(1) Number of pages 22

(2) Date of repair 4.8.87

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TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

P.W DEPARTMENT

G.O. No. / B.P. No.	2340	Press. / Mis.
Dated	20. 8. 1883	198 .

AIT

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2340/1

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following papers :—

From Colonel J. BEATTY, R.E., Superintending Engineer, Fourth Circle, to the Chief Engineer, Public Works Department, dated Coimbatore, 7th August 1883, No. 326.

I have the honor to submit, herewith, for sanction, an estimate, amounting to Rs. 41,000, for an iron girder bridge, 3 spans of 53 feet, across the Sítánadi River, in the South Canara District.

1 Site Plan.	1 Estimate, &c.
1 Section.	1 Report.
1 Plan of Bridge.	1 Specification.

2. When the estimate was first submitted to me I raised objection to the level * at which it was proposed to place the girders above the highest recorded water-level of the last ten years, and also to the design of the girders.

* 3 feet.

3. I find, however, from the explanations now given that two other bridges,† of identically similar design, have already apparently been passed by you and built. I am therefore not prepared to make further objection, and now forward the revised estimate for sanction.

† The Kabinhollay and the Beltangadi bridges.

4. I observe that seven other iron girder bridges have already been built in the South Canara District, and that the present design of iron-work is taken from an original plan by Bemkesir Brothers, a large engineering firm of Pflorzheim in Germany.

Memorandum by the Chief Engineer, Public Works Department.

In submitting for the sanction of Government the estimate forwarded with the foregoing letter, the Chief Engineer has the honor to suggest that the attention of the Local Fund Board be called to the following points.

2. The Superintending Engineer, Fourth Circle, reports that he at first objected to the plan on the score of the proposed level of girders above high-water mark, but subsequently waived his objection on finding that two bridges of identically similar design (for it is presumed similar streams) had already been sanctioned.

3. The bottom boom is to be but 3 feet above highest flood-level, an altogether insufficient height in the opinion of the Chief Engineer, when the character of the streams below the Western Ghâts, and the fact that they frequently carry along with them quantities of floating debris, is borne in mind.

4. The fact of a mistake (if a mistake) having been made already in sanctioning designs objectionable on this score in other cases, is no reason for perpetuating the error, and the Chief Engineer cannot undertake the responsibility of recommending a less height above high-water level than 5 feet.

5. The wing-walls appear to be most objectionably weak, and should be nearly double the thickness designed. They should either be increased in thickness and given weepholes, or be built cellular without earth filling.

6. The cut-waters are apparently far too sharp, and with the batter given they will be difficult to build. An equilateral triangle with the batter of cut-water the same as that of sides of piers would be simpler and ought to answer.

7. The bearings of girders seem too short for such a span, and they may be improved with the design as it stands, by making the capstones of piers and abutments flush with the faces or even slightly corbelling them.

8. The iron-work, apparently from the design of a German firm, is to be wrought and fitted by the mechanical branch of the "Basel Establishment." It is almost needless to remark that this will require close supervision and care.

CHEPAUK, (Signed) R. H. SANKEY, Major-General, R.E.,
20th August 1883. Chief Engineer, P.W.D.

ORDER—dated 20th August 1883, No. 2340 W., Public Works.

The estimate, amounting to Rs. 41,000, for constructing an iron lattice bridge across the Sítánadi River, in the South Canara District, is sanctioned.

2. The attention and consideration of the Local Fund Board should be invited to the remarks of the Chief Engineer, Public Works Department.

3. This sanction has been registered as Local No. 26 W. of 1883-84.

(True Extract.)

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

To the Board of Revenue, with nine Enclosures.
" Superintending Engineer, Fourth Circle.
" Accountant-General.
" Financial Department.

Exd A. F. Goodall.

Spare Copies

2

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1883} Madras.

PUBLIC WORKS.

Dated August, 20th.

Recd. *Encl.*

G.O., 20th Aug. 1883, No. 2340 W.

AUGUST.

Sitanadi River

Estimate for constructing an iron lattice bridge across the —, in the South Canara District, sanctioned with remarks.

27TH NOVEMBER 1882, No. 3122 W., PUBLIC WORKS.

2340/3

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

No. 151.

READ—the following letter from J. STURROCK, Esq., President, Local Fund Board, Canara Circle, to the Acting Secretary to the Board of Revenue, dated Mangalore, 16th November 1882, No. 1309 (through Chief Engineer) :—

With reference to Board's Proceedings, dated 11th September 1882, No. 2267, I have the honor to resubmit, with the enclosures marginally noted, the plan and estimate for the Beltangadi bridge slightly modified as to foundations so as to save a sum of Rs. 1,200.

1 General report.
1 Specification.
1 Detailed estimate.
1 Abstract ,,
1 Plan of bridge with section.
1 Do. of sections, longitudinal and transverse.
1 Index plan.
1 Plan (map) of catchment.

2. The failure to submit the required information in the first instance was due partly to an omission to forward a report by the Local Fund Engineer, and partly to that officer having thought it unnecessary to send in longitudinal sections, &c., as the proposed work was not a new project, strictly speaking, but the construction of a new bridge on a previously selected and approved site which had not been found to be in any way defective. Under the circumstances I trust that the information now supplied may be considered sufficient.

3. As it is important that the bridge should be completed as early as possible, and an allotment of Rs. 20,000 has been sanctioned by the Local Board and by Government for the current year, I have under Rule 30 of the Local Fund Rules authorized the Local Fund Engineer to commence collecting materials.

G.O., 12th October 1882, No. 1458, Financial Department, communicated with Board's Proceedings, 26th idem, No. 8235, Miscellaneous.

No. 152.

ORDER—dated 27th November 1882, No. 3122 W., Public Works.

The plans and estimates, amounting to Rs. 39,300, for constructing an iron lattice girder bridge across the Beltangadi river in the South Canara District, are sanctioned.

2. This sanction has been registered as Local No. 27 W. of 1882-83.

(True Extract.)

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

To the Board of Revenue, with eight enclosures.
,, Accountant-General.
,, Financial Department.

Exd. C. Howarth.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1882} Madras

PUBLIC WORKS.

Dated November, 27th.

Recd. *Encl.*

G.O., 27th Nov. 1882, No. 3122 W.

NOVEMBER.

Nos. 151-152.

Beltangadi River.

Plans and estimates, amounting to Rs. 39,300, for constructing an iron lattice girder bridge across the —, sanctioned.

18

Supg. Engineer's Office, 4 Circle
Coimbatore, 7th August 1883.

No. 326

2340/4

From,

The Superintending Engineer
4 Circle.

To,

The Chief Engineer
P. W. D.

Sir,

I have the honor to submit herewith for sanction an Estimate amounting to Rs 41,000 for an iron girder bridge, 3 spans of 53 feet, across the Sithanadi River in the South Canara District.

2. When the Estimate was first submitted to me I raised objection to the level at which it was proposed to place the girders above the highest recorded water level of the last ten years, and also to the design of the girders.

3. I find however from the explanation now given that two other bridges of identically similar design have already apparently

Enclosures 6.
1 site Plan
1 section
1 Plan of Bridge
1 Estimate
1 Report &
1 specification

3 feet

* The Kabbinhalla and the Beltangadi bridges.

1768 / 15-6-83
27-11-82

apparently been passed by you and built. I am therefore not prepared to make further objection and now forward the revised estimate for sanction.

4. I observe that seven other iron girder bridges have already been built in the South Canara District and that the present design of iron work is taken from an original plan by Benkesir Brothers a large Engineering firm of Pforzheim in Germany.

I have the honor to be,

Sir,

Your most Obt Servant.

L. Beatty - Colonel RE.

Supg Engineer, 4th Circle.

G.O. No. 3122 W. 27.11.82

From Div. Ch. 6759
The Supg. Engineer,
Fourth Circle.

Dated 7th
Sept. 8th } August/83

No: 326

Encl. (3)

From Girder Bridge across the Pithanuddy River in the South Canara District.

Submitting for sanction an Estimate of Rs: 41,000 for ——.

1

02 Sept. 8
copy 11/8 RD 1695

Public Works Department.
Ebepank 20th Aug/83.
2340/6

Memorandum by the Chief Engineer Public Works Department.

In submitting for the sanction of Government the Estimate forwarded with the foregoing letter the Chief Engineer has the honor to suggest that the attention of the Local Fund Board be called to the following points.

2. The Superintending Engineer Fourth Circle reports that he at first objected to the plan on the score of the proposed Girders above H.W. mark, but subsequently waived his objection on finding that two bridges of identically similar design (for it is presumed similar streams) had already been

sanctioned

been sanctioned.

3. The bottom boom is to be but 3 feet above highest flood level, an altogether insufficient height in the opinion of the Chief Engineer, when the Character of the streams below the Works shall, and the fact that they frequently carry along with them quantities of floating debris, is borne in mind.

4. The fact of a mistake (if a mistake) having been made already in sanctioning designs objectionable on this score is often cases, is no reason for perpetuating the Error, and the Chief Engineer cannot undertake the responsibility of recommending a less height above H. W level than

than 5 feet. 3 8
2340
7

5. The wing walls appear to be most objectionably weak and should be nearly double the thickness designed. They should either be increased in thickness and given waste holes, or be built Cellular without Earth filling

6. The cutwaters are apparently far too sharp, and with the batter given they will be difficult to build. An equilateral triangle with the batter of cutwaters the same as that of sides of piers would be simpler and ought to answer.

7. The bearings of piers seem too slight for such a span, and they may be improved with the design as it stands, by making the capstones of piers and abutments flush with the faces or even slightly corbelling them

The

8. The iron work appears likely from the design of a serviceable form, if the wrought and fitted by the mechanical branch of the "Basel Establishment". It is almost needless to remark that this will require close supervision and be costly.

Cl.

(Sd) R.H. Sankey
Major R.E.
Ch. Engr. & Sup. Irr. Dept

Trans. Cl 1618

GOVT. OF MADRAS. } 188 . { P. W. DEPT.

SECRETARY.

2340

Chepauk, .. 11th August 1883.

OFFICE NOTE.

To W

Local Fund Board, South Canara, submit through S.E. 4th Circle, Estimate of Rs. 41,000 for an Iron Lattice bridge across Seithanadi river.

Ch. Engr reports that he at first objected to the plan on the score of the proposed level of girders above H.W.M., but subsequently waived his objection on finding that two bridges of identically similar design (for 3 previous similar streams) have already been sanctioned.

The bottom boom is to be but 3 ft. above highest flood level, an altogether insufficient height, in my opinion, when we bear in mind the character of these streams below the western ghauts & the fact that they frequently carry along with them quantities of floating debris.

Last monsoon the iron bridge below the Periambady ghaut was swept away, the accident being caused by a mass of floating timber being carried against the girders. So I understood from Lt. Sharpe.

The fact of a mistake (if a mistake) having been made already in sanctioning

Jarrett

designs objectionable on this score is no reason for perpetuating the error.—

Possibly the contingency of floating debris from the jungles is not to be apprehended in this case, and of course raising the bridge by another 3 ft. to guard against such a danger will materially enhance the cost of the approaches.—

I would ask your attention to the wing walls which appear to me to be most objectionably weak. They ought to be nearly double the thickness designed. We know how common are cracks & disjointment are owing from insufficient thickness of wings.

The entrances seem to me far too sharp, and with the batter given they will be difficult to build. An equilateral triangle with the batter of entrance the same as that of sides of piers would be simpler & right & answer.

The bearings of girders seem to me too short for such a span, as the length of seam is not figured.

The inner walls, apparently from the design of a former firm, is to be unsightly & pitted & the mechanical branch of the "Work Establishment". I would not—if it will require close inspection & care.

C.S.
11/8

Perhaps the letter might be sanctioned and attention & consideration of the Board asked to the above points (if concurred in) in a Chief Engineer's note.

I cannot undertake the responsibility of recommending a less height above H.W.L. than 5 feet

They must either both be increased in thickness and given weep holes — or be built cellular without earth filling

approved

The bearings may be improved with the drawings as it stands by making the Cast stones of piers & abutments flush with the faces or even slightly thus

assembly

GJS

13.8.83

Public Works Department, 1883-84.

Current No. 6759 2340/9
Letter No. 326
Dated the 7th August/83
From the Supg. Engr. 4th Circle

NOTE OF REMARKS.

1. The enclosed estimate and plans provide for the construction of an iron Lattice Girder Bridge across the Cauvery river on road No. 5 from Bangalore to Mysore. Amount of estimate is Rs. 41,000.

2. All the necessary documents and plans have been submitted.

3. It is to be noted the Supg. Engr. states in para. 2 of his enclosing letter that when this design was first put before him he objected to height of girders above flood level, and also to the design of the girders. In the following para. he adds that on its being explained that two other bridges of "identically similar design" had been passed by Govt (vide G.O. No. 1768 W. of 15/7/81 and G.O. No. 3122 W. of 27/11/82 and since built he withdrew his objections — though doubtless still maintaining his opinion.

4. In the Report it is stated that the failure of the former bridge was due to the injury received from floating timber, under these circumstance it would be doubtless advisable to raise the girders 5 feet above flood level — the data as sufficient information cannot be obtained to allow for extraordinary flood levels. As the design now stands the girders are 3 ft above flood level.

5. The estimate has been countersigned by the President of the L. F. Board Canara Circle

18th August/83

BSK

48 - Works

No 2340 W PUBLIC WORKS DEPARTMENT.

2340/10

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the 20th August/83

READ the following

From the Supdg. Engr Fourth Circle } No. No. 3261/7 2nd August 1883.

Memo by the Chief Engineer P. W. D. } No. — dt. 20th Aug/83.

The Estimate amounting to Rs 41,000 for constructing an iron lattice bridge across the Sitanadi river, in the South Canara District is Sanctioned.

2. The attention and consideration of the Local Fund Board should be invited to the remarks of the Chief Engineer Public Works Department.

3. This Sanction has

has been registered as
Local No. 26 w of 1863-84.

W

1874

—Dated

To
The Board of Revenue
with genl. ✓
" S. E. Fourth Circle ✓
" Asst General
" Financial Dept ✓

6759

Govt. of [1883] Madras.

PUBLIC WORKS.

8222

Dated

Rcd. Encl.

G. O., 26th Augt 1883, No. 2340

Nos.

Sithanadi river

Estimate for Constructing an iron lattice Bridge across the — in the South Canara Dist: sanctioned vide above

70/ 10/

Entd in Regt Rejects