottah men are working, and for the calculations herein shown having been computed for theoretical results only.

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11. With these remarks, I beg to forward the plans and estimate, amounting to Rupees 4460, for the sanction of Government from the Port Funds.

(Signed) J. SHAW STEWART, Major, R. E.,
Under Secy. to Govt., P. W. D.

No. 2.

No. 2. Under the circumstances explained by the Superintending Engineer, 4th Division, the Governor in Council approves and sanctions the construction of a reservoir and cistern for supplying water to the Pier, at an outlay of Rupees (4460) four thousand four hundred and sixty, and directs that the amount be debited to the Port Fund.

P. M. Smith
Acting Chief Secretary.

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 : ton and guidance.

WPA
Box 34 One with one wife
+ two slaves
in Paradise
F. H. Burr.

Exd. J. H. Burns.

10 June 1917

24 1867 Sept^r
Pro: of Govt for Sept^r
No 3378

No: of the Madras Port
Marine Dept^r

Of 2^o } Sept^r 67
Rec 6. }
No 224

Ex: 3.
en 2776 - 9th Sept^r 1867

Sanctioning the
construction of a reservoir
and cistern for the supply
of water to the Madras Port
at a cost of Rs 4400, and
directing that the outlay
be charged to the Port
Fund.

No. 200-201

With an order