(1) Number of pages 64

(2) Date of repair 2 88

(3) Initials of the Referencer ✓

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

PUBLIC WORKS. DEPARTMENT

G.O. No. 2929. W.
B.P. No.

Press.
Mis.

Dated 6. 11 - 1886 ~~198~~.

Not to be folded or roughly handled.

Archives —1 10,006-9 80

6th November 1886, No. 2929 W., Public Works.

2929

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

Read—the following letter from Colonel J. BEATTY, R.E., Superintending Engineer, IV Circle, to the Chief Secretary to Government, dated Coimbatore, 15th October 1886, No. 327 M. :—

I have the honor to submit, herewith, for the sanction of Government, revised estimates of the Iritti and Merumpoya bridges, amounting respectively to Rs. 95,248-3-7 and Rs. 67,412-8-1.

2. The original estimates were sanctioned in G.O., No. 1373 W., of 2nd June 1884, and amounted to Rs. 76,600 * for the Iritti bridge, and Rs. 48,000 for the Merumpoya bridge.

* *Vide* G.O., No 1373 W., of 2nd June 1884.

3. So that the excess now requiring sanction is Rs. 18,648-3-7 in the case of the Iritti bridge and Rs. 19,412-8-1 for the Merumpoya.

4. The explanation of this excess is fully set forth in the correspondence embodied in G.O., No. 594 (L.F.) Financial, dated 28th May 1886, and G.O., No. 1065 (L.F.) Financial, dated 30th August 1886.

No. 631, Financial.

Transferred to the Public Works Department for disposal.

(By Order.)

(Signed) E. S. LAFFAN,
Under Secretary.

Madras,
23rd October 1886.

Order—dated 6th November 1886, No. 2929 W., Public Works.

The revised estimates for the undermentioned bridges, in the Malabar district, ar sanctioned in supersession of the estimates for the respective bridges sanctioned in G.O., No. 1373 W., dated 2nd June 1884—

	RS.	
Bridge over the Iritti river ...	95,248	Local No. 27 W. of 1886-87
Do. over the Merumpoya river ...	67,412	„ „ 28 W. of „

(True Extract.)

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

To the Superintending Engineer, IV Circle.
„ Examiner, Public Works Accounts.
„ Financial Department (L.F.), with two enclosures.

Exd. E. Fernandez.

Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1886) Madras.

PUBLIC WORKS.

Dated November, 6th.

Recd.

Encl.

G.O., 6th Nov. 1886, No. 2929 W.

NOVEMBER.

Iritti and Merumpoya Bridges

Revised estimates for the —, in the Malabar district, sanctioned.

2/28

GOVERNMENT OF MADRAS.

FINANCIAL DEPARTMENT.

29th November 1878, No. 2128.

Reduction of Expenditure.

Read the following :—

No. 196. *Resolution of the Government of India, Financial Department, dated 9th November* 1878, *No.* 4053.

No. 197. ORDER THEREON, 29th November 1878, No. 2128.

The Government of India having invited the co-operation of this Government in devising such measures as may be found possible for the reduction of the ordinary expenditure of the country within the narrowest limits, His Grace the Governor in Council resolves to impress upon all Departments and Officers that the utmost economy must be effected by them, with the least possible delay, in all expenditure whether Imperial, Provincial, or Local.

2. In the Revenue, Military, and Public Works Departments, orders will be forthwith issued to stop immediately all expenditure,

which is not absolutely necessary,
or to which the Government is not committed,
or the discontinuance of which will not cause disproportionate loss and waste,
and those works which it is thought necessary to carry on will be at once

reported for orders of Government by the officers concerned.

3. No new expenditure, which is not indispensable, will be sanctioned, and applications for loans to Municipal or other Corporations, or to private persons will be entertained only for objects which cannot be postponed.

4. No proposals for increase of salaries or of establishment, must be submitted unless they are of real urgency.

5. The Budget Estimates for 1879-80 will be passed with the utmost economy and no increase over the average ordinary actual expenditure of five years must be proposed which is not absolutely dictated by emergent State necessities.

6. His Grace the Governor in Council relies on the loyal co-operation of all public officers in endeavouring to assist the requirements of the present exigency.

(True Extract.)

G Master
Acting Chief Secretary.

To the Revenue Department.
,, the Military do.
,, the Public Works do.
,, the Board of Revenue.
,, the Honorable the Judges of the High Court.
,, all Heads of Departments.

Exd. T. O'Connor.

No 4580 W. d/ 30 Nov 78

Communicated to the officers of the Public Works Dept. for information and guidance.

Separate orders have been issued restricting expenditure on Public Works.

30.11.78

S. Engr. Hd. Qrs. with Sec. to Board
C. E. for I.
Ex. S. W. D.
C. E. for R.
Ex. [illegible]
with 3 Sec. to Board
[illegible] 30.11

3/2323

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

21st April 1879, No. 1,190 W.

Buildings and Roads.
Civil Works.

Read the following paper:—

No. 170. Proceedings of the Board of Revenue, dated 16th December 1878, No. 3,367.

From W. LOGAN, Esq., President of the Local Fund Boards, Malabar, to the Acting Secretary to the Board of Revenue, dated Calicut, 12th November 1878, No. 64.

I HAVE the honor to forward, herewith, for sanction of the Board and Government, an estimate with plan,* &c., for Rupees 63,330 for dismantling and rebuilding the abutments and wing walls of the Irrity bridge on the Coorg road in the Kotayam Taluk, Tellicherry Circle, and erecting a warren girder superstructure of iron four spans of seventy-one feet and two of thirty feet. Copy of the Resolution (paragraph 2) of the Tellicherry Circle Board passed at their meeting held on the 24th and 25th September last, sanctioning the above estimate, &c., is enclosed herewith.

2. For funds for this work the Tellicherry Local Fund Board has resolved to apply to Government for a loan to the amount of the estimate, to be repaid out of the toll collections at the bridge in the manner suggested by me in my letter to Revenue Board, No. 798-C, dated 6th March 1876, embodied in G.O., No. 1,703, dated 13th June 1877. The work is a very important one as it lies on the high road from the coast to Coorg and Mysore, and the want of the bridge was much felt during the height of the famine last year owing to the difficulty and expense of getting grain up the ghat. I request that Government may be moved to obtain sanction to the grant of the loan applied for.

* Under a separate cover.

ENCLOSURE No. 1.—Estimate.

ENCLOSURE No. 2.—Specification.

ENCLOSURE No. 3.—Map.

ENCLOSURE No. 4.—Extract from Proceedings of the Local Fund Board.

The plan and estimate, amounting to Rupees 63,330, for dismantling and rebuilding the abutments and wing walls of the Irrity bridge on the Coorg road and erecting a warren girder superstructure of iron are submitted to Government with reference to their Order, Financial Department, dated 13th June 1877, No. 1,703.

2. The President states that "the work is a very important one as it lies on the high road from the coast to Coorg and Mysore, and that the want of the bridge was much felt during the height of the famine last year," and requests that Government may be moved to obtain sanction for the grant of a loan to enable the Local Fund Board to proceed with the work, there being no money available out of the Local Funds of the Tellicherry Circle in which the work is situated. There is no prospect of a loan being obtained at present under the terms of G.O., dated 29th November 1878, No. 2,128, and the execution of the work must be postponed till funds can be found.

(A true Copy and Extract.)

(Signed) J. STURROCK,
for Acting Secretary.

No. 171.

ORDER THEREON, 21st April 1879, No. 1,190 W.

THE plan and estimate, amounting to Rupees 63,330, submitted by the Board of Revenue, for the reconstruction of the Irrity bridge on the Coorg road, in the Tellicherry Local Fund Circle, are sanctioned.

2. This sanction has been registered as Local No. 3 B of 1879-80.

(True Extract.)

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

To the Superintending Engineer, Fourth Circle.
" Examiner of Public Works Accounts.
" Board of Revenue.
" Financial Department.

Ex'd. C. Howarth.
Spare Copies

4/2829

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of [1879] Madras.

PUBLIC WORKS

To

THE SUPERINTENDING ENGINEER,
FOURTH CIRCLE,
&c., &c., &c.

Dated April 21st.

Issued

Encl.

Recd.

G. O., 21st April 1879, No. 1,190 W.

APRIL.

Nos. 170-171.

Irrity Bridge on the Coorg Road, Malabar District.—Sanctions plan and estimate for the reconstruction of the —.

5/2828

GOVERNMENT OF MADRAS.

FINANCIAL DEPARTMENT.

19th May 1879, No. 967.

Local Funds—Roads.

Read the following paper :—

No. 216. *Proceedings of Government in the Public Works Department, dated 21st April* 1879, *No.* 1190-*W* (*Buildings and Roads—Civil Works*).

ABSTRACT.—Sanctions plan and estimate for the reconstruction of the Irrity bridge on the Coorg road, Malabar District.

No. 217. ORDER THEREON, 19th May 1879, No. 967.

As there is no prospect of a loan being made by the State, His Grace the Governor in Council would suggest that the Local Fund Board take into their earnest consideration the expediency of raising the money required for the work in the local money market by debentures or otherwise, the terms being submitted for the approval of Government.

(True Extract.)

H. B. GRIGG,
Acting Under Secy. to Govt.

To the Board of Revenue.
„ President of the Local Fund Board, Malabar, with Public Works G.O., No. 1190.
„ Public Works Department.

Exd. T. O'Connor.

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of [1879] Madras.

PUBLIC WORKS

To

THE SUPERINTENDING ENGINEER,
FOURTH CIRCLE,
&c., &c., &c.

Dated April 21st.

Issued

Recd. *Encl.*

G. O., 21st April 1879, *No.* 1,190 W.

APRIL.

Nos. 170-171.

Irrity Bridge on the Coorg Road, Malabar District.—Sanctions plan and estimate for the reconstruction of the —.

5/228

GOVERNMENT OF MADRAS.

FINANCIAL DEPARTMENT.

19th May 1879, No. 967.

Local Funds—Roads.

Read the following paper :—

No. 216. *Proceedings of Government in the Public Works Department, dated 21st April* 1879, *No.* 1190-*W* (*Buildings and Roads—Civil Works*).

ABSTRACT.—Sanctions plan and estimate for the reconstruction of the Irrity bridge on the Coorg road, Malabar District.

No. 217. ORDER THEREON, 19th May 1879, No. 967.

As there is no prospect of a loan being made by the State, His Grace the Governor in Council would suggest that the Local Fund Board take into their earnest consideration the expediency of raising the money required for the work in the local money market by debentures or otherwise, the terms being submitted for the approval of Government.

(True Extract.)

H. B. GRIGG,
Acting Under Secy. to Govt.

To the Board of Revenue.
„ President of the Local Fund Board, Malabar,
with Public Works G.O., No. 1190.
„ Public Works Department.

Exd. T. O'Connor.

Mis: No 1527 W d/4th June

Commd to the S.E.
Fourth Circle for informat

(Sgd) W.

S.E. Fourth Circle

BOARD OF REVENUE, 11TH SEPTEMBER 1882, No. 2267.

6/2829

PROCEEDINGS OF THE BOARD OF REVENUE.

READ—again the following Proceedings of the Board of Revenue, dated 5th August 1882, Mis. No. 5900 :—

Read—the following letter from C. L. B. CUMMING, Esq., President of the Local Fund Board, Malabar, to the Secretary to the Board of Revenue, dated Calicut, 4th May 1882, No. 121 :—

In forwarding the enclosed extract from the Proceedings of the Local Fund Board, Malabar, at a meeting held on the 3rd April last, and the plans* and estimates of the Iritti bridge for the sanction of Government, I have the honor to state that funds will be available from the general savings effected by the curtailment of the maintenance grant as proposed by the Local Fund Board at their above meeting, copy of which resolution has been already submitted to the Board with my letter, No. 5, dated 4th ultimo.

* By banghy post.

ENCLOSURE No. 1.—Extract from Proceedings of the Local Fund Board.

ENCLOSURES Nos. 2 to 4.—Plans.

ENCLOSURES Nos. 5 to 14.—Estimates, &c.

Reference on the above, dated 23rd May 1882.

It is observed that an estimate for reconstructing the Iritti bridge was sanctioned in G.O., dated 21st April 1879, No. 1190, Public Works Department. The President is requested to state what led to the preparation of the present estimate. He will also report on the point adverted to in paragraph 5 of Board's Proceedings, dated 2nd July 1881, No. 1241.

(Signed) C. D. MACLEANE,
Acting Sub-Secretary.

Read—the following letter from W. LOGAN, Esq., President of the Local Fund Board, Malabar, to the Secretary to the Board of Revenue, dated Calicut, 30th June 1882, No. 411 :—

With reference to Revenue Board's General Register No. 2560 of 1882, I have the honor to enclose copy of the Local Fund Engineer's letter, No. 152, dated 21st instant, which explains the grounds on which the second estimate for the reconstruction of the Iritti bridge was prepared.

2. With reference to paragraph 5 of Board's Proceedings, dated 2nd July 1881, No. 1241, I beg to state that if the Local Fund Board accept assistance from the Coorg Government for putting up this bridge, the latter will probably ask for a share of the toll on it. I think that on the whole the Local Fund Board's interests will be best served by erecting this bridge and taking the whole of the tolls.

Read—Proceedings of the Board of Revenue, dated 5th August 1882, Miscellaneous No. 5900.

Memorandum—dated 29th August 1882, No. 1566-C, Public Works.

In returning the plans and estimates for the proposed iron girder bridge across the river Beltangadi on the road from Mangalore to the Kadur District, and for the reconstruction of the Iritti bridge in the Malabar District, the Chief Engineer has the honor to remark that no detail report has been furnished. Detail calculations as to drainage area, rainfall flood discharge at bridge site, together with a sketch survey showing catchment basin of river and that of stored water, with section of the river at site and area of discharge highest flood, cross sections at points above and below the bridge site and longitudinal section of bed level of the river at least a mile above and below the site, should also be furnished.

2. Sections of trial-pits for foundations should be supplied. The nature of soil met with and that on which the foundations are to rest should be reported as laid down in Chapter VII of the Madras Public Works Code.

3. It is suggested that the attention of all Local Fund Boards be called to the necessity for complying with the instructions contained in paragraphs 970 to 972 of the Public Works Code in regard to the report which should invariably accompany all projects submitted to this office for check and for the sanction of Government.

(By Order.)

(Signed) ROSS THOMPSON, Lt.-Col., R.E.,
Acting Deputy Chief Engineer, P.W.D.

To the Secretary to the Board of Revenue.

Resolution—dated 11th September 1882, No. 2267.

Communicated to the Presidents, Local Fund Boards, Malabar and Canara Districts, with the request that the information sought by the Deputy Chief Engineer may be supplied.

2. With reference to paragraph 3 of the Chief Engineer's memorandum, it is observed that the attention of the Presidents of Local Fund Boards has already been called to the suggestion in paragraph 2 of Board's Proceedings, dated 10th May 1882, No. 1288.

(True Copies and Extract.)

Acting Sub-Secretary.

To the President, Local Fund Board, Malabar, with thirteen enclosures.
" " " Canara, with six enclosures.
Copy to all other Presidents, Local Fund Boards.
" the Chief Engineer, Public Works Department.

Exd. A. F. Goodall.

8/2829

1882.

Board of Revenue,

MADRAS.

Recorded.

6-10-82

M. G.O. 2929W 26-11-86

Proceedings, 11th Sept. 1882, No. 2267.

Memo No. 1566C of 29. 8. 82
.. .. 1299C of 27. 6. 82
G.O. No. 1769W of 18. 7. 82
Bd. Pros: 1026 of 11. 6. 81
G.O. No. 1190W of 21. 6. 79.

Communicating for compliance to the Presidents, Local Fund Boards, Malabar and Canara, memorandum from the Deputy Chief Engineer, Public Works Department, requesting certain information in connection with the proposed *iron girder bridge across the Beltangadi River* in South Canara and the reconstruction of the *Iritti Bridge* in Malabar.

for the disposal

Entd. in Receipt Regr

GOVERNMENT OF MADRAS.

FINANCIAL DEPARTMENT.

Read—again the following papers:—

G.O., dated 28th May 1886, No. 594 L.F., Financial.

Abstract.—Ordering that the Government of India be addressed as to procuring in India the iron-work required for Irrity and Merumpoya bridges in Malabar.

G.O., dated 25th June 1886, Mis. No. 705-A. L.F., Financial.

Read—the following telegram from J. E. O'CONOR, Esq., Assistant Secretary to the Government of India, Department of Finance and Commerce, to the Chief Secretary to the Government of Madras, dated Simla, 18th June 1886, No. 1465:—

Your 595 L.F. of 28th May. Iron-work may be procured from Burn and Co. of local manufacture.

Order—dated 25th June 1886, Mis. No. 705-A. L.F., Financial.

Ordered that the following telegram be despatched to the President, District Board, Malabar:—

Your 133 of 30th April. India sanctions purchase of iron-work from Burn and Company. Report further action.

(True Extract.)

(Signed) E. F. WEBSTER,
Chief Secretary.

G.O., dated 28th July 1886, Mis. No. 882 L.F., Financial.

Read—the following letter from H. M. WINTERBOTHAM, Esq., President, District Board, Malabar, to the Chief Secretary to Government, dated Calicut, 15th July 1886, No. 376:—

In reply to Government telegram, dated 12th July 1886, I have the honor to inform you that a draft of the proposed agreement with Messrs. Burn and Company has been forwarded to that firm, together with drawings and specification and bills of quantities, and their formal acceptance of the contract is now awaited.

2. I enclose for the information of Government a copy of the draft agreement, and of the covering letter with which it was forwarded.

Enclosures.

From H. M. WINTERBOTHAM, Esq., President, District Board, Malabar, to Messrs. BURN AND CO., dated Calicut, 8th July 1886, No. 949.

From Messrs. Burn and Co.—

Telegram, dated 9th April 1886, and letter No. H-2—471, dated 9th April 1886.
Telegram, dated 17th April 1886, and No. H-857, of 13th April 1886.
Telegram, dated 13th April 1886.
No. H-2—417, dated 17th April 1886.
,, H-291, dated 25th May 1886.
,, H-1011, dated 28th June 1886.

From District Board Engineer to Messrs. Burn and Co.—

No. 9, dated 2nd April 1886.
,, 95, ,, 10th ,, ,,
,, 622, ,, 7th June ,,
,, 573, Telegram, dated 2nd June 1886.
,, 847, dated 27th June 1886.

With reference to the telegrams and letters marginally noted, which have passed between yourselves and the Engineer of the Malabar District Board, I have now the honor to enclose for your acceptance the plans, specifications, bills of quantities, and draft form of agreement in respect of the metal superstructure of the two bridges which you have tendered to supply at the port of Tellicherry for the sum of Rs. , being at the rate of Rs. 245 per ton.

2. The district board proposes that nine-tenths of the price shall be paid to you within 14 days of the production (*a*) of the Consulting Engineer's certificate, (*b*) of the bills of lading showing that the material has been put on board, (*c*) of evidence that the vessel has arrived at Tellicherry with the said material.

The remaining one-tenth is made payable on the completion of the bridges and on the application of the test set forth in the concluding paragraph of the specification.

3. The board have felt a difficulty in fixing a time for payment. They naturally would desire to make payment after their Engineer had had time to satisfy himself of the correctness of the quantities and of the good condition of the material upon the landing of the same, but as it is hard to tell beforehand what time would be required for the Engineer so to satisfy himself, the board have only stipulated that payment of nine-tenths of the price should be deferred for 14 days after the arrival of the vessel.

As regards the remaining one-tenth, the board will use all practicable despatch in the erection of the bridges, which will probably occupy from four to five months, but it is impossible to fix an exact date, and it seems reasonable that the Board should retain some hold upon the contractors until the bridges have been tested.

If you can depute one or two qualified Inspectors in whom you have confidence to carry out the erection, under the control of the board's Engineer, the board will be prepared to pay them Rs. 250 a month each.

4. The board believe that you will, as shippers of the material, be in a position to procure its insurance from marine and other risks during landing between the ships and the shore, and they have provided that this shall be done by you.

5. It is of the utmost importance that the material should be delivered in time to admit of the bridges being put up before the monsoon, which breaks in June next year, and it is hoped that there may be no delay in the completion of this agreement. If you are able to agree to the terms, please take the necessary steps to execute the agreement in a formal manner, and I will thereupon do the same on behalf of the district board.

An Agreement made the day of between carrying on business at Calcutta as co-partners under the name or style of Burn and Company (hereinafter called the contractors) of the one part, and President of the District Board, Malabar Circle (hereinafter called the President), acting for and on behalf of the said district board, of the other part.

Witnesseth that for the consideration hereinafter mentioned, and under the penalty expressed in a bond bearing even date with these presents, and hereto annexed, the contractors do hereby for themselves jointly and severally, and for their respective heirs, executors and administrators, covenant with the President and his successors, and the President doth hereby covenant with the contractors, their executors, administrators and assigns as follows:—

(1) *The contractors* will furnish at their own proper cost and expense all the materials and labor necessary to completely construct, erect, finish at the workshop in England in a substantial and workmanlike manner, take down after acceptance by the Consulting Engineer hereinafter mentioned and deliver from on board a vessel in the port of Tellicherry on or before the expiration of five calendar months from the date of these presents, the whole of the metal works required for, and in connection with, the reconstruction of the superstructure of the Iritty and Merumpoya bridges, situate on the trunk road between Mercara and Tellicherry aforesaid, in conformity with the specification, bills of quantities and plans hereunto annexed and numbered and subject to the conditions hereinafter mentioned, and in default thereof, will pay to the President or his successors on and for every day after the day of 1886, until this contract shall be completed, a sum of Rupees fifty as liquidated damages.

10/289

(2) *The contractors* shall give to the President or his successors ten clear days' notice of the shipment of the said metal-work and of the probable arrival of the same at the port of Tellicherry aforesaid, and shall make such arrangements with the shippers of the metal-work as shall enable the President to complete the landing of the whole of the said metal-work within a reasonable time, and within the capacity of the port of Tellicherry aforesaid. The contractors shall appoint the Consulting Engineer of the Oudh and Rohilkund Railway to inspect the materials and workmanship of the said metal-work, and the said Engineer shall, after subjecting all portions of the work to proper inspection, grant a certificate to the effect that the said materials and workmanship correspond in every particular with the said specification, bills of quantities and plans numbered, and until the production of the said certificate the contractors shall not be entitled to receive the consideration money hereinafter mentioned.

(3) *The President* will pay to the contractors, for the execution by them of the said works the sum of Rs. on the terms and at the times next hereinafter mentioned.

(4) *The President* will on the production to him or his successors of a certificate signed by the said Consulting Engineer aforesaid that the said materials and workmanship correspond in every particular with the said specification, bills of quantities, or estimates of metal-work, and plans numbered and with this contract as hereinbefore mentioned, and also on the production to the President or his successors of evidence that the said metal-work has been duly and properly shipped, and that the vessel containing the same has arrived in the port of Tellicherry aforesaid, pay to the contractor within 14 days of the arrival of the said vessel the sum of Rupees being nine-tenths of the whole consideration money of Rs. , and will further pay to the contractors on the said bridges being completely erected, put up and finally tested as mentioned in the concluding paragraph of the said specification, the sum of Rs. , being the remaining one-tenth of the whole consideration money aforesaid.

(5) *If at* any time during the continuance of this contract, the President shall be of opinion that the terms thereof have not been complied with by the contractors, the contractors shall be, and remain liable to the President for all damages occasioned to him by such non-compliance, irregularity or negligence, and all moneys or reserved percentage that may be due under these presents shall be forfeited to the President.

(6) *And it* is hereby expressly declared and agreed that the contractors shall have no dealings with any person connected with or engaged in the service of the said district board of Malabar, in connection with this contract nor to any benefit to arise therefrom, and any violation of this clause, on the part of the contractors, shall render the said contractors liable to forfeit all moneys which may be due to them under this contract.

(7) *All moneys* which may from time to time become payable by the contractors for non-fulfilment of this contract shall from the time of their becoming payable be considered as liquidated damages due to the President, and may be deducted by the President from any moneys which may be due to the contractors on account of the execution of the aforesaid works, as if the same had been moneys paid by the President to the contractors on account.

(8) *And it* is hereby further agreed that the contractors or their agents shall arrange for the insurance and shall take out the necessary policies for insuring the said metal-work against marine and other risks during the process of landing the same from the vessel in the port of Tellicherry aforesaid.

(9) *And it* is hereby agreed by and between the said parties hereto, that in the event of the said metal-work or any part thereof being lost or damaged in course of landing aforesaid, the contractors shall supply in the most expeditious manner possible duplicates of such materials so lost or damaged at such reasonable rates as may be decided by the District Board Engineer of the Malabar Circle aforesaid.

In witness whereof the parties hereto have hereunto set their hands and seals the day and year first above written.

BOND.

Know all men by these presents that we of are held and firmly bound unto the President of the District Board, Malabar circle (hereinafter called the President), and his successors, in the penal sum of Rs. 5,000 of lawful money of British India to be paid to the President for which payment we bind ourselves our executors and administrators by these presents sealed with our seals dated this day of one thousand eight hundred and

The condition of the above written bond is such that if the said their executors or administrators shall well and truly execute the work described in a certain specification, dated the day of and numbered and referred to in a certain agreement signed by the said and dated the day of and shall well and truly perform and abide by all the terms and conditions in the said agreement and specification contained to be performed and abided by on the part of the contractors then the above-written bond or obligation shall be void, otherwise the same shall be and remain in full force and virtue.

Signed, sealed and delivered by the said in the presence of	Signature of Contractor. Signature of two witnesses.

Order—dated 28th July 1886, Mis. No. 882 L.F., Financial.

Recorded.

2. No final agreement should be entered into without the previous sanction of Government.

(True Extract.)

(Signed) E. F. WEBSTER,
Chief Secretary.

To the President, District Board, Malabar.

READ—also the following papers:—

Telegram from the Secretary of State, to the Governor of Madras, dated 10th July 1886.

My telegram, 24th March, Irrity bridges, 5,200 was steel if iron 4,500.

From H. M. WINTERBOTHAM, Esq., President, District Board, Malabar, to the Chief Secretary to Government, dated Calicut, 29th July 1886, No. 433.

In continuation of my letter, dated 15th July 1886, No. 376, I have the honor to forward herewith a copy of the reply received from Messrs. Burn and Co., and of the telegram which I thereupon despatched to them.

2. If the bridges are to be put up during the next working season, not a day is to be lost, and I therefore refused to extend the time to six months or to reduce the penalty in case of delay.

3. Messrs. Burn and Co. propose to add on 10 per cent. to their original tender to provide for loss by exchange, which has fallen from 1*s*. 6*d*. to 1*s*. 4⅞*d*. This fall represents only 6¼ per cent. and it appeared to me that the board is likely to gain by guaranteeing Messrs. Burn and Co. against loss by exchange falling below 1*s*. 6*d*. rather than by accepting the enhancement of 10 per cent. I have therefore proposed this guarantee.

4. On other points I have agreed on behalf of the board—

(*a*) to pay Rs. 10,000 in advance;
(*b*) to take the risk of landing the material from the steamer;
(*c*) to pay the agreed price per ton on the invoice weight, provided that the difference be not more or less than 5 per cent. above or under the estimated weight.

ENCLOSURES.

From Messrs. BURN AND CO., to the President, District Board, Malabar, Calicut, dated No. 7, Hastings Street, Howrah, 21st July 1886, No. H-2—910.

We have the honor to acknowledge receipt of your No. 949, but we regret that, owing to the delay in accepting our tender, it is now impossible for us to carry it out at the rate tendered four months ago owing to the great fall in exchange. At the date of our tender exchange was 1*s*. 6*d*.; it is now at 1*s*. 4⅞*d*. We have read the contract deed and are prepared to execute it if the following modifications we suggest for your consideration are made in it, the reasons for which we have fully explained in our No. 907 of even date to the address of your Engineer:—

11/258

1st.—That the rate per ton be Rs. 269-4-0 for delivery ex steamer at Tellicherry, being the difference of exchange added to former rate.

2nd.—That the sum to be paid us be approximately Rs. 55,000, the sum being calculated at Rs. 269-4-0 per ton on the actual invoice weights which are not to differ from Engineer's by more than 5 per cent.

3rd.—That owing to the long time you require before making final payment, that you make us a payment of Rs. 10,000 to account on the execution by us of the contract deed.

2. It will be impossible for us, we fear, to arrange for the landing of the material from the ship to the shore or to include this in the insurance; but this we think you will have no difficulty in contracting for locally. We note what you say about sending you inspectors and shall look into this later on. We think the penalty should be reduced to 25 per day, and time for completion to be six calendar months after receipt of final orders. If you can agree to these modifications we will have the deed drawn at once.

3. Our offer to remain open for a fortnight after you receive this; but if there is longer delay, we must ask your permission to confirm our offer. We trust the modifications we have suggested will meet with your approval and sanction.

From Messrs. BURN AND CO., to the District Engineer, District Board, Malabar, Calicut, dated No. 7, Hastings Street, Howrah, 21st July 1886, No. H-2—907.

In reply to your No. 943, we intended to supply the link bars rolled solid and not welded, but we intended to have the bars rolled from blooms forged roughly to shape the ends and body being dressed to shape instead of stamping the whole out of a plate of full width of head; an equally sound solid bar would be made either way but with less loss in the first case.

2. With reference to the enhanced rate, we asked this was not all occasioned by your confining us to one method of making the bars, but was in great measure owing to the decline in exchange since we tendered for the work. It is now close upon four months since we wired you a rate; exchange was then at 1*s*. 6*d*., it is now at 1*s*. 4⅞*d*., or a drop of 8 per cent., with a tendency to further decline. We are quite prepared to adhere to our original quotation of Rs. 245 per ton, *plus* 10 per cent. for the fall in exchange, which is a moderate estimate of the difference between the rate when we tendered and rate which will probably be ruling when we have to remit. We could not quote at this low enhancement had we not sent copies of your drawings home and are now in a position to place the order on hearing from you by wire and thus secure ourselves against fluctuation in the market if not against adverse exchange. We therefore beg to quote Rs. 269-4-0 per ton for the iron work delivered ex steamer at Tellicherry within six months from receipt of order. We agree to keep this offer open for a fortnight after receipt of this to enable you to wire us acceptance if approved. We have read the contract deed and agree to it generally and also to terms of payment; but we take exception to the amount of penalty, which is, we think, excessive for the amount of contract, and would propose to reduce this to 25 per day. We also object to a lump sum being filled in, except as an approximation, as you have allowed no contingencies for excess section in your weights. We would therefore suggest the alteration of 3rd clause of contract deed to—"The President will pay to the contractors for the execution by them of the said works the sum of Rs. 55,000 approximately, the actual sum to be the net invoice weight of iron work calculated at the rate of Rs. 269-4-0 per ton."

3. A clause might be added to the effect that such weight was not to exceed or be less than your estimated weights by more than 5 per cent.

4. We trust these modifications are such as you can recommend to the board for acceptance.

Telegram from H. M. WINTERBOTHAM, Esq., President, District Board, Malabar, to Messrs. BURN AND CO., Howrah, dated Calicut, 28th July 1886.

Your letters, 21st instant, Nos. 907, 910. Malabar working season ends middle May therefore cannot extend period beyond five months or reduce penalty. Will pay at rate originally tendered, Rs. 245 a ton, guaranteeing you against loss by exchange falling below 18 pence. In other respects agree to your terms. Wire reply.

No. 4 O.

Referred, with previous papers, to the Public Works Department, for early remarks on the terms of the proposed contract with Messrs. Burn and Co.

(By Order.)

Ootacamund,
5th August 1886.

(Signed) E. S. LAFFAN,
Under Secy. to Govt.

No. 493 D.

Referred to the Superintending Engineer, IV Circle, for favor of very early remarks.

Ootacamund,
5th August 1886.

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

From Colonel J. BEATTY, R.E., Superintending Engineer, IV Circle, to the Chief Engineer, Public Works Department, dated Coimbatore, 7th August 1886, No. 290 E.W.

With reference to your endorsement No. 493 D., of 5th instant, received yesterday evening, and marked "immediate," I have the honor to state that the terms mentioned in the letter of the President, District Board, Malabar, No. 433, of 29th ultimo, appear satisfactory and such as may be approved.

2. The rate per ton, Rs. 245, *plus* the difference that may be caused by exchange falling below 18 pence, which is the rate for delivery ex steamer at Tellicherry, is favorable to the board, judging from information given in the latest price lists I have received; the weights to be paid for being net invoice weights, which are not to exceed or be less than the District Engineer's estimated weights by more than 5 per cent.

3. From inquiries I have made, there is not likely to be any difficulty in arranging locally for and insuring the safe landing of the material from the ship to the shore at Tellicherry.

No. 507 D.

Transferred to the Financial Department, with an expression of concurrence in the Superintending Engineer's observations.

Endorsement No. 4 O., dated 5th August 1886, is herewith returned with enclosures.

Ootacamund,
9th August 1886.

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

From Messrs. BURN and CO., to the President, District Board, Malabar, dated Howrah, 3rd August 1886, No. 11-1282.

We have your telegrams of 28th and 31st ultimo and are much obliged for your agreement to the terms proposed, all except the question of time and penalty. We regret we cannot agree to undertake the work within a shorter time than six months, more especially as there is a penalty attached, and we cannot agree to a higher penalty than a merely nominal one of, say, Rs. 10 per day. We make this stipulation *now* because we find that we are offering to do your work at a profit which will not exceed 5 per cent. if everything goes well, and it is not worth our while jeopardising this small percentage under circumstances in the shipment of the work which we cannot control. We must remind you that this penalty clause has been imported into the correspondence after our tender was submitted; had it been mentioned before, we would have made our price to cover the risk; it is therefore unfair to ask us to adhere to our original price with the risk of incurring a loss through this penalty. An accident to one of the steamers bringing the iron work, the ship calling at an intermediate port, the transhipment by mistake at a wrong port of some portion of the bridge (a case of everyday occurrence), any of these might let us in for serious loss. And we have therefore determined not to accept the work under a greater penalty, unless we charge for the risk in the price. If we had the whole conduct of the work in our own hands, and our responsibility ceased when it was delivered at our works here or in England, we would be willing to agree to any reasonable penalty, but with the risks of a sea voyage between such completion and delivery at Tellicherry, we cannot do it.

M/2288

We trust you will be able to agree with us. Penalty or no penalty, it will make no difference to us, and your work will be carried through at all costs in a thorough manner and to the best of our ability.

From H. M. WINTERBOTHAM, Esq., President, District Board, Malabar, to Messrs. BURN and CO., Iron Works, Howrah, dated Calicut, 13th August 1886, No. 511.

I have received your letter, dated 3rd August 1886.

2. In recognition of the reasonableness of your objection to incur a penalty for delay occasioned by circumstances beyond your control, I now propose that you should agree to a penalty of Rs. 50 a day, if the bridges be not *shipped* on board the steamer within a specified time after signing contract.

3. You will remember that the period of *five* months was fixed by yourselves without any suggestion from us, and this promised celerity was one of the circumstances which led the board to regard your tender with favor. As you now find yourselves unable to deliver the 10 spans within less than six months, I would inquire whether you can meet the wishes of the board by undertaking to ship *four* (or even *three*) of the 10 spans complete, within *three* months from signing contract. This would enable our engineer to erect the deep-stream spans before the floods come down the river.

4. I note that in your letter of 9th April 1886, No. H-2—471, you state that you can turn out 10 spans as fast as 2 or 4, but as the board's engineer informs me that the largest English bridge factories turn out only about 50 tons a week of finished bridge-work, I apprehend that on reconsideration the above proposition is one which you would not seek to maintain. The board somewhile ago received a tender from Messrs. Peirce, Leslie and Co., of Calicut, agreeing to ship 2 spans within three months, and the remainder in four months; and if you can turn out even 35 tons a week, this time would be ample.

5. My final proposition to you is that the penalty of Rs. 50 a day should be payable if three (3) spans (or 4 if you will agree) be not shipped within three (3) months from the date of contract on a steamer leaving England, under such circumstances that, in the ordinary course, the spans should arrive at Tellicherry not more than seven weeks after shipment.

6. We will ask for no penalty clause regarding the remaining spans, relying upon you to deliver them in less than the stipulated period (six months) if possible.

7. You will observe that I cannot close with you without the previous sanction of Government. If therefore you agree to the above terms, please let me hear by wire to save delay. If you do not agree, please return the draft contract, plan, specifications, &c., at once.

No. 512.

Endorsement on the above two papers.

Submitted for the information of Government with reference to G.O., dated 28th July 1886, Mis. No. 882 L.F.

(Signed) H. M. WINTERBOTHAM,
President.

Telegram to the President, Malabar District Board, Calicut.

Your number 512 of 13th. Wire if Burn and Company accept terms.

18th August 1886. (Signed) E. F. WEBSTER,
Chief Secretary.

Telegram from the President, District Board, Calicut, to the Chief Secretary to Government, dated 26th August 1886.

Your telegram 18th. Burn Company telegraph: agree to terms of your 511 and telegram of 28th guaranteeing three spans three months. Telegram ends. Please sanction my concluding contract.

Order—dated 30th August 1886, No. 1065 L.F., Financial.

The following telegram will be despatched to the President of the District Board, Malabar:—

Your telegram 26th. Conclusion of contract with Burn and Company sanctioned.

2. The following telegram will also be despatched to the Right Honorable the Secretary of State:—

Your telegrams, 25th March and 10th July. Irrity bridges. Iron work no longer required.

3. With reference to the foregoing telegram a letter will also be forwarded to his Lordship communicating the papers read above.

(True Extract.)

E. F. WEBSTER,
Chief Secretary.

To the President, District Board, Malabar.
„ Public Works Department.
„ Accountant-General.

Exd. T. O'Connor.

No. 2348 W/16-9-86.

Communicated to the Suptg. Engineer IV Circle for information.—

(Sd) J. O. H.

Govt. of (1886) Madras.

FINANCIAL.

Issued

Recd.

Encl.

G.O., 30th Aug. 1886, No. 1065 L.F.

AUGUST.

Irrity and Merumpoya Bridges.

Ordering the despatch of a telegram to the President, District Board, Malabar, sanctioning the conclusion of contract with Messrs. Burn and Co. for the supply of iron work for the —; and of another to the Right Honorable the Secretary of State intimating that the iron work is no longer required from England.

To.

S. E. IV Circle.

With order

Proceedings of the Board of Revenue, dated 11th June 1881.

No. 1,026.

Read—the following Brd.'s Gen. Reg. No. 4,252 of 1881—Letter from J. STURROCK, Esq., President of the Local Fund Board, CanaraCircle, to the Secretary to the Board of Revenue, dated Mangalore, 23rd May 1881, No. 539:—

One detailed estimate.
One abstract estimate.
One comparative statement.

I HAVE the honor to forward herewith, for submission to Government through the Chief Engineer, a second revised estimate, together with its accompaniments noted in the margin, for the construction of an iron lattice girder bridge across the Cubbinhally stream on Road No. 2 from Manjerabad Ghát to Mani *viâ* Upperangadi.

2. The original estimate for this work, amounting to Rs. 19,150, was sanctioned in G.O., dated 27th December 1875, No. 2,507, Financial Department, and the first revised estimate, amounting to Rs. 28,000, in G.O., dated 13th May 1879, No. 916, Financial Department.

3. The second revised estimate now submitted for sanction comes to Rs. 33,500, or Rs. 5,500 in excess of the first revised estimate. This excess is ascribed by the Local Fund Engineer to the inadequacy of the rate allowed in the latter estimate, viz., Rs. 50 per 100 cubic feet, for partly-dressed granite stone in chunam, which, he says, on actual execution of the work, was found to amount to Rs. 75-12-0. An extract from Mr. Supervisor Evans' letter to the Local Fund Engineer, explaining the necessity for the further revision of the original estimate, is enclosed.

4. Mr. Pringle, Executive Engineer, West Coast Division, who visited the district in December last, on being consulted by Mr. Comyn, expressed his opinion that Rs. 50 would be sufficient if the original specification were adhered to. He stated, however, that he did not know the rate of pay to be allowed to the Chinese workmen, but fancied that the higher rates of pay allowed would be more than counterbalanced by the greater quantity of work carried out. The original specification has not been departed from, but a measurement of the work completed shows that either the rate of Rs. 50 per 100 cubic feet was too low for native workmen, or that the Chinamen have not turned out the greater quantity of work anticipated.

5. The idea of employing Chinese stone-cutters originated with Major Smalley, who framed the first revised estimate, and it appears that the rates at present allowed to these men are the same as those paid to them when they were first taken on by the Department of Public Works with the exception that the foreman's wages are now increased by two annas. No Chinamen having been employed in the locality or under similar circumstances when the first revised estimate was prepared, there was nothing definite to go on, and, as the present estimate is based on the actual cost of the portion work completed when it was drawn up, the Local Fund Board have passed it. A copy of their Resolution, dated the 29th March last, is appended. Personally I am by no means satisfied that more work could not have been got out of the Chinamen with more efficient supervision, but it is very difficult to apply it in such an out-of-the-way part of the district, and it is some satisfaction to consider that, although the work has been expensive, there is every reason to believe that it is very good.

6. Mr. Hüttinger, of the Basel Mission Mechanical Establishment, who entered into a contract with the Local Fund Board, has supplied the necessary iron-work for the bridge, and, as it is undesirable to stop the progress of this important work pending the sanction of Government to the second revised estimate, the Local Fund Engineer has been permitted to proceed with it in anticipation of sanction.

mo 982C - 2-5-82-

No 1299C d/27-6-82

C

Recorded

21.6.82

[illegible] 7/6 - [illegible] Io/7/

No 1768 W PUBLIC WORKS DEPARTMENT

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the 18th July 1881

Read the following:-

Proceedings of Board of Revenue No 1026 dated 11th June 1881.

The second revised estimate, amounting to Rs 33,500, for constructing an iron lattice girder bridge across the Cubbintally Stream on road No 2 from Manzerabad ghat to Main via Upperangadi is sanctioned.

2. This sanction has been registered as Local No 15 XII ~~B~~ of 1881-82.

To
The Board of Rev.
with 4 enclos.
Acctt Genl. &
Civil Deptts [illegible]
19.7-81

10/7/81

C/ ~~No.~~ 1566 C d/ 29th August/82

No 1190 W d/ 21.4.79
B. No 1768 W d/ 18.7.81

Public Works Department, 1882-83.

No/2829

Current No. 5223 & 5294.
Letter No. 902 & Pro: No 5900.
Dated the 29th July & 5th Augt 1882.
From the President Local Fund Board Canara Circle & the Board of Revenue

~~NOTE OF REMARKS.~~

Memorandum.

In returning the Plans & Estimates for the proposed Iron Girder Bridge across the river Beltangadi on the road from Mangalore to the Kadur Dist & for the reconstruction of the Sitty Bridge in the Malabar Dist. the Chief Engineer has the honor to remark that no detail report has been furnished – Detail Calculations as to Drainage Area, rainfall flood discharge at Bridge site, together with a sketch survey shewing Catchment basin of river & that of stored Water, with section of the river at site & Area of discharge highest flood, Cross sections at points above & below the Bridge site & longitudinal section of bed level of the river at least a mile above & below the site should also be furnished.

2. Sections of trial pits

for

4

for foundations should be supplied. The nature of soil met with & that on which the foundations are to rest should be reported as laid down in Chap VII of the Madras P. W. Code.

3 It is suggested that the attention of all
II Local Fund Boards ~~should~~ be called to the necessity for complying with the instructions contained in Paras 970 to 972 of P. W. Code in regard to the report which should invariably accompany all projects submitted to this Office for check & for the sanction of Govt.

14th August /82.

Approved

2 a.m. [illegible]

To The Secy to the Board of Rev. with papers in O[illegible]

[illegible] 17/10/84 Despd 29th Aug

No. 327/M. Superintending Engineer's Office, Coimbatore, 15 October, 1886.

From,

The Superintending Engineer,
IV Circle.

To,

The Secretary to Government
Financial Department
Madras.

20/(288)

Enclosures 2.
2. Comparative Statements.

Sir,

I have the honor to submit herewith for the sanction of Government revised estimates of the Iritty and Merampoya Bridges amounting respectively to Rs 95248-3-7 and Rs 67,412-8-1.

2. The original estimates were sanctioned in G. O. No. 1373 W of 2nd June 1884 and amounted to Rs. 76600x for the Iritty Bridge, and Rs. 48000 for the Merampoya Bridge.

x Vide G. O. No. 1373 W of 2nd June 1884.

3. So that the excess now requiring sanction is Rs: 18648-3-7 in the case of the Iritty Bridge and Rs: 19412-8-1. for the Merampoya.

4

for foundations should be supplied. The nature of soil met with & that on which the foundations are to rest should be reported as laid down in Chap VII
t of the Madras P. W. Code.
3 It is suggested that the attention of all
II Local Fund Boards ~~should~~ be called to the necessity for
t complying with the instruction contained in Paras 970 to 972. of P. W. Code in regard to the report which should invariably accompany all projects submitted to this Office for check & for the sanction of Govt.

14th August /82.

Approved

Ditto

To The Secy to the Board of Rev. [illegible] papers in orig. [illegible] 19/10/82 despd 29th Aug

---

No. 327/M.

Superintending Engineer's Office
Coimbatore, 13 October, 1886.

From,
The Superintending Engineer,
IV Circle.

20/788

To,
The Secretary to Government
Financial Department
Madras.

Enclosures. 2.

2. Comparative Statements.

Sir,

I have the honor to submit herewith for the sanction of Government revised estimates of the Iritty and Merampoya Bridges amounting respectively to Rs 95248-3-7 and Rs 67412-8-1.

2. The original estimates were sanctioned in G. O. No. 1373 W of 2nd June 1884 and amounted to Rs. 76600× for the Iritty Bridge, and Rs. 48000 for the Merampoya Bridge.

× Vide G. O. No. 1373 W of 2nd June 1884.

3. So that the excess now requiring sanction is Rs: 18648-3-7 in the case of the Iritty Bridge and Rs: 19412-8-1. for the Merampoya.

4

4. The Explanation of this Excess is fully set forth in the Correspondence embodied in G.O. No. 594 L. F. Financial, dated 28th May 1886, and G.O. No. 1065 L. F. Financial, dated 30th Augt/86.

I have the honor to be,

Sir,

Your most Obt Servt

L. Beatty - Colonel. RE

Superintending Engr. 2nd Cir.

P.W.C. No 8305

Financial Depart
CURRENT No. 1947

25 OCT 86

No 631

Transferred to the Public Works Department for disposal.

(By order)
Under Secretary

Madras
28th Octr/86

P.S.
18/10/86

To
The Public Works Department with two enclosures

- No 231 Cd/15. 6. 85
- " 1373 W d/2. 6. 84
- " 2678 W d/20. 10 84
- " 4580 W d/20. 11. 75
- " 1190 W d/21. 4. 79
- " 1527 W d/4. 6. 79
- " 1768 W d/15. 7. 81
- " 1299 Cd/27. 6. 82
- " 1866 Cd/29. 8. 82
- " 1810 Cd/7. 10. 82
- " 255 C d/20. 6. 85
- " 3348 W d/16 9 85

From
The Supg: Engineer
4th Circle

To
The Secretary to Govern.
Financial Depts
Madras

Dated 15th }
Received 18th } October 1886
(25-10-86

No 327/M.

Enclosures 2.

Irrity and Merumpoya Bridges—

Submits for the sanction of Government revised estimates of amounting respectively to Rs. 95248-3-7 and Rs 67412-8-1.

(with the ordin

Endt Finl Dept No 120
d/9. 6. 85

To W.

These papers relate to iron work ordered from England for the Irrity & Merumpoya ~~Bridges~~ Bridges, Malabar District.

The Secy. of State has intimated that on the advice of Genl Hyde & Mr Bathe, the design of the bridges has been modified, & that iron work for riveted bridges will be supplied, in lieu of that for pin connected structures, indented for by the L.F. Board.

Mr Anderson the L.F. Engr, now shows that
be insuperable

Public Works Department 1885-86.

Current No. 5335 Vg(279)
Letter No. 120
Dated the 9th June /85
From the Chf Secy to Govt. Finl Dept

NOTE OF REMARKS.

1. In G.O. No 1373 W. of the 2nd June/84 the construction of bridges over the Irrity and Merumpoya rivers in the Malabar District was sanctioned.— An indent for the iron work for these two bridges was submitted to the India office but the Secretary of State when sanctioning compliance with that indent directed that the iron-work be suited the design as modified for reasons set forth by General Hyde and Mr Bathe.

2. In his design Mr Anderson adopted the Whipple Murphy trusses with pin connections, and the modification

25 OCT 85

No 631

Transferred to the Public Works Department for disposal.

(By order)

Under Secretary

Madras,
28th Octr/85

P.B.
19/10/85

To

The Public Works Department with the enclosures.

No 231 C d/ 15.6.85
" 1373 W d/ 2.6.84
" 2678 W d/ 30.10.84
" 4580 W d/ 30.11.75
" 1190 W d/ 21.4.79
" 1527 W d/ 4.6.79
" 1768 W d/ 15.7.81
" 1299 C d/ 27.6.82
" 1566 C d/ 29.7.82
" 1810 C d/ 7.10.82
" 255 E d/ 2.6.85
" 3348 W d/ 16.9.85

---

difficulties in putting together structures of the description advocated by Genl Hyde; & the President of the District Board advises that a telegram be sent to the Secy of State requesting that the original order be complied with.

The papers have been sent to P. W. D. for early remarks.

If you consider that the file must go to D.W. for remarks, it would be well perhaps to advise the Ch. Secy. to wire at once to Secy. of State to suspend supply of the iron work, pending receipt of a despatch.

Detailed reasons for adhering to original designs can then follow by letter in Finl Dept.

Some of the papers relating to these bridges are B ~~[illegible]~~ orders at Madras.

15.6.85

further orders

Urgent

23

22/VI

Endorsement from Finl Dept. No 120 of 9.6.85.

To

D.W.

For early examination & remarks.

W.S.
15.6.85.
W.

I
Urgent.

Public Works Department, 1885-86.

Current No. 5336 VI/(297)
Letter No. 120
Dated the 9th June /85
From the Ch. Secy to Govt. Finl Dept

NOTE OF REMARKS.

In G.O. No. 1373 W. of the 2nd June/84 the construction of bridges over the Kutty and Meerumpoya Rivers in the Malabar District was sanctioned. — An indent for the iron work for these two bridges was submitted to the India office but the Secretary of State when sanctioning compliance with that indent directed that the iron-work be suited the design as modified for reasons set forth by General Hyde and Mr Batho.

2. In his design Mr Anderson adopted the Whipple Murphy trusses with pin connections, and the modifi-cations

25 OCT 86
DEPARTMENT

No 631

Transferred to the Public Works Department for disposal

(By order)
Under Secretary

Madras
28th Octr/86

V.D
13/10/86

To

The Public Works Department with two enclosures.

No 331 E d/15.6.85
" 1373 W d/2.6.84
" 2678 W d/30.10.84
" 4580 W d/30.11.78
" 1190 W d/22.4.79
" 1527 W d/4.6.79
" 1768 W d/18.7.81
" 1299 E d/27.6.82
" 1566 E d/29.8.82
" 1810 E d/7.10.82
" 255 E d/2.6.85
" 3345 W d/16.7.85

Public Works Department, 1885-86.

Current No. 5336 $\frac{VE}{2879}$

Letter No. 120

Dated the 9th June/85

From the Ch. Secy to Govt. Pub. W. Dept

NOTE OF REMARKS.

1 In G.O. No 1373 W. of the 2nd June/84 the construction of bridges over the Iritty and Mee-rumpoza rivers in the Malabar District was sanctioned. — An indent for the iron work for thes two bridges was submitted to the India office but the Secretary of State whe sanctioning compliance with that indent directed that the iron-work be sute the design as modified for reasons set forth by General Hyde and Mr Bates.

2 In his design Mr Anderso adopted the Whipple Mu -phy trusses with pin con-nections, and the modif -catio

proposed consists in the substitution of rivetted open girders of steel in place of those trusses — After reading Mr. Anderson's reply to General Hyde it does indeed appear that the exceptional circumstances of the two bridges warrant the adoption of girders with pin connections in preference to those connected with rivets for, accepting Mr. Anderson's statements, it would not be possible to erect at all satisfactorily a rivetted girder bridge at either of the sites. —

It must be remembered that General Hyde is not acquainted with the facts brought to light in Mr. A's reply, and a knowledge of them would possibly lead him to concur in Mr. A's view of the relative merits of pins and rivets in these two special matters

17th June 85

W.

The point at issue between Mr. Anderson and Genl. Hyde is whether the design worked out by ~~him~~ the former, a Whipple-Murphy, or a rivetted bridge in steel braced by lattice should be adopted for the Aritty and Manampoya bridges, in the Malabar District. —

I entirely agree with Mr. Anderson as to the difficulties of putting up rivetted girders at such sites as those of the bridges in question, nor am I aware of any peculiar difficulties in preparing at home the link and pin connections of his design.

On the Western Ghauts of Mysore a number of Warren girders with pin connections were erected before the rendition. These were supplied from home, and no objections were ever raised thereto by the India Office authorities. This type was adopted on account of facility of erection. Rivetted plate girders invariably gave trouble in such localities, when the span was at all considerable.

It seems to me that Mr. Anderson in his memo. has entirely refuted the objections raised to his design, tho' I cannot offer any opinion as to the price quoted.

A steel girder, I observe, is proposed by Genl. Hyde & Mr. Mattes. I may observe on this, what has not been touched on by Mr. Anderson, that the rivetting up of steel would be still more risky than that of iron girders, and what seems to me important, steel

---

[illegible] 22nd 1885. P.W.D.

In returning the papers referred under Financial Dept. Endt. No. 120 of 9th June 1885, and in continuation of this office No. 231 E. dated 15th June 1885, the Undersigned has the honour to submit the following remarks.

The point at issue between Mr. Anderson, the District Board's Engineer, and General Hyde, is whether the design worked out by the former, a Whipple-Murphy girder bridge, or a rivetted bridge proposed consists in the substitution of rivetted open girders of steel in place of those trusses.— After reading Mr Anderson's reply to General Hyde it does indeed appear that the exceptional circumstances of the two bridges warrant the adoption of girders with pin connections in preference to those connected with rivets for, accepting Mr Anderson's statements, it would not be possible to erect at all satisfactorily a rivetted girder bridge at either of the sites.— It must be remembered that General Hyde is not acquainted with the facts brought to light in Mr A's reply, and a knowledge of them would possibly lead him to concur in Mr A's view of the relative merits of pins and rivets in these two special mat

17th June 85

---

vide No 255
6/85
22

is liable to more rapid deterioration from rust than iron is, and we know already the effect of oxidation on ironwork in the moist hot districts adjoining the sea coast. Liability to rust is a serious evil which will be intensified if we use steel in places such as Dilty & Puwampoya, where inspection & rechanking will be infrequent and perfunctory.—

In the absence of drawings, &c. I can say nothing more.

I think Mr Anderson's design may very well be adhered to, with simply the modification to bracing suggested by Mr Clarke in his para 3. I would add that the use of old rails does not seem advisable, but these I know have already been purchased. Perhaps it would be well to agree to the substitution of new bars of proper section for these old rails which Local Boards may freely find use for elsewhere.

C.S.
17.6.85

No 255 Ed/ June 22nd 1885. P. W. D.

Memo.

20/8/8

In returning the papers referred under Financial Dept Endt No 120 of 9th June 1885, and in continuation of this office No 231 Ed dated 15th June 1885, the undersigned has the honour to submit the following remarks—

The point at issue between Mr Anderson, the District Board's Engineer, and General Hyde, is whether the design worked out by the former, a Whipple-Murphy girder bridge, or a rivetted bridge in steel, as recommended by the latter, shall be adopted for the Perinty and Meenumpoza bridges in the Malabar District.

The undersigned ~~entirely~~ agrees with Mr Anderson as to the likely to be experienced in greater difficulties ~~of putting~~ up rivetted girders at (such) sites as those of the bridges in question; and he ~~knows~~ not aware of any peculiar difficulties in procuring in England the link and pin connections of Mr Anderson's design.

It appears to the undersigned that Mr Anderson has entirely refuted the objections raised to his design, although this office

is not in a position to offer an opinion as to the prices quoted.

27/8/89

It is observed that a steel girder is proposed by Genl Hyde & Mr Bates; & with respect to this — (a point not touched upon by Mr Anderson —) it may be remarked that the rivetting up of steel would ~~be~~ involve still more risk than that of iron girders. — Further, steel is liable to a more rapid ~~deterioration from rust~~ process of oxidation ~~than is~~ iron; and that liability ~~to rust~~ is a serious evil, which will be intensified if steel be ~~so~~ used in such places as the localities of the proposed bridges, where supervision & overhauling will be infrequent & perfunctory.

It is considered that Mr Anderson's design may well be adhered to, with the modification of bracing suggested in para 3 of Mr Batten's report. The substitution of new bars of proper section for the old rails which it is proposed to use would also be advisable. The old rails, which appear to have been purchased already, may possibly be utilized elsewhere.

No 4580 W d/ 30. 11. 78
1190 W d/ 21. 4. 79
1527 W d/ 4. 6. 79
1768 W d/ 18. 7. 79
1373 W d/ 2. 6. 84
No 231 Ed/ 15. 6. 85
2678 W d/ 30. 10. 84

20. 6. 85

Filed to G.O. 2929 W a
d/ 6 - 11 - 86

No 255 Ed/ June 22nd 1885

To the Civil Dept
with papers returned

Issued
22/6/85

Public Works Departm

[illegible]

Current No. 8805

Letter No. 327

Dated the 15th October/86

From the S.E. IV Circle

28/2329

NOTE OF REMARKS

1. The accompanying two revised estimates are submitted for constructing the undernamed two works in the Malabar district.

The Iritty bridge – Rs. 95,248.

The Meenunfoza bridge – Rs. 67,412.

The original amounts sanctioned for these works in G.O. No. 1373 W. of the 2nd June/84 were – the Iritty bridge – Rs. 76,600; and the Meenunfoza bridge – Rs. 48,000. – The proposed excess therefore in the Iritty bridge is Rs. 18,648; and in the Meenunfoza bridge, Rs. 19,412.

2. The cause of excess in the case of the Iritty bridge is mainly the insufficiency of the rate allowed in the original estimate for iron work. – The rate of exchange [illegible] from 1s. 6d. to 1s. 4[illegible] [illegible] two shares [illegible]

items of excess for this bridge — 'Superintendence', (1 bridge-inspector on Rs.250 a month and 1 sub-inspector on Rs.100 a month), 'Sundries'. — A large saving is to be effected by the substitution of 'erool' for teakwood.

3. The main cause of the excess in the case of the Moorimpoya bridge, as with the Sitty bridge, is the insufficient rate allowed in the original estimate for ironwork. Two other important items of excess are — 'Superintendence' (1 bridge inspector on Rs.250 a month and 1 subinspector on Rs.100 a month); and 'well-sinking'. — Here also a large saving is to be effected by substituting 'erool' for teakwood.

4. S.E.IV and the President of the L.F. Board have, probably by oversight, omitted to countersign the revised estimates now submitted.

P.45
119
152
1768
1373
P.231
267

BJA
Cr 29/10/86

29/281

The excess over the original estimates is almost wholly due to the rate allowed for iron work in the original estimate being too low. The estimates are recommended for sanction.

1/11/86

PUBLIC WORKS DEPARTMENT.

F THE MADRAS GOVERNMENT.

31/287

READ the following

. H. E. No: 327 M. d/15th October 1886.
ttt. H. E. No: 631 d/23rd October 1886.

The revised estimates for the undermentioned bridges in the Malabar District, are sanctioned in supersession of the estimates for the respective bridges sanctioned in G. O. No: 1373 W dated 2nd June 1884.

Rs. 95,248. Local No: 27 W of 1886-87.
67,412. Local No: 28 W of 1886-87.

2/11/86

2/11/86

ts 2 encls.

6.

W/4 11

items of excess for this bridge — 'superintendence' (1 bridge-inspector on Rs. 250 a month and 1 sub-inspector on Rs. 100 a month); 'sundries'. — A large saving is to be effected by the substitution of 'erool' for teakwood.

3. The main cause of the excess in the case of the Merumpoya bridge, as with the Iritty bridge, is the insufficient rate allowed in the original estimate for ironwork. Two other important items of excess are — 'superintendence' (1 bridge inspector on Rs. 250 a month and 1 subinspector on Rs. 100 a month); and 'well-sinking'. — Here also a large saving is to be effected by substituting 'erool' for teakwood.

4. S.E. IV. and the President of the L. F. Board have, probably by oversight, omitted to countersign the revised estimates now submitted.

B.H.
27/10/86

P.W. O. No. 8305

30/2827

D.W.

Subject to your approval the accompanying two "revised estimates" for the Iritty and Merumpoya bridges should be returned to S.E. IV. for resubmission with a report. — A comparative statement is now the only document submitted in the case of each bridge.

B.H.
27/10/86

27/10/86

Dir.

The S.E. says that the circumstances causing the excesses over the original estimates are

---

PUBLIC WORKS DEPARTMENT.

OF THE MADRAS GOVERNMENT.

31/2827

READ the following

le. H. E. No: 327 M. d/15th October 1886.

Deptt. H. E. No: 631 d/23rd October 1886.

The revised estimates for the undermentioned bridges in the Malabar District, are sanctioned in supersession of the estimates for the respective bridges sanctioned in G. O. No: 1373 W dated 2nd June 1884.

Rs. 95,248. Local No: 27 W of 1886-87.

" 67,412. Local No: 28 W of 1886-87.

2/11/86

2/11/86

to 2 encls.

6.

W/4/11

items of excess for this bridge — 'superintendence' (1 bridge-inspector on Rs.250 a month and 1 sub-inspector on Rs.100 a month); 'sundries'. — A large saving is to be effected by the substitution of 'erool' for teakwood.

3. The main cause of the excess in the case of the Merimpoya bridge, as with the Iritty bridge, is the insufficient rate allowed in the original estimate for ironwork. Two other important items of excess are — 'superintendence' (1 bridge inspector on Rs.250 a month and 1 subinspector on Rs.100 a month); and 'well-sinking'. — here also a large saving is to be effected by substituting 'erool' for teakwood.

4. S.E.IV. and the President of the L.F. Board have, probably by oversight, omitted to countersign the revised estimates now submitted.

E.H.
29/10/86

Cn

---

fully set forth in Pros. No 1065 L.F. of 30.8.86 — Can those Pros. not be taken in lieu of an explanatory report?

Cn
28.10.86

Yes I think so [illegible] the information [illegible] require

28/10/86

On [illegible]

Cn
28.10.86

PUBLIC WORKS DEPARTMENT.

No. [illegible] dated 6

PROCEEDINGS OF THE MADRAS GOVERNMENT.

READ the following (2837)

From the Supdg. Engineer IV Circle. N. E. No. 327 M. d/15th October 1886.
Endorsement by the Financial Deptt. N. E. No. 131 d/23rd October 1886.

The revised estimates for the undermentioned bridges in the Malabar District, are sanctioned in supersession of the estimates for the respective bridges sanctioned in G.O. No. 1373 W dated 2nd June 1884.

Bridge over the Iritty river —	Rs. 95,248.	Local No. 27 W of 1886-87.
Bridge over the Merampoya river —	„ 67,412.	Local No. 28 W of 1886-87.

2/11/86

2/11/86

To
The Supdg. Engr. IV Circle ✓
„ Examiner of P. W. Accts ✓
„ Financial Deptt. (L.F.) with 2 enclos ✓
~~[illegible]~~

Despd. 15-11-86.

Cn

W
4/11

32/2825

7/11/06
1/5/11

8305.

Govt. of (1886) Madras.

PUBLIC WORKS.

No.

Dated

Recd. 8/11/86

Encl.

G.O., 6th Nov. 1886, No. 2927 W.

Iritty & Marumpoya bridges.

Revised Estimates for the ___ in the Malabar District, sanctioned

With file of

Connected papers

(To be kept in tact)

7. The excess to be now provided is Rs. 5,500, which will be entered in the list of incomplete works to be shortly submitted for the Revenue Board's sanction.

Enclosures Nos. 1 and 2 to the above.—Estimates.

Enclosure No. 3 to the above.—Comparative Statement.

Enclosure No. 4 to the above.

To the Local Fund Engineer, Canara Circle, dated Uppinangadi, 3rd September 1880, No. 148.

With reference to your Memorandum, No. 11, of the 3rd ultimo, and in continuation of my letter, No. 121, of the 16th instant, I beg to state that I visited the Cubbinhally bridge on the 16th and again on the 22nd instant, and have since gone carefully into the expenditure. As the result of my examination, I beg to report as follows on the state of the work.

2. The eastern abutment and wings have to be raised nine feet, the pier nearest one foot and the other pier three feet, before they will be ready for the iron girders, that is, before they have attained their full height of 19 feet, whilst the western abutment and wings have not as yet been commenced. I believe the foundation for this part of the work was once excavated. If so, the pit has refilled and the excavation must therefore be made once again.

3. I have ascertained that the foundations for the eastern abutment and wings and for the two piers are solid rock which was properly tabled before the superstructure of partly-dressed granite stones and granite rubble in Surki cement was raised upon it. The built foundation for the eastern abutment is only one foot deep, for the pier nearest two feet, and for the other pier two-and-a-half feet. Thus there are exactly 1,538¼ cubic feet of solid masonry built in the foundations and in the superstructure 7,166 cubic feet, or 8,704¼ cubic feet in all. The actual cost of this work is Rs. 6,567-10-11, or Rs. 75-12-0 per 100 cubic feet. And upon this basis I have framed the re-revised estimate for the work, which I find to be necessary and which is herewith forwarded with comparative statement. It will be seen from the latter that a just a little over half of the granite stone-work is done. For the remaining 8,188 cubic feet of granite masonry to be built 744 cubic feet of dressed, 3,847 cubic feet of split, and 627 cubic feet of rubble stone are collected, the value of these materials and of the bed-plates that have been prepared and of the lime, &c., at site being Rs. 2,462-10-8. I shall use the stone that has been quarried and shall set the remaining 2,970 cubic feet required, from the same place, in preference to acting on Mr. Nery's suggestions to procure rubble stone from the hill on the left bank of the Cubbinhally river, for, though some of this stone is suitable, a good deal is not, and I should be chary of allowing stones to be procured from this locality lest rubbish should find its way into the body of the work.

* * * * * *

Enclosure No. 5 to the above.—Extract from Proceedings of the Local Fund Board.

Resolution—

The second revised estimate, amounting to Rs. 33,500, for constructing an iron lattice girder bridge across the Cubbinhally stream on Road No. 2 from Manjerabad Ghât to Mani *via* Upperangadi, is submitted for the early sanction of Government.

2. The present estimate is Rs. 5,500 in excess of the first revised one,* and the cause of the excess is fully explained in the foregoing letter.

(True Copies and Extract.)

Acting Sub-Secretary.

To the Secretary to Government, Public Works Department, with four original enclosures to be returned.
" Secretary to Government, Financial Department,
" President of the Local Fund Board, Canara Circle.
" Accountant-General.

Exd. A. Grubert.

---

* For Rs. 28,000 sanctioned in G.O., Financial Department, dated 13th May 1879, No. 916.

15/2879

G. O. 7 Jany/76 No 49
~~23rd April/79 No 1216 W.~~
No 1428 W. 21st May/79
G. O. 23rd April/79 No 1216 W. Genl

P. W. C. No 3905

E-4

Recd: 6th July '81

S. S. C.

1881.

Board of Revenue,

MADRAS.

To

THE SECRETARY TO GOVT.,
PUBLIC WORKS DEPT.,
&c., &c., &c.

Printed June th.

Received

PROCEEDINGS, 11TH JUNE 1881, No. 1,026.

Desp 6/7/81 6904

Iron Lattice Girder Bridge — across the Cubbinhally Stream on Road No. 2 from Manjerabad Ghât to Mani *viâ* Upperangadi, Canara Circle.—Submitting for the sanction of Government second revised estimate for constructing an —.

Entd. in Receipt Regr.

Ro-8-7-81

BOARD OF REVENUE, 10TH MAY 1882, No. 1288.

16/882

PROCEEDINGS OF THE BOARD OF REVENUE.

READ—the following Memorandum from Lieutenant-Colonel R. THOMPSON, R.E., Acting Deputy Chief Engineer, Public Works Department, to the Secretary to the Board of Revenue, dated 2nd May 1882, No. 982-C:—

"Proceedings of the Board of Revenue, No. 914, dated 28th March 1882."

In returning the enclosures of the above-quoted Proceedings, the Chief Engineer has the honor to remark that, although the proposed bridge across the Khan Sahib's Canal at Komaratchi is to take the place of an old one, the causes of the destruction of the latter are not stated. No site plan has been furnished, no calculations for waterway, no statement as to the precise character of the foundation, rock or soil, and in fact there is no attempt to explain the facts upon which all such designs must rest, as laid down in Chapter VII of the Madras Public Works Code.

2. While requesting that this information may be supplied, the Chief Engineer has the honor to suggest, for the consideration of the Board of Revenue, the advisability of calling the attention of all Local Fund Boards to the necessity for complying with the instructions contained in paragraphs 970 to 972 of the Public Works Code in regard to the report which should invariably accompany all projects submitted to this office for check and for the sanction of Government.

ENCLOSURE No. 1.—Plan.

ENCLOSURE No. 2.—Estimate (including specification, abstract of estimate, &c.)

RESOLUTION—dated 10th May 1882, No. 1288. — 3

Communicated to the President, Local Fund Board, South Arcot Circle, who will furnish the information called for by the Chief Engineer.

2. The attention of all Presidents of Local Fund Boards will be drawn to the Chief Engineer's remarks in paragraph 2.

(A true Copy and Extract.)

(Signed) C. D. MACLEANE,
Acting Sub-Secretary.

(True Copy.)

S. Srinivasa Raghavaiyangar
First Assistant.

To the President, Local Fund Board, South Arcot Circle,
with plan and estimate returned.
" all other Presidents.
Copy to the Deputy Chief Engineer, Public Works Department.

Exd. A. Raitt.

№ 1820 - 2-5-82-

№ 1299C d/27-6-82

C

Recorded

G

21.6.82

1882.

Board of Revenue,

MADRAS.

Proceedings, 10th May 1882, No. 1288.

№ 1299C d/27-6-82

Requesting the President, Local Fund Board,
South Arcot Circle, to furnish the information
required by the Chief Engineer regarding the
proposed bridge across the Khan Sahib's Canal
at Komaratchi, and inviting the attention of
Presidents to the necessity for complying with
the instructions contained in *paragraphs* 970 *to*
972 *of the Public Works Code* in regard to the
report which should invariably accompany all
projects submitted to the Chief Engineer for
check.

Grt. from the Rlys. with the ...

P. W. SECRETARIAT—18~~79-80~~81-82.

KEEP-WITH.

Current No. 3905, 12/888

Rev. Pro. ~~Letter~~ No. 1026.

Dated the 11th June 1881.

from the Board of Revenue.

Note of Remarks.

The Revised Estimate with Comparative Statement for Constructing an Iron Lattice Girder Bridge across the Cubbinhally Stream on Road No. 2. from Manjerabad Ghât to Mani Via Upperangadi - Canara Circle, Amounts to Rs. 33,500 - or Rs. 6,500. in Excess of the first revised Estimate.

The first revised Estimate amounting to Rs. 28,000 was sanctioned in G.O. Finl. Dept. No 916. dated 13th May 1879.

The Excess is due to the inadequacy of the Rate allowed in the 1st revised Estimate Viz Rs. 50 per 100 Cft, for partly dressed Granite Stone in Chunam on Actual Execution of the Work was found to amount to Rs 75-12-

The Rates agree with the Original.

The Estimate has been Approved & Countersigned by the President Local Fund Board.

8th July 1881.

No. 1768 W PUBLIC WORKS DEPARTMENT.

E MADRAS GOVERNMENT.

UNDER date the 18th July 1881

Read the following :—

ard of Revenue No. 1026

June 1881.

The second revised estimate, amounting to Rs 33,500, for constructing an iron lattice girder bridge across the Cubbinhally stream on road No 2 from Manzerabad ghat to Mani via Upperangadi is sanctioned.

2. This sanction has been registered as Local ~~Bof~~ No 15 of 1881-82.

10/7/81