

(1) Number of pages 36(2) Date of repair 27-6-62

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

G.O. No.	641	Press Mis.
9-12		
Dated	1-4-	1862.

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
1st April 1862.*

Read the following papers:—

No. 9. From Lieutenant-Colonel W. H. HORSLEY, Chief Engineer, to J. D. SIM, Esq., Secretary to Government, Public Works Department, dated Chepauk, 27th September 1861, No. 5,335:—

SIR,

1 Letter from District Engineer, No. 1,111, dated 16th January 1861, with seven enclosures.
1 Do. from do. No. 1,557, dated 17th April 1860.
1 Do. from do. " 107, " 18th May 1860.
1 Do. from do. " 119, " 22nd May 1860, with two enclosures.
1 Do. from do. " 241, " 27th June 1860, with two enclosures.
1 Do. from do. " 427, " 2nd August 1860.
1 Do. from do. " 939, " 8th December 1860, with one enclosure.
1 Do. from do. " 1,435, " 29th April 1861.
1 Do. from do. " 293, " 14th June 1861, with four enclosures.
1 Do. from do. " 623, " 24th August 1861.
4 Plans.

1. With reference to their Proceedings No. 2,028, dated 24th August 1859, and No. 974, dated 30th April 1861, I have the honor to submit for the consideration and orders of Government the papers as per margin relative to the Madura Town Water Project.

2. In the Deputy Chief Engineer's letter, No. 3,194, dated 27th July 1859, the District Engineer Madura, was requested to furnish a full report on the following points:—

- (1.) The condition of the work.
- (2.) The total expenditure incurred thereon.
- (3.) The work remaining to be done.
- (4.) The amount available for its completion.

3. Instead of replying directly either to this requisition, or to the Proceedings of the Central Office, No. 4,322, dated 27th August 1859, on the order of Government alluded to in paragraph 1, the District Engineer in his letter, No. 1,111, dated 16th January 1860, submitted with his own remarks a report from the Collector on the Local Funds of the District, wherein that Officer noticed the expenditure incurred on, and the slow progress made in the execution of the Madura Town Water project.

4. From the statements submitted with the Collector's letter, it appeared that on the 1st May 1859, there was a balance on hand to the credit of the Local Fund account of Rupees 10,614, made up of the following amounts:—

* Paragraph 4 of Collector's letter.	Rupees 7,726-3-8*—Amount set apart for the completion of the water project.
† Paragraph 6 of do.	Rupees 1,554-5-3†—Amount realized by the sale of decayed trees and avenue loppings.
‡ Paragraph 8 of do.	Rupees 1,333-7-1‡—Balance of Devanum surplus funds.
	<u>Rupees 10,614-0-0.</u>

5. Mr. Clarke brought to notice, in paragraph 5 of his letter, that compensation, at least to the extent of Rupees 3,620, (for which no provision had been made in the estimate) would have to be granted to the owners of the lands taken up on account of the works, and he accordingly recommended that the two sums|| abovementioned, which remained unappropriated, should be reserved to meet this demand.

6. Referring to the slow progress made in the execution of the work, Mr. Clarke, in paragraph 5 of his letter, seemed inclined to attribute this chiefly to the want of efficient and permanent superintendence, and he recommended that every effort should be made to hasten on the work, as the delay in carrying it out, besides being inconvenient to the cultivators, adjacent to whose lands the work passes, would tend to increase its cost, and to produce ill results among the people.

§ Rupees 3,111, entered in paragraph 5 of Collector's letter to Government, No. 1,234, dated 7th November 1859, communicated with Proceedings No. 2,775, dated 29th November 1859.

|| Rupees 1,554-5-3.
Rupees 1,333-7-1.

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7. From the statements enclosed in the District Engineer's letter alluded to above, it appeared that of the original estimate, Rupees 25,605-9-0, sanctioned for the work, a sum of Rupees 20,400 had been already laid out, exclusive of the value of materials made over by the Collector. The value of the work actually performed was stated at Rupees 16,522-14-7, or Rupees 3,877-1-5 below the amount advanced. It further appeared that the revised estimate prepared by the late Captain Scott amounted to Rupees 38,431-9-1; but that the District Engineer, Captain Ryves, calculated the cost of the work at Rupees 39,922-14-7.

8. The causes of the excess anticipated over the original estimate were stated as follows by the District Engineer:—

- (1.) The inadequate sum allowed for earthwork.
- (2.) The omission to provide for turfing the side slopes of the embankment.

9. With reference to the excess on account of earthwork, Captain Ryves stated that the rate entered in the original estimate was only 6 Pice per cubic yard, and that this sum was far too little for the kind of work to be done, viz., heavy embankment and conveyance of earth from distances varying from 50 to 100 feet, besides raising it from 6 to 20 feet. The amount of excess expected under this head was stated at Rupees 6,309.

10. As regards the turfing the District Engineer considered that it would cost Rupees 4,938-10-11, but if only the interior slopes of the side banks which are to retain the water in the channel at top of the embankment were to be turfed, his opinion was that this amount would be reduced to Rupees 1,133, and the estimate to Rupees 36,117-3-8 or Rupees 7,511-10-8 in excess of the sum sanctioned.

11. In paragraph 6 of his letter, Captain Ryves reported that the work was at a stand still, having been stopped since the commencement of 1859 owing to the want of funds and to the dishonesty of the Contractors, who, after receiving advances in excess of the value of the work performed by them, endeavored to evade their agreements.

12. Upon the receipt of the above reports from the Collector and District Engineer, the late Chief Engineer, Colonel Bell, observing that no notice whatever had been taken of that portion of the Proceedings of Government alluded to in paragraph 1, which required that other objects of the water supply within reach should be particularly reported, requested the early attention of the latter Officer to the subject, and likewise desired that in meeting this requisition he would attend specially to the Collector's letter of the 7th November 1859, communicated by Government to the Central Office in their Order, No. 2,775, dated 29th idem.

13. In reply, Captain Brine, the Acting District Engineer Madura, reported that in his opinion there would not be much difficulty in altering the levels of the Town drains with a view to their being flushed by the water supplied by the project, the only obstacle to the success of the scheme being the limited and uncertain supply of water in the river Vigay. Captain Brine moreover stated that beyond the flushing of the drains, he did not consider any advantage commensurate with the heavy outlay incurred on the work, would be derived.

14. At the same time, the Acting District Engineer brought to notice that the embankment was far from complete, that the completed portions were, owing to the rains, in a very dilapidated condition, and that to repair the same a large outlay would be required. He also suggested, with reference to the necessity which existed for taking down the arch of the Aqueduct crossing road No. 4 to admit of bandies passing through, that an Aqueduct of stout steel iron resting on iron girders should be constructed, and that to afford passage for carts, the roadway underneath should be slightly sunk, and an inverted arch built.

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15. With reference to these suggestions, the Acting District Engineer was informed in Proceedings, No. 1,047, dated 30th May 1860, that in lieu of an Aqueduct the Chief Engineer preferred the plan proposed by Captain Ryves, which was considered quite practicable, viz., to carry the water under the road by a Tunnel, the road being raised in proportion on either side. With a view to the early preparation of an estimate for completing the project on this plan, Captain Brine was requested to entrust the work to Assistant Overseer Pulnevaloo Mudali, who, while on leave at Madras, had received personal instructions from me on the subject, and his attention was at the same time specially called to paragraph 9 of Sir Charles Trevelyan's Minute No. 3, dated 8th February 1860, a copy of which was forwarded for his information.

16. In pursuance of this order, the Acting District Engineer Madura, submitted with his letter, No. 427, dated 2nd August 1860, a plan and estimate amounting to Rupees 13,300 for the completion of the work, which was prepared after measurement of every part of it and personal inspection in company with Assistant Overseer Pulnevaloo Mudali. This estimate provided for the following works:—

- (1.) For the excavation, filling in, &c., of the earthwork from the bed of river to the under Tunnel head.
- (2.) For lowering the vents of the regulating Dam across the Cochaday Channel, the present ones being too high.
- (3.) For two irrigation Sluices.
- (4.) For tamping the earthwork of the embankment.

17. In Extract Proceedings, No. 5,434, dated 2nd October 1860, the plan and estimate were returned to the District Engineer for re-consideration on the following grounds:—

(1.) As the object of the work was to fill the Reservoir in the hay-market to the highest level, with a view to the flushing of the drains of the Town, it was essential that the under-Tunnel in the west Veleya and Marret streets should be capable of withstanding a pressure of $9\frac{1}{2}$ feet of water; but this it appeared quite unequal to from the plan. The thickness allowed for the arch was only $1\frac{1}{2}$ feet, and the depth of gravel provided for only 1 foot, which would give a total weight of 280 lbs. to the square foot, exclusive of that of 200 lbs. equivalent to the resistance of the chunam, to withstand an upward pressure of 593 $\frac{1}{2}$ lbs.

(2nd.) As it would be necessary, with a view to the safety of the under-Tunnel to sink it 8 or 10 feet below the level shown in the section prepared by the District Engineer, it would be exceedingly difficult to repair it when required, or to clear it where choked with deposit. Moreover, as water would probably be found 10 feet below the present level, the cost of construction would be much enhanced, and leakage would take place if the workmanship and materials were not of the best quality.

18. On these grounds, the District Engineer was informed that the plan of an under-Tunnel could not satisfactorily be carried out, and he was therefore requested to submit a plan and estimate of the cost of completing the work as at first proposed, viz., by an Aqueduct.

19. In accordance with these instructions, Captain Paxton, the Acting District Engineer, submitted an estimate amounting to Rupees 17,500, for the completion of the work, observing at the same time that there was "no objection to the Aqueduct being carried over the road, if the roadway were lowered to its old level at the point where it passes under the Aqueduct."

20. As a considerable period of time had elapsed since the receipt of the Collector's report, dated 6th August 1859, on the Local Funds of the District, and with a view to my being in a position to furnish Government with correct information as to the amount available from this and other sources for the execution of the Madura Town Water project, the District Engineer was requested in letter No. 11,158, dated 20th March 1861, to favor me with a report on the following points:—

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(1.) As to the amount then available for the above project from the surplus Pagoda and Local Funds after paying for compensation on account of lands taken up.

(2.) As to the sum actually due by the Contractors, regarding which the statements made by the Officers in charge of the District differed considerably, Captain Ryves giving it as Rupees 3,877, and Captain Brine as Rupees 791-0-5 only.

21. At the same time the District Engineer was requested to submit a specification of the work remaining to be done and provided for in the estimate submitted by Captain Paxton on the 8th December 1860, and he was, moreover, desired to furnish information relative to the amount collected for the improvement of the Town drains, and to state whether any and what work had been done towards carrying out this measure.

22. In reply, Captain Ryves reported that the amount due by the Contractors was Rupees 3,877, and that he was not aware of the circumstances under which Captain Brine considered it necessary to re-measure and re-value the work done by two* of the Contractors, and to reduce the amount outstanding against them from Rupees 2,043-10-9 to Rupees 791-0-5. He, moreover, represented that if such liberal terms of adjustment as the above were allowed to two of the Contractors, similar favor should be extended towards the third, viz., Hoossain Sheriff.

23. As regards the Local Funds of the District, Captain Ryves brought to notice that there were Rupees 7,726 available from that source for the water project, and that out of this, a sum of Rupees 3,111 would have to be paid on account of lands taken up, leaving a balance of Rupees 4,615, to which if the amount, Rupees 3,877, due by Contractors be added, the total sum available would be Rupees 8,492. The work required to be done was roughly estimated by Captain Ryves at Rupees 19,594.

24. With reference to the above the District Engineer was requested to report whether the two sums noted in the margin,* which the Collector, in his report dated 6th August 1859 on the Local Funds of the District, suggested should be appropriated to meet the demand on account of compensation for land taken up for the project, were still available for that purpose, and alluding to his rough estimate of the cost of the work remaining to be done, he was desired to state whether he considered Captain Paxton's estimate of the 8th December insufficient or defective, and if so, to submit a revised estimate for the completion of the project.

25. As regards the re-measurement and re-valuation of the work performed by the Contractors Vencataroyaloo Chetty and Kistna Naick, the District Engineer was informed that the Government, in their Proceedings No. 2,924, dated 15th December 1859, having authorized this Office to allow more liberal terms of adjustment to the Contractors, and Captain Brine, the Acting 1st Assistant in charge, having expressed a wish, with a view of satisfactorily settling the matter, to re-measure and re-value the under Tunnels, the necessary authority was granted to him in Extract Proceedings, No. 12,770, dated 27th April 1860.

26. With reference to the authority thus granted, the District Engineer was informed that Captain Brine in his letter, No. 119, dated 22nd May 1860, reported, 1st, that the line on which the Tunnel had in part been constructed was totally different from that originally estimated for; 2nd, that the latter line was 3,523 feet in length; 3rd, that the amount allowed for it in the estimate was Rupees 10,515-8-0,* exclusive of the value† of 177 cubic yards of old stone which were to be supplied by the Collector; 4th, that the line for the Tunnel which had been adopted was only 2,717 feet in length, for which no separate estimate had been prepared; and 5th, that as the Contractors laid great

Proceedings No. 621, dated 17th May 1861.
Do. No. 3,545, dated 3rd August 1861.

* Rupees 1,554-5-3,
Rupees 1,333-7-1.

* As per agreement furnished by Captain Brine.
† Rupees 1,062.

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stress on this circumstance, and as he was of opinion that in case civil proceedings were instituted against those individuals they would be allowed the benefit of that circumstance, he considered that it would be advisable to assimilate the amount of the estimate and contract as far as possible. Under this view the District Engineer was informed that Captain Brine had valued the work (1,457 running feet) done by the Contractors to the under-Tunnel at Rupees

6,209, or Rupees 791 less than the amount† advanced, and that they had bound themselves either to perform work for this balance within

eight months from the date on which they might be supplied with the necessary sections, or to make good the sum within three months from the date of the order demanding payment.

27. As respects the 3rd Contractor, the District Engineer was informed that if that individual had been similarly situated as the other two, and if the nature of the work stipulated to be performed and the circumstances connected therewith entitled him to the same consideration, he should be allowed the benefit of the Order of Government, No. 2,924, dated 15th December 1859, directing that more liberal terms of adjustment should be allowed. In order to this, Captain Ryves was desired to submit a statement showing the sum outstanding against each Contractor, the amount recommended by himself and Captain Brine to be deducted; the balances due whether the Contractors were prepared to bind themselves to execute work for those balances, and the period within which such work was to be completed. He was, moreover, requested to hasten the submission of the information called for in Extract Proceedings, No. 11,158, dated 20th March 1861, regarding the Town drains, and to forward at the same time a specification of the work remaining to be done.

No. 293, dated 14th June 1861.
No. 623, dated 14th August 1861.

28. In his letters noted in the margin, the District Engineer reports with reference to Extract Proceedings, Nos. 621 and 3,545 quoted

in paragraph 25, that as the two sums mentioned in paragraph 4 were intended to be laid out on repairs to certain District roads, they were not available to meet the demand for compensation on account of land taken up for the water project.

29. As respects the completion of the work, Captain Ryves states that a sum of Rupees 23,000 will be required for that purpose, and he accordingly submits an estimate and specification for that amount, which besides providing for the finishing off of the project on the plan referred to in paragraph 19, allows higher rates for earthwork and a sufficient sum for the repair of the work already executed, which is represented to have considerably deteriorated.

30. The sums due by Contractors and information on other points connected therewith are given below:—

Contractors.	Work contracted for.	Amount outstanding against each.	Amount suggested to be remitted.	Balance remaining to be worked out.	Period within which the balances are to be worked out.
Vencataroyaloo Chetty	Under-Tunnel ...	RS. 2,044	RS. 1,253	RS. 791	8 Months
Kistna Naick ...					
Hoossain Sheriff ...	Aqueduct...	1,726	692	1,033	8 Months.
Petty Contractor ...	10 feet Basin ...	20	20		
Do.	Avenyapooram	87	87		
	Aqueduct...				

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31. It will thus be seen that the balances outstanding against the abovementioned individuals will, by the arrangement proposed, be reduced from Rupees 3,877 to Rupees 1,824, and if to this amount be added the sum of Rupees 4,615 available for the water project from the Local Funds of the District after paying for compensation on account of land taken up, the total amount to be deducted from the accompanying estimate will be Rupees 6,139, leaving a sum of Rupees 16,561 to be otherwise provided for.

32. With regard to the remissions suggested to be made to the Contractors, Captain Ryves desires it to be understood that they are not recommended by him, that for Hoossain Sheriff having been proposed simply in accordance with the orders of this Office which it will be observed from paragraphs 23 and 28 were issued on account of that Officer's representation that Hoossain Sheriff was entitled to the same consideration as was shown to Vencataroyaloo Chetty and Kistna Naick.

33. With reference to the Madura Town drains, the District Engineer reported that the town Council engaged to raise Rupees 6,000 for that purpose, and that of this sum Rupees 818 had been already subscribed. It is expected that active measures will be taken to obtain further subscriptions for the balance when it is seen that the main works are approaching completion. Nothing has yet been done towards carrying out the proposed alterations to the drains.

34. I had an opportunity in February last, when Captain Ryves was at the Presidency on his way to join his appointment in the Madura District, of conferring with that Officer on the subject of the water project under reference, and the result which we arrived at was, that the only alteration required in the original design is to raise the bed of the Aqueduct across the west Veleyn and Marret streets at its eastern end one foot, so as to admit of the arches over the roadways having a versed line of $\frac{1}{4}$ of their span, which will give a height under the crown of 10'6" for the passage of conveyances. If necessary, the roadway also can be lowered another foot to give additional height.

35. It is calculated that with two feet depth of water in the supplying channel, the delivery will be about 4,500* cubic yards per hour, and this measure of supply may fairly be expected during six months of the year and probably longer, if care be taken to turn the water into the channel head by means of a Corumboo in the river.

36. With regard to the balances outstanding against Contractors, I would beg to recommend in consideration of the length of time which has elapsed since the work was stopped and the circumstances that the line of Tunnel originally proposed was subsequently altered, that they be required to perform work for the sums† entered in column 5 of the Statement given in paragraph 30, and that the amounts aggregating Rupees 2,053, ‡ suggested to be remitted be ordered to be written off to profit and loss.

37. In submitting Captain Ryves' estimate for Rupees 23,000, I have the honor to request the sanction of Government to a sum of Rupees 16,561, as follows:—

Amount of revised estimate.. .. .	RS.	23,000
<i>Deduct.</i>		
Balance remaining from Local Funds after paying for compensation on account of lands taken up, Rupees 4,615		
Reduced balance outstanding against Contractors, Rupees 1,824		
		6,439
Balance Rupees.....		16,561

38. I would beg to suggest that the amount required be met from the savings which may be effected from the allotments of other Districts, provided that in the re-distribution of the funds allowed for Public Works generally, which it is my intention shortly to submit to Government

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No. 1,644, dated 29th August 1861. with reference to their orders noted in the margin, it be found possible to provide for the carrying out of the water project.
" 1,655, " 31st " In the event of my being unable to do this, I request sanction to provide for the work from funds, which, as the year passes on, District Engineers may intimate their inability to expend on Public Works. I also request sanction for entering the unexpended balance of the sum of Rupees 16,561, in the Budget for the ensuing year.

39. As there is a sum of Rupees 6,439, (vide paragraph 37,) now available from Local Funds and from outstanding balances against Contractors, I would solicit the authority of Government for at once proceeding with the work to the extent which that amount will admit of.

40. I regret exceedingly the delay which has occurred in the submission of this report, but from the numerous references which had to be made to obtain correct information to enable me to lay the subject fully and clearly before Government it was unavoidable.

No. 10. From Lieutenant-Colonel W. H. HORSLEY, Chief Engineer, to J. D. SIM, Esq., Secretary to Government, Public Works Department, dated Chepauk, 19th November 1861, No. 7,364:—

SIR,

2 Letters from the District Engineer Madura, 23rd October 1861, Nos. 965 and 967, with two enclosures.

Hoossain Sheriff, Vencataroyaloo Chetty, Kistna Naick.

1. With reference to their Proceedings No. 1,910, dated 16th October 1861, I have the honor to submit for the information of Government the accompanying letters from the District Engineer Madura, relative to the sums outstanding against the parties marginally noted, on account of their contracts in connection with the Madura Town Water project.

2. From Captain Ryves' letter, No. 965, dated 23rd October, it will be observed that the total amount outstanding against Contractor Hoossain Sheriff, inclusive of interest, is given at Rupees 2,013-11-4, as follows:—

	RS.	A.	P.
Amount advanced.....	4,500	0	0
Value of work done.....	2,773	15	2
Total.....	4,726	0	10
Interest at 5 per cent. per annum from 9th June 1858 to 9th October 1861.....	287	10	6
Total.....	2,013	11	4

* Rupees 693.

3. If from this sum, however, be deducted the amount* entered in column 5 of the statement given at paragraph 30 of my letter, No. 5,335, dated 27th September last, the actual sum which Hoossain Sheriff may properly be called upon to work out will be seen to be Rupees 1,320-11-4.

4. The costs incurred in the institution of Suits Nos. 18 and 19 are shown in the statement appended to the District Engineer's letter, No. 967, dated 23rd ultimo, and amount to Rupees 727-4-9, as follows:—

	RS.	A.	P.
On account of Suit No. 18.....	385	10	0
Do. do. No. 19.....	341	10	9
Total.....	727	4	9

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5. From the last mentioned amount the District Engineer states, that Rupees 250 (the value of stamps in Suit No. 18) have been recovered from the Treasury, and that Rupees 169-10-3 (as per Court Decree) are recoverable from Hoossain Sheriff, leaving a balance of Rupees 307-10-6, (Rupees 135-10-0, on account of Suit No. 18, and Rupees 172-0-6, on account of Suit No. 19) to be written off to profit and loss.

6. With respect to Suit No. 18, instituted by Captain Ryves against Vencataroyaloo Chetty and Kistna Naick, that Officer brings to notice in his letter, No. 965, abovementioned, that as it was stopped by Captain Brine in August 1860 (when he was in charge of the District), and the parties and their securities relieved from all responsibility as regards their contract for the under-Tunnel; and as, moreover, a fresh agreement was drawn up making the defaulters answerable for only Rupees 791 out of Rupees 2,044 (exclusive of interest), standing against them, no result has been obtained. He further reports that notwithstanding their fresh agreement and the circumstance that the necessary drawings and instructions were furnished to them three months ago, the Contractors have performed no work whatever, and he is of opinion that even the reduced balance of Rupees 791, will have to be recovered from them by the institution of another Suit.

7. The circumstances connected with the re-measurement and re-valuation of the work executed by the Contractors Vencataroyaloo Chetty and Kistna Naick, and the drawing up of a new agreement with them are fully detailed in paragraphs 25 and 26 of my letter No. 5,335, dated 27th September 1861.

No. 11. Endorsement of the Chief Engineer, dated Chepauk, 3rd December 1861, No. 7,926. From Captain J. G. RYVES, District Engineer, Madura, to the Deputy Chief Engineer, Southern Circle, dated Madura, 19th November 1861, No. 1,136:—

SIR,

1. According to the terms of the agreement between Captain Brine and the defaulting Contractors of the water project under-Tunnel, they bound themselves to refund at three months' notice or work out within eight months, a portion (viz., Rupees 777) of the balance Rupees 2,044 due by them; in consideration of the Suit against them being quashed and the Government claim for the remainder being given up.

2. This agreement was made in August 1860, but up to the time when I returned to Madura the defaulters had neither done work for, nor refunded the above amount.

3. Having received orders from the Chief Engineer to adhere to the terms of Captain Brine's agreement; on the 24th July I served the defaulters with Notice to refund the money in three months or complete work to the value; the money was not refunded within the three months, and no work has been done.

4. The defaulters have however to-day tendered the amount agreed upon in their agreement with Captain Brine, viz., Rupees 777-1-0 + Rupees 135-10-0, the Government share of costs; and I have now the honor to request you to favor me with orders how to act.

1 Letter from the District Engineer
Madura, dated 19th November 1861,
No. 1,136.

1. Submitted for the information of Government.
2. In paragraph 30 of his letter to Government the Chief Engineer recommended that of the sum of Rupees 2,044 outstanding against the Contractors marginally noted for the Madura Town Water project, Rupees 1,253 should be remitted, and the parties held responsible for the difference, viz., Rupees 791, that being the amount fixed by Captain Brine after a re-measurement and re-valuation of the work performed by them.

3. As stated in paragraph 6 of the Chief Engineer's letter, No. 7,364, dated 19th November 1861, the Contractors performed no work whatever in liquidation of the reduced balance, and moreover failed to pay up the amount within three months from the date of the order demanding

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payment. Captain Ryves now reports, however, that on the 19th ultimo, the Contractors tendered the sum of Rupees 791 abovementioned, together with the costs (Rupees 135-10-0) incurred in the institution of Suit No. 18, referred to in paragraph 5 of the Chief Engineer's letter last quoted.

4. Under the circumstances represented in his letter No. 5,335, dated 27th September 1861, the Chief Engineer recommends that the sanction of Government may be accorded to the acceptance of the sum of Rupees 926-10-0 from the Contractors abovementioned in full of all demands against them on account of their contract in connection with the Madura Town Water project.

(Signed) W. H. HORSLEY, Lieut.-Colonel,
Chief Engineer.

No. 12. ORDER THEREON, 1st April 1862, No. 641.

1. In the first of the letters recorded above, the Chief Engineer reports on the Madura Town water project and the circumstances which have interrupted its progress, and applies for further funds to proceed with the work under a revised estimate.

2. The design of the project, which was originally brought forward in 1851 by the then Collector (Mr. R. D. Parker) on the suggestion of Lieutenant-Colonel, then Captain, Horsley Civil Engineer 8th Division, was to bring a supply of water from the Vigay river into the Town, for domestic uses, as well as for the purpose of cleansing the street drains during the period of freshes. The estimated cost was 28,606 Rupees, 18,763 Rupees of which was available from the Pagoda funds, and the remaining 9,842 Rupees was to be made up from a sum of 34,008 Rupees consisting of Devasthanam funds in the Shevagunga Estate. The works connected with the project advanced very slowly and unsatisfactorily, notwithstanding that the Chief Engineer had issued repeated orders to the District Engineer to cause them to be vigorously prosecuted and had even removed the Officer originally in charge of them; but it is not necessary to notice in this place the circumstances connected with the slow progress of the work, or the correspondence which passed on the subject, previous to the orders of Government of the 24th August 1859, No. 2,028, when they observed that the only obstacle to the resumption and prosecution of the work was the insufficiency of the estimate. In pursuance of the wishes of Government expressed on that occasion, Mr. Clarke, the Collector of Madura, reported on the progress of the project, the land taken up for the purpose, and the compensation to be made for the same. He did not think that the water brought into the Town would be used for drinking, but stated that it would be most valuable for cleansing the Town and flushing the drains (which indeed was the chief design), as also for washing and other general purposes. To improve the level of the drains, the District Engineer had prepared, it seemed, an Estimate of 6,540 Rupees, which Mr. Clarke believed the people would make up, as 6,000 of them had attended a meeting he had convened, and had promised to make good the money. Indeed, he formed a Committee at the meeting, the members of which he hoped, would collect the amount, and might afterwards be employed as a Municipal Council. The Government in their Proceedings of the 29th November 1859, No. 2,775, considered these measures to be judicious, but awaited a report from the Chief Engineer respecting the completion of the project.

From Collector Madura, 7th November 1859, No. 1,234.

Vide also Proceedings of Government, 30th April 1861, No. 974, paragraph 10.

10 *Proceedings of the Madras Government, Public Works Department,*
1st April 1862.

3. *The letter now under notice is the expected report of the Chief Engineer. In it he gives a résumé of his correspondence with the local Officers since July 1859, explanatory of the slow progress of the work, the discussion of plans for conducting the water, viz., whether by an under-tunnel or an aqueduct, the failure of Contractors to fulfil their engagements, the amount of compensation claimed for lands taken up for the project, and the money now required to complete it. From paragraph 7, it appears that Rupees 20,579-5-4 has been expended out of the original Estimate of Rupees 28,655-9-0, thus leaving an unexpended balance of Rupees 7,726-3-8; but on the other hand the work actually performed is valued at Rupees 16,522-11-7, or Rupees 3,877-1-5 below the amount advanced; and in respect to the insufficiency of the original Estimate for the completion of the project, it is explained that the sum allowed in it for earthwork is inadequate, and that no provision has been made for surfacing the side slopes of the embankment.

4. Respecting the sum of Rupees 3,877 outstanding against the Contractors, the Chief Engineer, in paragraphs 22 to 32, notices the discussions between the Central Office and the local Officers as to the manner in which the parties indebted to Government should be dealt with; and adverting to the orders of the 15th December 1859, No. 2,924, authorizing the allowance of more liberal terms of adjustment, and in consideration of the circumstances pointed out in paragraphs 26 and 36, that Officer appends to paragraph 30 a statement of the amounts proposed to be remitted, based on the terms suggested by Captain Brine (when Acting 1st Assistant in charge of the District), who re-measured and re-valued the Contractor's work in connection with the under-tunnel. The following is the result:—

Contractors.	Work contracted for.	Amount outstanding.	Proposed to be remitted.	Remaining to be worked out.
1. Vencataroyloo Chetty...	Under-tunnel.	2,014	1,253	791
2. Kistnama Naick				
3. Hussain Sheriff.....	Aqueduct.....	1,726	693	1,033
1. Petty Contractor.....	10 feet Basin.....	20	20	
5. Do.	Aveugapooram } Aqueduct..... }	87	87	
		3,877	2,053	1,824

5. Since the receipt, however, of the letter now under notice, two further communications have been received from the Chief Engineer on the subject of these outstandings, which are the second and third papers recorded above. * As noticed in former orders,* suits had been irregularly filed by Captain Ryves against the three principal Contractors in question, the first two being jointly sued. In addition to Rupees 1,726-0-10 outstanding against Hussain Sheriff (the third Contractor) and which sum he has been adjudged† by the Madras Sub-Court to make good with interest, he is charged‡ with interest accordingly at 5 per cent. from 9th June 1858 to 9th October 1861, to the amount of Rupees 887-10-6; thus raising the sum to be recovered from him to Rupees 2,013-11-4.

* 15th December 1859, No. 2,924.

† Proceedings of Government, 16th October 1861, No. 1,910.

‡ Vide paragraphs 2 to 5 of Chief Engineer's letter, 16th November 1861, No. 7,364.

Proceedings of the Madras Government, Public Works Department, 11
1st April 1862.

Sum outstanding against Hussain Sheriff.....	RS.	A.	P.
Interest at 5 per cent. from 9th June 1858 to 9th October 1861.....	1,726	0	10
	287	10	6
	2,013	11	4
Deduct.			
Balance of Vakil's fee ordered to be paid by G. O. 16th October 1861, No. 1,910.....	73	11	0
Further costs to be paid by Government (Suit No. 19).....	172	0	0
Amount now recommended to be remitted.....	693	0	0
	938	11	6
Actual recovery to Government..... Rupees	1,074	15	10

Against this sum, however, must be charged the various items noted in the margin, which reduces the actual recovery to Government to Rupees 1,071-15-10. As respects the other two Contractors, viz., Vencataroyloo Chetty and Kistnama Naick, it appears from paragraph 6 of the Chief Engineer's letter of the 19th November 1861, that as the work on which they were engaged, viz., the under-tunnel was stopped by Captain Brine in August 1860 they and their securities were relieved from all further responsibility as regards their contract, but that a fresh agreement was drawn up making the defaulters responsible for only Rupees 791 exclusive of interest. From the Chief Engineer's Endorsement dated 3rd December 1861 (being the third of the papers recorded above), the Government learn that these Contractors have now tendered this sum (Rupees 791) together with Rupees 135-10-0, being the costs incurred by Government in the Suit (No. 18) instituted against them, making together Rupees 926-10-0, which is recommended for acceptance in full of all demands.

6. The following statement shows at one view the effect of the circumstances and proposals noticed above:—

Contractors.	Amount outstanding.			Proposed to be remitted.	To be worked out.	To be made good by Contractor in addition to column 4.			To be borne by Government in addition to column 3.			Total of columns 4 & 5, to be recovered from Contractors.			To be written off total of columns 3 and 6.		
	RS.	A.	P.	RS.	RS.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
1. Vencataroyloo Chetty.	2,014	0	0	1,253	791	135	10	0	...	...	...	926	10	0	1,253	0	0
2. Kistnama Naick.																	
3. Hussain Sheriff.....	1,726	0	10	693	1,033	287	10	6	172	0	6	1,320	10	6	865	0	6
4. Petty Contractor.....	20	0	0	20	...	...	...	...	...	...	...	...	...	...	20	0	0
5. Do.	87	0	0	87	...	...	...	...	...	...	...	...	...	...	87	0	0
	3,877	0	10	2,053	1,824	423	4	6	172	0	6	2,247	4	6	2,225	0	6

Under the circumstances represented, the Government accept the Chief Engineer's recommendations, the effect of which is shown in the above statement, and grant authority for writing off to profit and loss the total sum exhibited in column 8, viz., Rupees 2,225-0-6, leaving the amount in column 7, Rupees 2,247-4-6 to be recovered from the Contractors, or worked out by them.

7. In respect to the town drains, and the engagement of the people to raise 6,000 Rupees for the purpose, the Government note the Chief Engineer's statement in paragraph 33 of his letter of the 27th September 1861; that Rupees 818 have been already subscribed, and that active measures are expected to be taken to realize further subscriptions as the main works approach.

12 Proceedings of the Madras Government, Public Works Department,
1st April 1862.

completion, though nothing has yet been done to alter the street drains. The Government would here observe that if the inhabitants do not ultimately subscribe, a town water rate should be imposed on them.

8. It has been finally arranged between the Chief Engineer and Captain Ryves, that the only alteration required in the original design of the Madura water project is to raise the bed of the Aqueduct across the Veleya and Marrett streets at its eastern end one foot, so as to admit of the arches over the road-ways having a versed sine of $\frac{1}{4}$ th of their span, which will give a height of 10'-6" under the crown for conveyances, and if necessary to lower the road-ways another foot to give additional height. It is then calculated that with 2 feet of water in the supplying Channel, the delivery will be about 4,500 cubic yards per hour, and that this measure of supply may be fairly expected during six months of the year and probably longer, if care be taken to turn the water into the Channel head by means of a corumboo in the river. To complete the project, a revised estimate of 23,000 Rupees is now submitted, of which Rupees 4,615 is available out of Local funds, after paying 3,111 Rupees as compensation for lands taken up for the project. Adding to this the reduced balance of 1,821 Rupees outstanding against Contractors, the Chief Engineer asks sanction for the balance of Rupees 16,561; but as the sum of Rupees 2,225 (column 8 of foregoing statement) has been ordered to be written off by default of Contractors, the sum of Rupees 2,217 shown in column 7 as recoverable from the Contractors must be taken to the credit of the project; so that the amount requiring the sanction of Government is actually reduced to Rupees 16,138; thus—

Amount of revised estimate.....	Rs. 23,000
Balance available from Local funds.....	4,615
Recoverable from Contractors.....	2,217
	<u>6,862</u>
Balance requiring sanction.....	16,138

9. The Governor in Council however observes that the sum of 16,561 Rupees has been entered in the Budget of 1862-63 for the completion of the Madura Town water project; of this sum Rupees 16,138 are now sanctioned for expenditure in that year, and the remainder Rupees 423 will be available for other works in the same District. Considering the long period of time that this project has been in course of execution, the interruptions it has experienced, and the heavy additional expense it has caused, His Excellency in Council hopes that the work will now be vigorously prosecuted and brought to an early and successful termination, for which purpose the money available from Local funds will at once be made use of in addition to the sums to be recovered from Contractors, and if necessary, the Chief Engineer is authorized to provide for the progress of the work from such funds as the District Engineers may from time to time report their inability to spend in their Districts, until the opening of the next official year sets free the money provided for the water project in the new Budget.

(Signed) W. H. HORSLEY, Lieut.-Colonel,
Secretary to Government.

Public Works Dept
13

No 641-
Proceedings of the Madras Government
Under date the 1st April 1862.
Read the following papers.

From the Chief Engineer

Submitting for the sanction of Government an Estimate (Here enter 27th Sept/61 No 5335) amounting to Rs 23,000 for completing the Madura Town Water Project.

From the Chief Engineer,

With reference to Proc. No 1910 dated 16th Octr 1861 submitting 2 letters (Here enter 19th Novr 1861 No 7364) from the District Eng^r Madras regarding the Contractors in connection with the above project.

From the Chief Engineer,

Recommending the acceptance of Rs 926-10-0 from Contractors Bayleyton (Hilly and Hilly's Main) as full of all demands against them in connection of their contract with the above project. (Here enter 3rd December 1861 No 7926)

For the water project a
Rs 926-10-0 is
to be paid -

In the first of
the letters recorded above,
the Chief Engineer
reports on the Madura
town water project and the
circumstances which
have

have interrupted its pro-
gress, and apply for
further funds to proceed
with the work under a
revised estimate.

2 The design of
the project, which ^{was} originally brought forward in 1857
- ~~first with Collector Parker~~ by the then Collector, Mr. D.
in 1857, was to bring a D. Parker, on the suggestion
supply of water from the of Lieut. Col., then Capt., Horsley
Civil Engineer 8th Division,

Vigay river into the town,
for domestic uses, as well as
for the purpose of cleansing
the street drains during
the period of ~~the~~ freshes.

The estimated cost was 28,606 Rupees, 18763 Rs of which was available from the Pagoda funds, and the remaining 9,842 Rupees was to be made up from a sum of 31,008 Rupees consisting of

of Devastation funds
in the Newagunga
State. The works con-
-nected with the pro-
-ject advanced very
slowly and unsatisfac-
-torily, notwithstanding
that the Chief Engineer
had issued repeated
orders to the District
Engineer to cause them
to be vigorously prose-
-cuted, and had even
removed the officer ori-
-ginally in charge of
them; but it is not
necessary to notice in
this place the circum-
-stances connected with
the slow progress of the
work, or the correspondence
which passed on the
Subject

subject, previous to the orders
of Government of the 24th
August 1859, No 2028,
when they observed that
the only obstacle to the
resumption and prosecu-
tion of the work was
the insufficiency of the
estimate. In pursuance
of the wishes of Govt
expressed on that occasion,
Mr. Clarke, the Collec-
tor of Madras, reported
on the progress of the
project, the land taken
up for the purpose,
and the compensation
to be made for the
same. He did not think
that the water brought
into the town would
be used for drinking,
but

From Col^l Madras
7th Novr 1859 No 1234.

17
but stated that it would
be most valuable for
cleaning the town
and flushing the
drains / which indeed
was the chief design,
as also for washing
and other general pur-
poses. To improve
the level of the drains,
the District Engineer
had prepared, it seemed,
an estimate of 6540
Rupees, which Mr.
Clarke believed the
people would make
up, as 6000 of them
had attended a meet-
ing he had convened,
and had promised
to make good the
money. Indeed, he
formed

formed a Committee at the meeting, ^{members of which} the hoped, would collect the amount, and might afterwards be employed as a Municipal Council. The Government in their Proceedings of the 29th November 1859, No 2775, considered these measures to be judicious, but awaited a report from the Chief Engineer respecting the completion of the project.

Vide ^{Memorandum} ~~Trans.~~ of Govt.
30th April/61 No 2774
para 10.

3 The letter now under notice is the expected report of the Chief Engineer. In it, he gives a resume of his correspondence with the local officers since July 1859

1859, explanatory of the slow progress of the work, the discussion of plans for conducting the water, viz whether by an under tunnel or an aqueduct, the failure of contractors to fulfil their engagements, the amount of compensation claimed for lands taken up for the project, and the money now required to complete it. From para 7, it appears that Rupees 20,879. 5. 4 have been expended out of the original estimate of Rupees 28,605. 9. 0, thus leaving an unexpended balance of Rupees

Original Estimate	28,605. 9. 0
Expenditure	20,400
Value of materials transferred by Govt.	479. 5. 4
	<u>20,879. 5. 4</u>
Balance	<u>7,726. 3. 8</u>

Ruppes 7726-3-8; but on
the other hand the work
actually performed is
valued at Ruppes 16522.14.7,
or Ruppes 3877-1-5 bet.
-low the amount ad-
-vanced; and in res-
-pect to the insufficiency
of the original estimate
for the completion of
the project, it is explain-
-ed that the sum al-
-lowed in it for earth-
-work is inadequate,
and that no provision
has been made for turfing
the side slopes of the
embankment.

4. Respecting the
sum of Ruppes 3877 out-
standing against the
Contractors, the Chief
Engineer

vide para 1

21
Engineer, in paras 22 to
32, notices the discrepancy
between the Central Office
and the local Officers as
to the manner in which
the parties indebted
to Government should
be dealt with; and
adverting to the orders
of the 18th December 1899
No 2924, authorizing
the allowance of more
liberal terms of acquit-
-ment, and in consid-
-eration of the circum-
-stances pointed out in
paras 26 ^{and 36}, that Officers
appended to para 30
a Statement of the
amounts proposed to
be remitted, based on
the terms suggested by
Captain

Captain Brine, when acting 1st Assistant in charge of the district, who remeasured and revalued the contractor's work in connection with the under tunnel. The following is the result.

Contractors.	Work con- tracted for	Amount outstanding	Proposed to be remitted	Remaining to be worked
1. Vincataryloo (Tilly)	Under tunnel	2,044	1253	791
2. Nishanna Natch				
3. Hoobain Sheriff	Aqueduct	1726	693	1033
4. Tilly Contractor	10 feet Basin	20	20	"
5. ———— & ————	2 Aqueducts	87	87	"
		3,877	2,053	1,824

Since the receipt however of the letter now under notice, two further communications have been received from the Chief Engineer on the subject of

15 Dec 1894 to 29 Dec.

* Recd of Genl 16 Oct 1894

* Little para 2 to 5 of Chief Eng's letter, 19 Dec 1894
1197,364-

²³
of these outstanding, which are the second and third papers re-
- corded above. As noticed in former orders, suits had been irregularly filed by Captain Stynes against the three principal Contractors in question, the first two being jointly sued. In addition to Stynes 1726-10 out-
- standing against Hoobain Sheriff (the 3rd Contractor) and which sum he has been ad-
- judged by the Madras Sub-Court to make good with interest, he is charged with inter-
- est accordingly at 5 per Cent.

Cent from 9th June 1858
to 9th October 1861 to the
amount of Rupees 287-10-6;
thus leaving the sum
to be recovered from him
to Rupees 2013-11-4.

Against this sum how-
ever must be charged
the various items noted
in the margin which
reduces the actual reco-
very to Government to
Rupees 1074-15-10.

As respects the other
two Contractors, viz.
Bucatarayloo Kelly and
Jishanna Naidu, it
appears from para 6
of the Chief Engineer's
letter of the 19th Nov
1861, that as the works
on which they were
engaged

Simultaneously against
Hossein Sheriff 17-6-10
Interest at 5 percent from
9th June 1858 to 9th Oct 1861 287-10-6
2013-11-4
Deduct
Balance of lakhs &c
ordered to be paid by G.O.
16th Oct 1861, 8-19-10-73-11-0
Further costs to be paid
by Govt (Suit No 19) 17-6-10
Amount now, decem.
- recorded to be remitted by G.O. 938-11-6
- Amount recovery to Govt Rs 1074-15-10

engaged, viz. the Under-
tunnel, was stopped
by Captain Brine.
in August 1860, they
and their securities
were released from
all further responsi-
- bility as regards their
Contract, but that a fresh
agreement was drawn
up making the defaul-
- ters responsible for
only Rupees 791 exclu-
- sive of interest. From
the Chief Engineer's
endorsement dated
3rd December 1861 (being
the third of the papers
recorded above) the
Government learn
that these Contractors
have now tendered
this

this sum (Rupees 791) together with Rupees 135-10-0 being the costs incurred by Government in the suit (No 18) instituted against them, making together Rupees 926-10-0, which is recommended for acceptance in full of all demands.

6. The following statement shows at one view the effect of the circumstances and proposals noticed above.

1	2	3	4	5	6	7	8
Contractors	Amount proposed to be remitted out.	Proposed to be remitted out.	To be worked good by Contractor in addition to Col 4.	To be worked good by Contractor in addition to Col 4.	To be worked good by Contractor in addition to Col 4.	Total of Col 4, 5, 6, 7, 8.	Total of Col 4, 5, 6, 7, 8.
1. Vincatroyloo Chetty	2064-0-0	1253-0-0	791-0-0	135-10-0	"	926-10-0	1253-0-0
2. Kishanrao Saik	1726-10-0	673-0-0	1033-0-0	257-12-6	172-0-6	1320-10-6	865-0-6
3. Hopsain Sheriff	20-0-0	20-0-0	0-0-0	0-0-0	"	"	20-0-0
4. Pelly Contractor	87-0-0	87-0-0	0-0-0	0-0-0	"	"	87-0-0
5. Do	3877-10-0	2053-0-0	1824-0-0	422-4-6	172-0-6	2247-4-6	2223-0-6

Under the circumstances represented, the Government, ^{accept} the Chief Engineer's recommendations, the effect of which is shown in the above statement, and grant authority for writing off to Profit and Loss the total sum exhibited in ^{column} para 8, viz Rupees 2225-0-6, leaving the amount in Col 7, viz Rupees 2247-4-6 to be recovered from the Contractor, or worked out by them.

7. In respect to the town drains, and the engagement of the people to raise 6000 Rs for

for the purpose, the Govt
 note the Chief Engineer's
 statement in para 33
 of his letter of the 27.
 September 1861, that
 Rspees 818 have been
 already subscribed,
 and that active mea-
 -sures are expected
 to be taken to realize
 further subscriptions
 as the main works
 approach completion,
 tho' nothing has yet
 been done to alter
 the ^{street} drains. The Govt would here observe that if the inhabitants do
 not ultimately subscribe, a towns water
 rate should be imposed on them.
 It has been ^{paras 34 & 35}
 finally arranged between
 the Chief Engineer
 and Captain Rivers,
 that the only altera-
 -tion required in the
 original

of letter 27: Sept/61.

original design of the
 Madras water pro-
 -ject is to raise the
 bed of the Aqueduct
 across the Veljeyp
 and Marrett Streets
 at its eastern end
 one foot, so as to
 admit of the arches
 over the roadways
 having a versed sine
 of $\frac{1}{4}$ of their span,
 which will give a
 height of 10' 6" under
 the crown for convey-
 -ances, and if necessary
 to lower the roadways
 another foot to give
 additional height.
 It is then calculated
 that with 2 feet of
 water in the supplying
 Channel,

Channel, the delivery will be about 4500 cubic yards per hour, and that this measure of supply may be fairly expected during 6 months of the year and probably longer, if care be taken to turn the water into the channel head by means of a Corumbos in the river. To complete the project, a revised estimate of 23,000 Rupees is now submitted, of which Rupees 4,615 is available out of Local funds, — after paying 3111 Rupees as compensation for lands taken up for the

Available local funds ^{Rs.} 7726
 Compensation for land
 taken up 3111
Balance available Rs. 4615

31
 the project. Adding to this the reduced balance of 1824 Rupees outstanding against Contractors, the Chief Engineer asks sanction for the balance of Rupees 16,561; but as the sum of Rupees 2223 (column 8 of foregoing statement) has been ordered to be written off by default of Contractors, the sum of Rupees 2247 shown in column 7 as recoverable from the Contractors must be taken to the credit of the project; so that the amount

amount requiring the
sanction^{of Govt} is actually re-

duced to Rs 16,138; thus,

Amount of Revised Estimate — 23,000

Deduct

Balance available from local
funds. — 4,615

Recoverable from Contractor 2,247. 6,862

Balance requiring sanction Rs 16,138

9. The Governor
in Council however
observes that the sum
of 16,561 Rupees has
been entered in the
Budget of 1862/63 for
the completion of the
Madura town water
project: he accordingly
~~sanctions that amount,~~
~~but care will be taken,~~
~~in working out the~~
~~estimate~~

Of this sum Rs 16,138 are
now sanctioned for expendi-
ture in that year, and
the remainder Rs 423
will be available for
other works in the same
District.

33
~~estimate, not to exceed~~
~~the amount really~~
~~requiring sanction.~~
Considering the long
period of time that
this project has been
in course of execution,
the interruptions it
has experienced, and
the heavy additional
expense it has caused,
His Excellency in
Council hopes that
the work will now
be vigorously prosecuted
and brought to an
early and successful
termination, for which
purpose the money
available from local
funds will at once
be made use of in
addition

addition to the sum
to be recovered from
contractors, and if ne-
cessary, the Chief
Engineer is au-
thorized to provide
for the progress of
the work from such
funds as the District
Engineers may from
time to time report
their inability to
spend in their
districts, until the
opening of the next off-
year sets free the
money provided for
the water project in
the new Budget.

W. M. R.

13 Copies

To the Deputy Chief Engineer B. C. with 3/4 Encl.
3. - to Accountant General

Sept 23rd

Madura town
water project.

Public Works 1862 Depar^t
Pro: of Gov^t for April.

N^o 641.

Proceedings of the Madras
Government.

Dated 1st April 1862.

From Supt. of Eng^g & S. B. D. S.
January 1862 to 28th in Pro

Chief Engineer
ports on the Madura
Town Water Project
with the orders thereon.

N^o 9 at 12.

c 15 March 1862