Public Works (1898) Department.

G.O., No. 1040 W

DATED 25th April '98.

25/4/98

[Despatch Abstract.]

Bridge: The supplemental revised estimate of Rs. 8600 for constructing an iron B— across the Kullar on the Chendale Mysore road, sanctioned with remarks.

9/4.98
25/4

Indexed 26/4

Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

o.	Department.	Date.	G.O.	No.	Department.	Date.

CIVIL WORKS.

Government (1898) of Madras.

PUBLIC WORKS.

Recd. } 1898. *Enclosures*

Regd. *Spare copies*

G.O., No. 1040 W., 25th April 1898.

APRIL.

Bridge

The supplemental revised estimate of Rs. 8,600 for constructing an iron — across the Kullar on the Chundale-Mysore road, sanctioned with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

Read—the following papers :—

From the Superintending Engineer, IV Circle, dated 2nd May 1896, No. 203 W.

From A. H. GARRETT, Esq., Superintending Engineer, IV Circle, to the Chief Engineer, Public Works Department, dated Calicut, 24th March 1898, No. 177 W.

I have the honour to submit a revised estimate for constructing a bridge across the Kullar river on the Chundale-Mysore road.

2. In G.O., No. 3091 W., of 2nd December 1895, an estimate, amounting to Rs. 5,750, was sanctioned for this bridge, but in January 1896 Mr. F. J. Wilson pointed out that the estimate had been based on the tender received from Messrs. Richardson and Cruddas, who would not accept the test ordered by the Chief Engineer without revising their tender.

3. A revised estimate for Rs. 7,410 was accordingly submitted by Mr. Carless in April 1896, which was returned by the Chief Engineer with his memo. No. 2459 C., of 10th June 1896, in which it was explained that the test ordered referred to a uniformly distributed load, so that a revised estimate was unnecessary.

4. In November 1896 Mr. Wood sent up tenders from Messrs. Massey & Co., Burn & Co. and Richardson and Cruddas, recommending that of Messrs. Burn & Co.'s. All these tenders were for bridges founded on screw-piles, and the Executive Engineer was ordered to have borings taken to show the nature of the river bed.

5. Borings were taken in February 1897 showing the presence of rock at 9 and 10 feet below bed, and in March 1897, the Superintending Engineer, Mr. Hannan, called for an estimate allowing for a central masonry pier.

6. In November 1897 Mr. Wood again sent up the design of Burn & Co., saying that, after a study of the site, he considered it the most suitable form of bridge to adopt.

7. This estimate was returned in November, and Mr. Wood was asked to explain more fully why the original design sanctioned in 1895 should not be adopted.

8. On 18th February 1898 Mr. Wood sent in a reply and said that his views were shared by Mr. Hannan. He also requested that the estimate might be sanctioned soon as the bridge ought to be erected before the next monsoon.

9. On going over the papers, I could find nothing in record to convince me that the style of bridge proposed was the best suited to the locality. Rock was said to be met with from 9-10 feet below river bed, but nothing was said as to the nature of the soil overlying the rock.

10. In reply to my inquiries on this point, Mr. Wood reported that overlying the rock there is stiff clay from 4-5½ feet in depth, and above the clay, I presume, sand.

11. I feel by no means certain that screw-pile foundations should be employed in a river bed of this description, but Mr. Hannan, after inspecting the site, seemed to think the style of bridge proposed suitable. I accordingly send up the estimate, the

Note by the Chief Engineer, Public Works Department.

In G.O., No. 3091 W., dated 2nd December 1895, an estimate of Rs. 5,750 for constructing an iron bridge across the Kullar on the Chundale-Mysore road was sanctioned, and attention was drawn to the Chief Engineer's remark that "before the girders are purchased, the contractors should certify that the girders have each stood a test-load of 16 tons at least." Mr. F. J. Wilson pointed out that this estimate had been based on the tender received from Messrs. Richardson and Cruddas, who refused to accept the test ordered by the Chief Engineer without revising their tender.

A revised estimate of Rs. 7,410 was accordingly submitted in April 1896, and this was returned by the Chief Engineer, with the remark that the test ordered referred to a uniformly distributed load, and that a revised estimate was unnecessary—*vide* memo. No. 2459 C., dated 10th June 1896.

In November 1896 Mr. Wood recommended the tender of Messrs. Burn & Co. for a bridge founded on screw-piles, and he was directed by Mr. Hannan to have borings taken to show the nature of the river bed. Borings were accordingly taken showing the presence of rock at 9 and 10 feet below bed, and Mr. Hannan called for an estimate for a central masonry pier. Mr. Wood again submitted the design of Messrs. Burn & Co. and said that, after a study of the site, he considered that design the most suitable form of bridge to adopt. This estimate was returned, and Mr. Wood was asked to explain more fully why the original design sanctioned in 1895 should not be adopted. Mr. Hannan appears to have inspected the site subsequently and decided that the style of bridge proposed by Mr. Wood was suitable. The latter officer accordingly requests sanction to the estimate for a screw-pile bridge. Mr. Garrett is, however, of opinion that screw-pile foundations are not suitable, but submits the estimate for orders, the case being urgent, and the present wooden bridge having been pronounced unsafe in 1895.

The undersigned has satisfied himself as to the suitability of the form of bridge proposed and recommends for sanction the estimate as now sent up.

(Signed) W. B. deWINTON,
Ag. Chief Engineer.

21st April 1898.

Order—No. 1040 W., dated 25th April 1898.

The revised estimate, amounting to Rs. 8,600, for constructing an iron bridge across the Kullar on the Chundale-Mysore road is sanctioned in supersession of the estimate of Rs. 5,750 sanctioned in G.O., No. 3091 W., dated 2nd December 1895, and as supplemental to the estimates aggregating Rs. 75,740 sanctioned in the following G.Os. :—

No. 2192 W., dated 25th August 1893.
" 3191 W., " 13th December 1895.
" 148 W., " 15th January 1896.
" 2207 W., " 29th July 1896.

The total cost of the road will now amount to Rs. 84,340.

2. The outlay on the road to end of 1897-98 will probably amount to Rs. 67,335, and a sum of Rs. 17,000 will be provided in the final issue of the Provincial Civil Works budget for 1898-99 to meet the balance of the estimate.

3. The sanction accorded in paragraph 1 has been registered as Provincial No. 5 W. of 1898-99, and classified as "Communications, Original Works."

(True Extract.)

Under Secretary to Government.

To the Superintending Engineer, IV Circle, with 8 enclosures.
" Examiner, Public Works Accounts.
" Local and Municipal Department.
" Honorary Secretary, Wynaad Planters' Association.

Exd. W. D'Moss.

A/ His Excellency the Governor

P.W. DEPARTMENT.

Papers to be real in Proceedings:—

5 P

Again G.O., dated 189 , No.

Again G.O., dated 189 , No.

1 1/4 P

Quote Current No. 4.205 of 1896, dated 2nd May 1896, from the S.E. IV circle No ~~243~~ 203 W

Print " " 2832 " 1898, " 24th March 1898, " — do —

Print " " " 189 , " April 1898, " the C.E. P.W.D

No 1040 W 25.4.98.

ORDER.

The revised estimate, amounting to Rs 8.600, for constructing an iron bridge across the Kullar on the Chundale - Mysore road is sanctioned in supersession of the estimate of Rs 5.750 sanctioned in G.O. No 3091 W dated 2nd December 1895, and as supplemental to the estimates aggregating Rs 75.740 sanctioned in the following G.Os:—

A.S.H 22.4.98

Flagged A

×E 2192 W dated 25th August 1893.

⊕F 3191 W dated 13th December 1895.

⊙G 148 W dated 15th January 1896.

√H 2207 W dated 29th July 1896.

The total cost of the road will now amoun
to Rs 84.340.

2 The outlay on the road to en
of 1897-98 will probably amount to Rs 67.3
and a sum of Rs 17.000 will be provide

× Actuals to end of 1896-97 —	Rs 49.872
Grant for 1897-98 —	17.463
	Total Rs 67.335

θ The balance of the estimate is Rs 17.005 Rs 17.000 is proposed to round the figure in the final issue of the Provincial Civil Works Budget for 1898-99, to meet the balance of the estimate.

3 The sanction accorded in para 1 has been registered as Provincial No 5 W of 1898-99 and classified as "Communications, Original Works".

A.R.
18.4.98.

W

Cn

P.H.S

Note. This estimate is dealt with in the accompanying technical note and the note by the Chief Engr. P.W.D.

To

The S. E. IV circle with 8 enclos.

Exar. P.W. Accts

L and M Dept

Hony: Secy: Wynaad Planters Association.

8

Note by the Chief Engineer P.W.D.

Flagged A.

In G.O. No: 3091 W a/2nd December 1895, an estimate of Rs. 5,750 for constructing an iron bridge across the Kullan on the Chundale-Mysore road was sanctioned, and attention was drawn to the Chief Engineer's remark that "before the girders are purchased, the contractors should certify that the girders have each stood a test-load of 16 tons at least." Mr. F. J. Wilson pointed out that this estimate had been based on the tender received from Messrs. Richardson and Cruddas, who refused to accept the test ordered by the Chief Engineer without revising their tender.

A revised estimate of Rs 7,410 was accordingly submitted in April, 1896, and this was returned by the Chief Engr.

with the remark that the test ordered referred to a uniformly distributed load, and that a revised estimate was unnecessary vide Memo No: 2459 C of 10th June 1896.

In November 1896, Mr. Wood recommended the tender of Messrs. Burn & Co: for a bridge founded on screw piles and he was directed by Mr. Hannan to have borings taken to show the nature of the river bed. Borings were accordingly taken showing the presence of rock at 9 and 10 feet below bed, and Mr. Hannan called for an estimate for a central masonry pier. Mr. Wood again submitted the design of Messrs Burn & Co; and said that after a study of the site he considered that design the most suitable form of bridge to adopt. This estimate was returned, and Mr. Wood was asked to explain more fully why the original design sanctioned in 1895 should not be adopted. Mr. Hannan appears to have inspected the site subsequently, and decided that the style

× Flagged C

UP

of bridge proposed by Mr. Wood was suitable. The latter officer accordingly requests sanction to the estimate for a screw pile bridge. Mr. Garrett is however of opinion that screw pile foundations are not suitable, but submits the estimate for orders, the case being urgent, and the present wooden bridge having been pronounced unsafe in 1895.

The undersigned has satisfied himself as to the suitability of the form of bridge proposed, and recommends for sanction, the estimate as now sent up.

Secy.
A.9H
22.4.98

Ack
20.4

W.H.W.
H. W. St.
E. W.

Ms.

14205/98
Ch 2832

S.A.W.

Kindly say whether the revised estimate should not be reviewed in the Technical Section before sending it for the sanction of Govt.

P.K.S.
13/4/98

Dcd

With reference to C.E.'s note overleaf, a draft G.O. sanctioning the estimate is submitted for approval, also a note by the Technical Branch reviewing the estimate.

It seems ~~necessary~~ now to prepare a note for this day, explaining why ~~to~~ it is proposed ~~to~~ sanction the ~~[illegible]~~ revised estimate in the form submitted, the present S.E. being ~~doubtful~~ doubtful as to the propriety of screw pile foundation.

A brief note might be drawn up, but the S.E.'s letter explains the position clearly.
Ch
14.4.98
A.K.

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104 of W

Public Works Department.

Current No. 2832
Letter No. 177/W
Dated 24th March 1898
From the Supg. Engineer IV Cir

NOTE BY TECHNICAL SECTION.

Name of work Revised Estimate for constructing a bridge across the Kullar River on the Chendale Mysore Road. Est Rs 8,600.

an Estimate for Rs 575 was sanctioned in G.O. 3091 W dated 2nd Decb 1895, and a revised Estimate in the form a comparative Statement for Rs 7,410 submitted for sanction by the Supg Engineer IV Circle on 2 May 1896. This was reviewed in this Office note dated 23-V-96 and returned with Chief Engineer Memo No 2459 dated 10th June 1896 in which it was explained that the test ordered referred to a uniformly distributed load so that a revised Estima

P.W. 60
250—30-9-97.

In Novbr 1896 tenders from Messrs Martin & Co, Burn & Co, & Richardson and Cruddas were sent up - Messrs Burn Co's being recommended. These tenders were for bridges founded on screw piles and the Executive Engineer was rdered to have borings taken to show nature of river bed. orings were taken in Feby/97 showing rock at 9-10 feet elow bed, and in March 1897 the Supg Engr called for an Estimate allowing for a central masonry pier. In Novbr /97 Mr Wood again sent up the design of Burn & Co. ~~Est~~ Rs 8,600 stating, that after a study of the site he considered it the most suitable form of bridge to adopt. This Estimate was returned in Novbr & Mr Wood was asked to explain more fully why the original design sanctioned in 1895 should not be adopted. On 18th Feby 1898 Mr Wood replied to the effect his views were shared

by Mr Hannan Supg

and requested that the Estimate might be sanctioned soon, as the bridge ought to be erected before the next monsoon. The present Supg Engineer, Mr Garrett, reports that he could find nothing in record to convince him that the style of bridge proposed was the best suited to the locality, and is by no means certain that screw pile foundations should be employed in a river bed of the description given, viz - Rock 9-10 feet below river bed and stiff clay from 4 - 5½ feet in depth and above the clay, presumably, sand. but that Mr Hannan after inspecting the site seemed to think the style of bridge proposed suitable, which is now submitted for W's orders.

W. C. W.
14-4-98

that [illegible]

1

Public Works (1898) Departme

CURRENT No. 28

From The Supg. Enginee
4th C

Order

No. 177/W

Dated 24th March 189
Received } 28. 3. 98
Registered }
Enclosures 7. 8 (2 plans)
Spare copies ✓

SUBJECT.

Bridge across the Kullar river on the Chundale Mys Road.

Submits for sanction a revised estimate amounting to Rs 8,600 for constructing a

Put/ for orders.

Cm 29/3/98

O.L.1.21

BACK PAPERS.

No.	Date.
2459C	10-6-96
2207W	29-7-96
148W	15-1-96
3191W	13-12-95
3091W	2-12-95
92D.	3-5-95
2192W	25-8-93

FURTHER PAPERS.

No.	Date.

No. 177/W

18

Superintending Engineer's
4th Cir
Camp Calicut 24th March

From
A. H. Garrett Esq.
Superintending Engineer
4th Circle

To,
The Chief Engineer,
P. W. Department.

Sir,

I have the honor to submit a revised estimate for constructing a bridge across the Kullar River on the Chundale, Mysore Road.

Enclo: 7.
1. Original estimate.
1. Report.
1. Specification.
1. Tracing.
1. Revised estimate
1. Specification.
1. Plan of Messrs Burn & Co.

2. In G. O No. 3091 W of 2nd December 1895 an estimate amounting to Rs. 5750 was sanctioned for this bridge, but in January 1896, Mr. F. J Wilson pointed out that the estimate had been based on the tender received from Messrs. Richardson & Cruddas, who would not accept the test ordered by the Chief Engineer without revising their tender.

3. A revised estimate for Rs 7410 was accordingly

accordingly submitted by Mr Carless in April 1896, which was returned by the Chief Engineer with his Memo No. 2459c of 10th June 1896, in which it was explained that the test ordered referred to a uniformly distributed load, so that a revised estimate was unnecessary.

4 In November 1896 Mr Wood sent up tenders from Messrs Massy & Co. Burn & Co. and Richardson & Cruddas recommending that of Messrs Burn & Co. All these tenders were for bridges founded on screw piles, and the Executive Engineer was ordered to have borings taken to show the nature of the river bed

5. Borings were taken in February 1897 showing the presence of rock at 9 and 10 feet below bed, and n March 1897 the Superintending ngineer, Mr Harman called

for

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for an estimate, allowing for a c
masonry pier.

6 In November 1897 Mr Wood
sent up the design of Burn & C
-ing that after a study of the
he considered it the most suita
form of bridge to adopt.

7 This estimate was returne
in November and Mr Woo
was asked to explain more fu
why the original design sanct
in 1895 should not be adopted

8 On 18th February 1898 Mr Woo
sent in a reply and said that th
views were shared by Mr Harman.
He also requested that the estimat
might be sanctioned soon as the
bridge ought to be erected before th
next monsoon.

9 On going over the papers, I could
find nothing in record to convince me that the style of bridge proposed was the best suited to the locality.

Rock

Rock was said to be met with from 9 - 10 feet below river bed, but nothing was said as to the nature of the soil overlying the rock.

10 In reply to my enquiries on this point Mr Wood reported that overlying the rocks there is stiff clay from 4 - 5½ feet in depth, and above the clay, I presume sand.

11 I feel by no means certain that screw pile foundations should be employed in a river bed of this description, but Mr Hamman after inspecting the site seemed to think the style of bridge proposed suitable. I accordingly send up the estimate the case being urgent as the present wooden bridge was said to be unsafe in 1895.

I have the honor to be
Sir
Your most Obedt Servant
A. Rumbold
Superintending Engineer
4th Circle

N° 21/98.

The Chief Engineer in the note ~~accompanying memorandum~~ ~~No. 3091 W. of 2nd~~ dated 29th November 1895 referred to a test load of 16 tons uniformly distributed. For this a section of 12" × 6" would theoretically suffice, and ~~as the sanctioned steel beams are already 15¾" × 5"~~ it is therefore considered that the dimensions may be safely reduced from 15¾" × 5" to 15" × 5". Under the circumstances there seems to be no necessity for a revised estimate.

ASWB
5.6.96

To
the S. E. IV Circle with enclos.

Public Works Department.

Current No. 4,205
Letter No. 203/W
Dated 2d May 1896.
From the Supdg Engineer IV Circle.

NOTE BY TECHNICAL SECTION.

Name of work Iron bridge across the Kulla
on the Chundale - Mysore road.

Amount of revised estimate Rs 7,41

The S.E. IV Circle submits for the san
-tion of Govt a revised estimate, a
-mounting to Rs 7,410, in the form of
Comparative statement, for construc
-ting an iron bridge across the Kullan
on the Chundale - Mysore road in
lieu of the original estimate, amoun
-ting to Rs 5,750, sanctioned in G.O. No
3091 W dated 2d December 1895.

The excess of Rs 1660 or 29% over
the original sanction is due to in-
-creased section of girders now pro
-posed by the E.E. West Coast Divn
from 15¾" × 5" to 15¾" × 6⅛", owing
it is stated, to E.W.'s note embodie
in the G.O. sanctioning the estimate
to the effect that each girder is
to bear a test load of 16 Tons.

The S.E. in submitting the revise
estimate remarks on the compara
-tive statement to the effect that
a beam 15" × 5" weighing 60 lbs per foot
will carry a distributed load of 17 in

or 34 Tons for two beams, again he states that beams of a section 15"×5" weighing 50 lbs per foot will carry 15 Tons or 30 Tons for 2 beams. The maximum live load on each bay is calculated at (24'×13'×120 lbs) = 37,440 lbs or 17 Tons & therefore he states that beams of a section 15"×5" weighing 50 lbs would be stronger than required.

The section of beams 15¾"×5" weighing 54 lbs per foot as originally proposed was considered too heavy for the proposed distributed load to be carried, as it will be observed from my note dated 22d Novbr. 95, that a beam of a section 12"×6" was recommended as being ample for the distributed load of 15·6 Tons on each beam, this load being made up as follows:-

Dead load on each beam, ie weight of platform & metalling as per details obtained from the original estimate ———— 7 Tons
Add live load at 120 lbs per Sq ft. 8·5 do
Total 15·5 Tons
or 31 Tons on 2 beams or one bay.

There appears to be no necessity to increase the original section from 15¾"×5" (a section much too heavy for actual requirements) to 15¾"×6⅛"

The SE now proposes to reduce the original section from 15¾"×5" to 15"×5" & this reduction, it is submitted, may be approved which would even be stronger than required. & if the SE's proposal be approved, there

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there will then be no necessity to sanction the revised estimate as the deviation would probably be met within the amount of the original sanction.

23. V. 96.

DW

For orders.

27-5-96

C. No. 4205 P. W. Secretariat.

Note by Budget Section.

Work Constructing an iron bridge across the Kul
on the Chundale - Mysore road.

Fund Provincial
Service Head Communications
Departmental Head Original Works.
Amount of Estimate ... ... Rs. 7,410
Expenditure in previous year ... " "
Allotment in current year ... " "
Balance required to complete ... " 7,410
Total Rs... 7,410

Note of available Funds.

This is a revised estimate in lieu of the one of Rs 5,75 sanctioned in G.O. No 3091 W dated 2nd December 1895. The work will have to be treated as supplemental to that sanctioned in G.O. No 2192 W dated 25th August 1893. The total aggregated cost of the work will now stand as Rs ~~44,810~~ 51,418. The outlay on the main work to end of March 1896 was Rs 38,517. The balance will, therefore, be Rs ~~6,293~~ 12,893 but the full amount of the present estimate is shown above as "balance required to complete", as no expenditure appears to have been as yet incurred on this portion of the work. The amount at the credit of the Provincial Reserve is Rs 3,97,230

CWR

Note by Budget Section

Enclos 2 (1 plan)
Recd: 6.5.96

From

The Supdg. Engineer
4th Circle

10404

Dated 2nd }
despd. 4th } May 1896

No. 203/W.

Enclos: 2

Iron bridge across the Kullar
on the Chimdale Mysore Road.

Submits a revised estimate
amtg. to Rs 7410 for sanction of
Government for constructing
an —

No. 203/W.

Camp Ootacamund
2nd May 1896

From
J. C. Larminie Esq
Supdg. Engineer 4th Circle

To
The Chief Engineer
P. W. Department
Madras

Endo: 2
1. Comparative Statement
Plan

Sir

I have the honor to submit for sanction of Government a revised estimate, in the form of a Comparative statement amounting to Rs: 7,410 for constructing an iron bridge across the Kullar on the Chundale Mysore road.

2

The excess viz: Rs: 1660 over the original estimate of Rs: 5,750 sanctioned in G. O. No. 3091. W. dated 2d December 1895, is chiefly due to the cost of iron work. and due to increased section of

Beams necessitated by Chief Engineer's order, G.O. No. 3091 W. d/ 2d Dec '95.

Attention is ~~drawn~~ invited to my remarks on the Comparative statement which are based on Messrs. Dorman & Long's table of breaking weights for their rolled steel beams. From Chief Engineer's note printed with G.O. No. 3091 W, dated 2nd December 1895, it is not quite

quite clear whether the Test means, 16 tons at Centre, this would mean 32 tons uniformly distributed, a load vastly in excess of requirements.

To carry the maximum live load of 17 tons with a coefficient of safety of 5, two beams, each 12"×5" weight 47 lbs per foot would suffice.

Two beams 15"×5", weight 50 lbs per foot have been proposed in Comparative statement.

I have the honor to be,
Sir
Your most obedt. servant,

Supg. Engineer, 4th Circle.