(1) Number of pages 20

44 · (2) Date of repair 21-8-88

(3) Initials of the Referencer

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

P.W.D. DEPARTMENT

G.O. No. B.P. No.	2668	Press. Mis.
Dated	29. 10. 1884.	~~198~~.

10

Not to be folded or roughly handled.

Archives—I 10,006-9 89

29th October 1884, No. 2668 W., Public Works.

2668/1

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Military Works.

Read—the following letter from the Secretary to the Government of India, Military Department, to the Secretary to the Government of Madras, Public Works Department, dated Simla, 20th October 1884, No. 1052 M.W. :—

In reply to your letter, No. 1839 W., dated 29th July 1884, I am directed to state, for the information of the Governor in Council, that the Government of India are pleased to re-allot the sum of Rs. 6,200, struck out of the preliminary issue of the Madras Military Works budget estimate of the current year, for the construction of the bakery at Wellington.

2. This sum includes the authorised percentage for establishment and tools and plant.

3. The plans and estimates received with your letter under reply are herewith returned as requested.

Order—dated 29th October 1884, No. 2668 W., Public Works.

Communicated to the Superintending Engineer, IV Circle, for information and guidance, with advertence to proceedings of Government, under date the 29th July 1884, No. 1838 W.

(True Extract.)

Major, R.E.,
Under Secy. to Govt., P.W.D.

To the Superintending Engineer, IV Circle, with plan and estimate.
" Examiner, Public Works Accounts, with duplicate abstract estimate.
" Military Department.

Exd. E. Fernandez.
Spare Copies

BUILDINGS AND ROADS.
MILITARY WORKS.

Govt. of (1884) Madras.

PUBLIC WORKS.

Dated October, 29th.

Recd, *Encl.*

G.O., 29th Oct. 1884, No. 2668 W.

OCTOBER.

Bakery at Wellington

Letter from the Government of India, re-allotting funds for the —, communicated to the Superintending Engineer.

2ND JUNE 1884, No. 1373 W., PUBLIC WORKS.

2668/7

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following papers :—

From C. A. GALTON, Esq., President of the Local Fund Board, Malabar, to the Chief Engineer, Public Works Department, dated Calicut, 18th April 1884, No. 105—Through the Superintending Engineer, IV Circle :—

I have the honor to submit, herewith, the plans and estimates (according to the list annexed) for the iron girder bridges which it is proposed to erect over the Iritty and Merumpoya rivers at the 27th and 13th miles, respectively, on the trunk road from Tellicherry to Coorg. This road is one of the most important lines of communication in the district, and carries a very heavy traffic during the coffee season. It is estimated that from four to five hundred carts pass along the road daily at this time of the year, and the absence of bridges over these rivers causes very great hindrance to the traffic. It is desirable, therefore, that sanction be obtained at the earliest possible date to admit of the materials being landed as soon as the next monsoon is over, in which case the bridges might be erected before the rainy season of 1885. Copy of the Local Fund Board's resolution passed at their meeting held on the 16th instant is submitted herewith.

2. As the Local Fund Engineer, Mr. Anderson, has dealt very fully with the circumstances of each case in his general reports accompanying the estimates, it is unnecessary for me to go over the same ground, and a few words of explanation will suffice.

3. The Iritty river probably presents greater difficulties than any other river in the district owing to its great breadth, depth, the rapidity of its current and the unhealthy nature of the locality. The amount of the present estimate is Rs. 78,000, and provides for an iron superstructure on the Whipple-Murphy single trellis system. The reasons for adopting this system in preference to others are fully explained in the report. It is proposed to have seven spans of 72 feet each, and the roadway will be 14 feet broad. The previous history of this bridge is given in Mr. Anderson's report, but the dates of construction of the original bridge, of its destruction and of its restoration cannot be ascertained. The records are possibly in the Public Works Department. No papers bearing on the subject have been discovered in the records of the Local Fund department. In 1878 the second superstructure was dismantled as it was in an advanced stage of decay ; in the following year an estimate, amounting to Rs. 63,330, for a Warren girder bridge was sanctioned (*vide* G.O., dated 21st April 1879, No. 1190 W.) but further inquiry showed that alteration was required and a revised estimate, amounting to Rs. 47,700, was submitted for sanction (*vide* Board's proceedings, dated 5th August 1882, Mis. No. 5900). It does not appear that sanction was ever accorded.

4. Owing to the occurrence of very heavy floods in 1882, a re-investigation of the waterway was deemed desirable, and the searching inquiries which have been instituted by the Local Fund Engineer show that provision must be made for a much heavier flood-discharge than was considered necessary when the former estimates were prepared. This accounts for the increase in the estimate. The investigation has been very thorough, and Mr. Anderson has visited the locality time after time to ensure the accuracy of his calculations, which are clearly set forth in the papers. I am sure they may be accepted with confidence. As to the designs it will be patent that very great care and labor have been bestowed upon them, and Mr. Anderson's

thorough knowledge of this branch of his profession is a guarantee that his designs are the best suited for such a work as that under consideration.

The specifications contain very full instructions explanatory of the designs and there will, I imagine, be no difficulty in supplying materials with such detailed information as to what is required.

5. The old Merumpoya bridge was destroyed by a high flood in 1882. This is a comparatively small river, but it runs between lofty banks and provision has to be made for a much greater flood-discharge than was allowed for by the former structure. It is proposed to have three spans of 72 feet and the width of the roadway will be 14 feet. Owing to the nature of the bottom it will be necessary to construct wells, which involves extra expenditure on account of plant, &c., and the piers cannot be utilised as in the case of the Iritty bridge, where five piers are standing and in good condition; consequently the cost of this bridge is higher than that of the Iritty bridge in proportion to its length. The fullest information regarding the proposed structure is afforded in the report and accompanying papers, and it is unnecessary to enter into greater detail.

6. As regards the method of obtaining the materials, I think it will lead to economy and expedition if the Local Fund Board are permitted to procure them by private contract instead of through the store department of the India Office. When the original estimate for Rs. 63,330 was sanctioned there was some idea of procuring the materials through Mr. Maylor, of Messrs. Peirce, Leslie and Company, and perhaps some firm here or in Bombay may be willing to tender for the supply of the iron work. An alternative plan would be to employ a qualified Consulting Engineer, like Mr. G. B. Bruce of Westminster, who, I understand, has had large experience in the supply of iron girder bridges for Indian railways, to procure the materials in the cheapest market and pass them before despatch. His charges would probably add some £100 to the estimate, but as Mr. Anderson's rates are based on the highest quotations of recent date, it is probable that there will be savings on the iron work and, in any case, it will be worthwhile to pay a little more to ensure prompt delivery of the materials to admit of the erection of the bridges with the least possible delay. Even if the contract be given to a local firm, it will be necessary to employ an experienced engineer at Home to inspect and pass the materials to ensure their being in accordance with the specification, and properly tested. Owing to the very unhealthy and inaccessible nature of the locality it is not likely that any firm will undertake to *erect* the bridges by contract, and the Local Fund Board must make their own arrangements The estimates provide for a special staff for the purpose and a standing camp, as labor will have to be brought from a distance. It will be necessary also to provide medical aid. Mr. Anderson will himself direct operations, but his other duties will not admit of his devoting his whole time to the work, and a qualified Assistant Engineer must be entertained during the erection of the two bridges.

7. The excess over the budget provision can be met from the allotments for other new works. The total grant is Rs. 1,67,000, but it is impossible to undertake all the works which have been entered in the budget and several must be deferred for some time to come.

From Colonel J. BEATTY, R.E., Superintending Engineer, IV Circle, to the Chief Engineer, Public Works Department, dated Coimbatore, 1st May 1884, No. 210 E.W.

I have the honor to forward, herewith, a letter from the President, Local Fund Board, Malabar district, accompanied by plans, estimates, &c., prepared by the Local Fund Engineer, Mr. Anderson, for two bridges which it is proposed to erect on the Iritty and Merumpoya rivers at the 27th and 13th miles of the trunk road from Tellicherry to Coorg.

1 Original letter, No. 105, of 18th April 1884, from the President, Local Fund Board, Malabar.

2 Lists showing 80 enclosures of plans, estimates, &c., sent by banghy parcel.

2. The Iritty bridge, which is estimated to cost Rs. 78,000, is to take the place of one which consisted of four spans of 70 feet and two end spans of 15 feet, with masonry piers and abutments founded on rock and a superstructure of teak, which was so decayed in 1878 that it had to be pulled down.

3. The old masonry is to be utilised as far as possible, one new pier and two new abutments being required, and the proposed bridge is to consist of seven openings of 72 feet each, spanned by iron pony trusses on the Whipple-Murphy single trellis system, each 72 feet in clear and 76 feet effective, bearing a 14-feet roadway of wrought-iron plate cross-girders, stringer beams and timber platform. The special feature of the main girders is the connections by means of steel pins of $3\frac{3}{4}$ inch diameter, to which the designer, no doubt, justly attaches importance as greatly preferable to the ordinary system of rivetted connections.

4. The piers are 12 feet thick at bottom, 7 feet at top, and 22 feet long, exclusive of semi-circular cutwaters. M.F.L. is assumed to be 54·72 feet above the deep bed of the river, and there is to be a clear headway of 3 feet between that line and the underside of the cross-girders, so that the roadway will be about 59 feet above the deep bed.

5. The water-way provides for "a discharge of 250,000 cubic feet per second; due to 90 per cent. of an 18-inch down-pour" flowing off the catchment basin "in addition to the ordinary monsoon discharge of 80,000 cubic feet."

6. The Merumpoya bridge is to take the place of one of masonry, three spans of 36 feet, which was totally destroyed by a high flood on the 13th July 1882, and an entirely new structure is required.

7. The new Merumpoya bridge, which is estimated to cost Rs. 49,000, is to have three openings of 72 feet each, spanned by iron trusses and roadway exactly similar to those of the Iritty bridge.

8. The piers and abutments are to be carried up to a height of 30 feet above the deep bed so as to give a clear headway of 3 feet above M.F.L. The two piers, which are 6 feet thick, are to rest on wells sunk to 18 feet below the deep bed of the river at site; and the foundations of abutments are to be carried down through and rest on a bed of detrital laterite at 11 feet below the proposed new slope of river-bed and bank.

9. The proposed waterway provides for "a discharge of 47,000 cubic feet per second; due to 90 per cent. of an 18-inch down-pour, in addition to the ordinary monsoon flood-discharge of 10,500 cubic feet due to downpours of 3 to 5 inches lasting for three or four days."

10. The estimates have evidently been prepared with the greatest care by Mr. Anderson, and the papers sent give full information regarding the designs and method of construction, as well as reasons for the amount of waterway proposed, details of the rates, &c., and I see no reason to question the correctness of his figures or the suitability of his designs.

11. The estimates have apparently been submitted under one covering letter because it is proposed to carry them out at the same time by means of a special temporary establishment, which has been provided for, and because it is proposed to order from England at one time the iron work of the ten spans of 72 feet.

12. It will be observed that the Local Fund Board desire the earliest possible sanction in order that materials may be prepared and the works carried out without delay; funds being available in the budget of the present year.

13. In the examination of the estimates in this office no mistakes of any importance have been discovered.

Note by the Chief Engineer, Public Works Department.

These projects provide for bridges over two large streams, the Iritty and the Merumpoya, on the main line of road leading from Tellicherry to Coorg. The designs and estimates have evidently been prepared with unusual care, and are worked out in elaborate detail.

2. The Iritty bridge is designed with seven openings of 72 feet each in the clear, to be spanned by iron girders of the Whipple-Murphy type. The old bridge had four openings of 70 feet and two of 15 feet.

3. The Merumpoya bridge is designed with three openings of 72 feet each, spanned by girders similar in all respects to those proposed for the Iritty bridge. The old bridge had three openings of 36 feet.

4. The reasons for this large increase of waterway are stated by Mr. Anderson in his reports, and have been more fully explained to me in person. I am satisfied as to the accuracy of his calculations.

5. Since the estimates reached me, Mr. Anderson has slightly altered one of the formulæ for calculating the dimensions of the iron work, with the result that the weight of each complete 72-feet girder is reduced from 21·17 tons to 19·93 tons. He has thus been able to reduce the cost of the Iritty bridge from Rs. 78,000 to Rs. 76,600, and the cost of the Merumpoya bridge from Rs. 49,000 to Rs. 48,000.

6. These alterations have my full concurrence, and the estimates are recommended for sanction.

Ootacamund,
27th May 1884.

(Signed) J. SHAW-STEWART, Col., R.E.,
Chief Engineer, P.W.D.

Order—dated 2nd June 1884, No. 1373 W., Public Works.

The estimates as shown below are sanctioned for execution by the Malabar Local Fund Board :—

	RS.
Bridge over the Iritty river	76,600
Do. do. Merumpoya river	48,000

2. This sanction has been registered as Local No. 10 W. of 1884-85, and classified as Communications, Original Works.

(True Extract.)

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintending Engineer, IV Circle.
" Board of Revenue, with eighty-two enclosures.
" Financial Department.

Exd. E. Fernandez.
Spare Copies

2668/A

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1884) Madras.

PUBLIC WORKS.

Dated June, 2nd.

Recd. *Encl.*

G.O., 2nd June 1884, No. 1373 W.

JUNE.

Bridges

Estimates, amounting to Rs. 1,24,600, *for constructing* — over the Iritty and the Merumpoya rivers, Malabar district, sanctioned for execution by the Local Fund Board.

6th October 1884, No. 2376, Financial.

2668
5

GOVERNMENT OF MADRAS.

FINANCIAL DEPARTMENT.

Read—the following paper:—

From W. MAYLOR, Esq., M.I.C.E., of Messrs. Pierce, Leslie and Co., to the Secretary to Government, Public Works department, dated Calicut, 12th September 1884.

I have the honor to inform you that in July 1877 I received an official notice from Colonel Kennedy, the then District Engineer of Malabar, inviting tenders for the construction of an iron bridge over the river at Irrity on the road between Cannanore and Coorg, to consist of four bays or spans of 71 feet each and two of 30 feet each. I had previously obtained several detailed designs of girders for such a bridge from eminent bridge-makers in England, for which I paid £60.

2. Colonel Kennedy having selected and slightly modified one of the designs, I offered to supply and deliver at Cannanore the whole of the iron work (105 to 110 tons) for the sum of Rs. 31,500; this included the cost of testing each span at Cannanore. My tender was considered, by Colonel Kennedy and Mr. Logan, to be the most favorable, and I was informed that the Chief Engineer, Public Works department, had approved of the design and tender, and that the contract would be placed in my hands as soon as the Local Fund Board could arrange as regards funds, and as I was then on the point of leaving for Europe I gave Mr. Robert Stanes, of Coimbatore and Coonoor, a power of attorney to sign the contract deed on my behalf.

3. The next information I received about this bridge was that Mr. Anderson (Engineer of the Malabar Local Fund Board) had arranged to examine the waterway, the result of which led to the proposed lengthening of the bridge so as to comprise 7—72 feet spans.

4. With a view to save the expense and delay in preparing working drawings of such bridges in this country, and as Mr. Anderson wished to have the benefit, advice and experience of an eminent engineer in London (Mr. G. B. Bruce, a prominent member of the Institute of Civil Engineers), the heads of an agreement were arranged and settled on the 11th October 1882 between Mr. Logan (the President of the Malabar Local Fund Board at that time) and myself, which it was thought would ensure the most approved designs being obtained, and the work and materials being thoroughly inspected before shipment, on terms much more favorable than if the orders were sent through the India office and with far less delay.

5. When Mr. Logan left this district for Travancore I informed Mr. Galton of the arrangement which had been made and sent a copy of the "heads of agreement" above referred to. On the 23rd July last my firm informed the President of the Local Fund Board that they would be glad to send in tenders for supplying the iron work for the Irrity and other bridges if they were furnished with the necessary particulars. The President, in reply, stated that the Government had not yet passed orders on his proposal that the iron work should be obtainable by private contract instead of through the store department of the India office. I learned privately only yesterday that Government have decided to get the bridge materials through the Secretary of State for India.

6. A few weeks ago I sent particulars of the iron work required for the Irrity and Merumpoya bridges to the London branch of my firm, which has since received tenders from first-class bridge-makers, and I received a telegram a few days ago authorizing me to tender for the work and undertaking to ship two out of the seven spans in three months from receipt of a telegraphic reply and the remainder in four months.

5

7. If the work is ordered through the India Office Stores department much delay will occur, and I venture to think the cost will be much greater.

8. Personally I do not regret the loss of a small commission my firm would have earned if their tender had been received and accepted, but, after all the trouble I have had, I cannot help feeling that my services have not been appreciated to the extent that I had, good reason to expect.

9. I enclose extract of the "Proceedings of the Madras Government, Financial department, dated 4th February 1876."

P.S.—I am sending a press copy of this letter to the President of the Local Fund Board.

ENCLOSURE.

EXTRACT from the "Proceedings of the Madras Government, Financial department, dated 4th February 1876."

"Mr. Maylor has carried out several contracts very satisfactorily." . . . . "Inspection of the iron work at home is not, in the opinion of the Chief Engineer, necessary when all the material is ordered and shipped on the contractor's own responsibility and risk. It will certainly cause delay, perhaps additional expense. In fact, unless the Local Fund Board will place themselves in the hands of Mr. Maylor, and trust him entirely in his double capacity of contractor and engineer, the Chief Engineer does not see how they can escape paying a contribution on account of Public Works supervision, whether that be exercised by an India Office Inspector, the Superintendent of the Public Works Workshops at Madras, or the Superintending Engineer or Range officer of Chingleput. Mr. Maylor's competence as an engineer is as undoubted as his good faith as a business man."

FORT ST. GEORGE,
12th January 1876.

(Signed) G. W. WALKER, Major-General, R.E.,
Chief Engineer, P.W.D.

No. 684 E.

Transferred to the Financial department.

2. It will be seen from G.O., No. 1373 W., dated 2nd June 1884, that the bridge referred to is a work which has been sanctioned for execution by the Local Fund Board, Malabar.

OOTACAMUND,
16th September 1884.

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Government, P.W.D.

To the Financial department with original letter.

ORDER—dated 6th October 1884, No. 2376, Financial.

Mr. Maylor will be informed that under orders* from the Government of India the Government of Madras have no alternative but to indent on the store department of the India office for the articles in question. The rules, indeed, make an exception of any case in which, for special reasons, it may be more economical to buy stores of European manufacture in India; but in the present case there is nothing before Government to show that a substantial saving would thereby be effected.

* In G.O., 31st January 1883, No. 190, Financial.

(True Extract.)

Chief Secretary.

To the Public Works department.
„ President of the Local Fund Board, Malabar, with copy of G.O., dated 31st January 1883, No. 190.

Exd. C. Howarth.

2668/6

6

G. O. No 1373 W. D/ 2-6-84

Govt. of (1884) Madras.

FINANCIAL.

B Communicated for information to S.E. IV Circle.

CH
22-10-84

US
24.10.84

1/5/11

Issued

Recd. 21/10/84 *Encl.*

G.O., 6th October 1884, No. 2376.

OCTOBER.

Local Funds—Bridges.

Informing, with remarks, Mr. W. Maylor that, under orders from the Government of India, this Government have no alternative but to indent on the store department of the India office for iron work required for the Irrity and other bridges in Malabar.

S.E. IV Circle

D. 2/W 31-10-84.

o/s 82/10

18.

M.S. copy to go at once to S.E. IV. leaving printed copy of Pro: to follow in due course.

US
24.10.84

2668/7

7

168

G. O. No 1373 W. Dy 2-6-84

Class. XS

INDIAN TELEGRAPH.

Local No. 1091

To (Station) Ootacamund

From (Station) Triplicane Madras

Words.	Day.	Hour.	Minute.	Official Instructions.
23/12	29	14	15	urgent

To (Person) Mr E. A. Smith

From (Person) Second Assistant Clerk Public Works Secretariat

2666 2667 and
2668 N° of
this date.

2668/8

8

C J Harris

Recd. from
At Hrs. Mts. By L. N.
Date

Sent to
At Hrs. Mts. By L. N.

OOTACAMUND 29-10-84

Telegraph Master.

P No 4000 -G. T. Press, -No. 240, -23-6-83, -1000000

G. O. No 1373W. Dt 2-6-84

M. D. 18.

HEADING.
Accounts

No. *1052* M. W.

2668/9

GOVERNMENT OF INDIA,

MILITARY DEPARTMENT.

It is requested that the above heading, with number and date of this communication, may be quoted in any subsequent correspondence on the subject.

Simla, the *20th October* 1884.

To

THE SECRETARY TO THE GOVERNMENT OF MADRAS,
PUBLIC WORKS DEPARTMENT.

SIR,

In reply to your letter No 1839 W dated 29th July 1884, I am directed to state for the information of the Governor in Council that the Government of India are pleased to re-allot the sum of Rupees 6,200/, struck out of the preliminary issue of the Madras Military Works budget estimate of the current year, for the construction of the bakery at Wellington.

2 This sum includes the authorized percentage for Establishment and Tools and Plant.

3 The plans and estimates received with your letter under reply

9 are

are herewith returned as requested. 9875

I am,
Sir,
Your Most Obedt. Servt.,

J. E. Broadbent Captain, Rd 21/10/84
For Secy. to the Government of India.

Enclosures 10
& 3 tracings
and abstract estimate
in duplicate

Copy to:

The Accountant Genl., P. W. Deptt.

Received 9/10/84

~~Buildings & Roads~~
Military Works WS

No. 2668 W a/29th Octr./84.
7/11

WS

1838/1839 W D 29/7/84
B 2440/2441 W D 7/10/84
888 W D 31/3/84
2663 W D 22/9/83

A. Communicated to the S. E. IV Circle for information & guidance with reference to Pro. of Govt. under date the 29th July 1884 No 1838 W.

29th July 1884 No 1838 W.

WS
8/7/11

S. E. IV Circle with 29.10.84
Plans & Estimates
Ex: Br. A with duplicate
Abstract Estimate
Milty. Deptt.

2668/10

10

9075

Govt. of (1884) Madras.

PUBLIC WORKS.

60

Press 1—11—84

Dated

Recd.

Encl.

G.O., 29 Oct 1884, No. 1660

Bakery at Wellington

Letter from the [illegible] reallotting funds for the — Comd of the Chief Engr.

70/4

54.35

Jd 7/11

J.O. 30/10