

Public Works (1898) Department.

G.O., No. 74/S
DATED 27 January 1898

original
27/1/98

[Despatch Abstract.]

Iron bridge at Papachavadi; Estimate of
Rs 4,000 for construction — over the Buckingham
Canal, sanctioned with remarks.

110/6

25/1/98

28/1

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.
	951						
	23.10.97						
	137						
	10.2.97						
	815229.10.96						
	1046128.23.3.96						

FURTHER PAPERS.

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

IRRIGATION.
ACCOUNT.

Government (1898) of Madras. PUBLIC WORKS.

Recd.

Regd.

1898.

Enclosures

Spare copies

G.O., No. 74 I., 27th January 1898.

JANUARY.

Iron Bridge at Papanchavadi

Estimate of Rs. 4,000 for constructing an — over the Buckingham canal,
sanctioned with remarks.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers:—

From J. E. PAUL, Esq., Executive Engineer, Buckingham Canal division, to the Superintending Engineer, II Circle, dated 12th December 1897, No. 1695.

With reference to your No. 264 B.C., dated 15th November 1897, on G.O., No. 951 I., dated 23rd October 1897, I have the honour to forward an estimate, amounting to Rs. 3,900, for reconstructing the bridge over the Buckingham canal at Panchavadi.

2. The design has been prepared by Mr. Moss, Executive Engineer, Superintendent of the Workshops, and is considerably cheaper than an alternative design which was estimated for two spans with wrought iron piles and steel beams.

3. The breadth of the roadway has been decreased by 9 inches, the wooden bridge having a roadway of 8 feet 9 inches which included the wooden wheel guards. The clear width now allowed (7 feet) is ample for all purposes for which the bridge is required. I request early sanction so that the bridge may be fixed during January.

4. To save delay, the general plan is for the alternative design of two spans; the level of the roadway remains the same, and the headway which is practically the same as for the wooden bridge that was removed is ample.

5. Provision for the work, which is to be charged to the Revenue account of the Buckingham canal, will be made in the estimate for the maintenance of the Buckingham canal, Rs. 54,000, which is now under revision.

No. 296 B.C.

Forwarded to the Chief Engineer for Irrigation with reference to G.O., No. 951 I., dated 23rd October 1897, for favour of sanction of Government being obtained to the estimate, amounting to Rs. 3,900, for constructing iron bridge at Panchavadi over Buckingham canal.

16th December 1897.

(Signed) J. E. PAUL,
Supg. Engineer, II Circle.

No. 11 I.

Note by the Chief Engineer for Irrigation.

The accompanying estimate submitted by the Superintending Engineer, II Circle, provides for the construction of an iron bridge over the Buckingham canal at Panchavadi, ordered in G.O., No. 951 I., dated 23rd October 1897. The amount of the estimate has been increased in this office from Rs. 3,900 to Rs. 4,000 owing to errors found in the detailed estimate. The estimate, as corrected, may be sanctioned.

15th January 1898.

(Signed) W. HUGHES,
Chief Engineer for Irrigation.

ORDER—No. 74 I., dated 27th January 1898.

The following estimate is sanctioned:—

Irrigation.
43. Minor Works and Navigation.
Minor Works for which Capital and Revenue Accounts are kept.
Buckingham Canal.
Southern Section.
Revenue Account.
2. Maintenance and Repairs.
2. Main Canals and Branches.
6. Bridges.

Constructing Iron Bridge at Panchavadi.

Estimate RS.
4,000

2. This sanction is registered as No. 156 I. of 1897-98.

3. The work will be put in hand at once, any additional funds required for the canal under "Maintenance and repairs" being applied for at an early date.

(True Extract.)

Under Secretary to Government,
Irrigation Branch.

To the Chief Engineer for Irrigation.
" Superintending Engineer, V Circle, with five enclosures.
" Examiner, Public Works Accounts.
" Local and Municipal Department.

Exd. T. K. Narayana Aiyangar.

Public Works (1898) Department.

CURRENT No. 533

Order

From The Chief Engineer for
Irrigation

No. 118

Dated 15-1-1898

Received 20th January 1898

Enclosures 56^x (2nd plan)

Spare copies 5

Recd. 27.1.98.

SUBJECT.

Constructing Iron Bridge over the
Buckingham Canal at Papanchuradi
Estimate of Rs 4000 as increased in
the office for - note recommending
for sanction the -

FURTHER PAPERS.

PUBLIC WORKS DEPARTMENT,

IRRIGATION BRAD

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the

READ the following

Constructing Iron Bridge
over the B Canal near Rafancharisti

From the Survey Engineer, Second Circle. (H.R. No. 296-B.C. dated 16-12-97).
No. 11. 2d 15-1-98

Note by the Chief Engineer for Irrigation.

The accompanying estimate submitted by the Super. Engineer, Second Circle, provides for the construction of an iron bridge over the Buckingham Canal at Papanchavadi, ordered in G.O. No. 951-I, dated 23rd October 1897.

The amount of the estimate has been increased in this Office from Rs. 3,900 to Rs. 4,000, owing to errors found in the detailed estimate. The estimate, as corrected, may be sanctioned.

Isaac

Wt

19.1.98

Dec
18/1/85

14/1/88

W.H.
15-1-98

W 74 927.1.98

Order Theresa.

The following estimate is sanctioned

-ed:-

Irrigation

Public Works (1897) Department.

CURRENT No. 513

From *L. Superintendent Engineer*
to Circle

No. 296 BC

Dated 16 December 1897

Received

Registered

Enclosures 5

Spare copies

SUBJECT.

Estimate for constructing iron Bridge at Papanchavady on Buckinghamham Canal. Submit an. for obtaining sanction of Govt.

To
DES for orders if the estimate may be sanctioned after check by C.E.J

LCB 22/12/97

22/12

Sanction.

43 Minor Works & Sanction.
Minor Works for which Capital and Revenue Accounts are kept.

Buckingham Canal
Southern Section
Revenue Account.

Sanction Section.

2. Maintenance & Repairs.
2. Main Canals & Branches.
6. Bridges.

Constructing iron bridge at Papanchavady.

Estimate. Rs. 4,000.

2. This sanction is registered as No. 156 J. of 1897-98.

3. The work will be put in hand at once any addl funds required for the canal under "Maintenance & Repairs" being applied for at an early date.

JH 14/1/98

WH 15.1.98

To
The Chief Engineer for Sanction.
- Supr. Engineer, Fifth Circle in pps D 27/1/98
- Examiner, P.W. Accounts
- Local & Municipal Dept.

24/1/98

with enclosure

For History and orders to prepare estimate see G. O. N^o 957 I dated 23rd Oct. 1897.

There are several advantages in having a bridge of a single span. The Cost and trouble of building a Centre Pier of putting down piles is ^{saved} ~~saved~~, and there will be no impediment to Navigation, and less time will be spent in erection. This design for a single span bridge is therefore submitted.

The form chosen for the main Girders is that of a bowstring Girder in 9 bays with double diagonal ties. The reason for choosing this form is that it is the most suitable for the material at present in stock, and is quickly put together, besides being an economical form of Girder.

The clear width of roadway has, for this bridge, been made the same as for the first design. It is, however, not

For a central
Plan not submit-
ted being more
correct.

NE 15798 Reln 16

in this case limited to that. The abutments will take a wider bridge, and if desired, this bridge could be made a foot wider at small cost, as the sizes of Ironwork provided, are ample. The only alteration would be in the lengths of the Cross-beams and the width of flooring.

The data taken for Calculation are

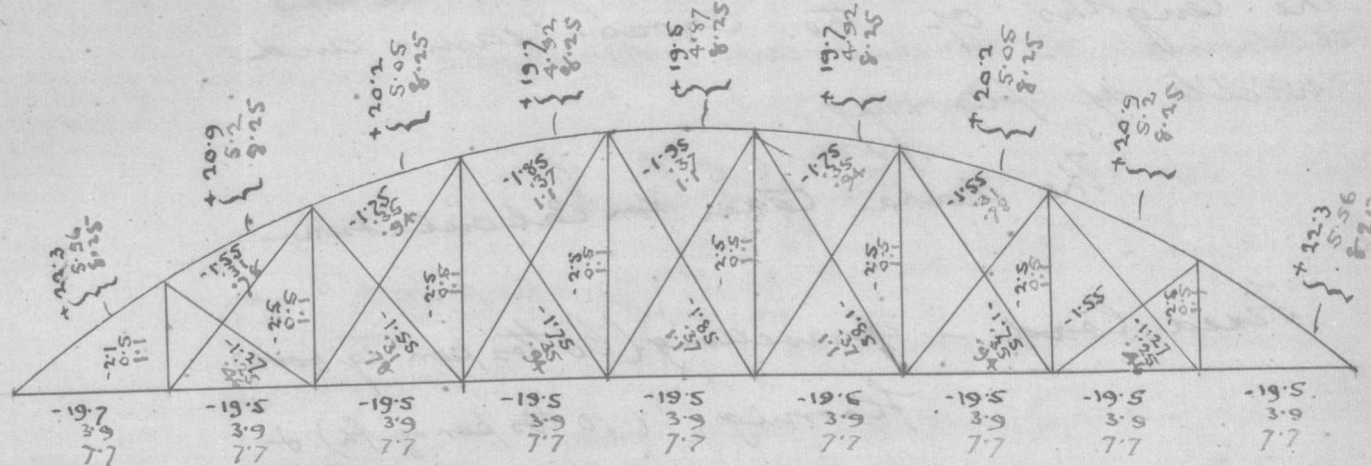
Fixed Load - graveling (60 lbs per sq foot)

Flooring (10 lbs per sq ft) +
weight of Iron work = 1.2 Tons
per bay of each Girder.

Moving Load - a closely packed crowd
of people at 100 lbs per sq ft
(the heaviest moving load
the bridge is likely to be)
= 1.3 Tons per bay of each
Girder.

The following diagram gives
the maximum stresses in the various bars of
the Girder. The thick lines and + signs show
bars in Compression, and the thin lines and
- signs show ties in tension. The blue figures
give the Calculated sections at 5 Tons per
square inch, ^{for tension} 4 tons per square inch
for Compression, and 4 Tons per
square inch for shearing. The red figures
give the actual sections (after deducting
net holes for bars in tension. These are
fixed

fixed by the nearest suitable sizes available
in sufficient quantity in the stores.



To ensure a uniform bearing on the masonry,
the Girders are carried on rockers at each
end. One end is also carried on rollers,
to allow of expansion and contraction.
The bed-plates are each 2 square, so that
the pressure on the masonry is less than
3 tons per square foot.

The Girders are tied together overhead
by three rows of Channel Iron. A clear
headway of 10' - 6" is allowed above
the roadway.

Side rails of 1 1/4" gas pipe are
attached by clips to the ties of main
Girders, and a curved wheel guard of
1/4" plate, is also provided at each side
of the roadway. The rails and wheel guard
end

end in Cast Iron guard posts bolted to
in each end of the main Girders, as shown
in the drawings. These guard-posts may
be formed into lamp-posts as shown.

This bridge would take about a
month to build and erect from the time
of receiving the order at the shops.

(S) J. E. Paul

E. Eng. B.C.D.

E. J. M.

19
Copy of a letter N: 1695 d/12 - Dec 1/97.
from J. E. Paul Esquire Executive Engineer
Buckingham Canal Division to the
Superintending Engineer II Circle.

With reference to your N: 264 B.C.
dated 15th Nov 1897 on G.O. N: 951 dated
23rd October 1897, I have the honor to
forward an estimate amounting to
Rs 3900/- for reconstructing the
bridge over the Buckingham Canal
at Papancherry.

2. The design has been prepared
by Mr. Cross, Executive Engineer,
Superintendent of the Workshops
and is considerably cheaper than
an alternative design which was
estimated for two spans with
wrought iron piles and steel beams.

3. The breadth of the roadway
has been decreased by 9", the
wooden bridge having a roadway
of 8' 9" which included the wooden
wheel guards. The clear width
now allowed 7' is ample for all
purposes for which the bridge is
required. I request early sanction
to

and in Cast Iron
each
in
the
for

So that the bridge may be fixed during January.
4. To save delay the general plan is for the alternative design of two spans, the level of the roadway remains the same and the headway which is practically the same as for the wooden bridge that was removed is ample.
5. Provision for the work which is to be charged to the Revenue account of the Buckingham Canal will be made in the estimate for the maintenance of the Buckingham Canal, Rs 54,000/- which is now under revision.

N^o 29603C Suptg. Engineer's Office
16.12.97 II Circle
Bezawada
97. 1 estimate
1 report
S. S. Prasad

Forwarded to the Chief Engineer for Irrigation with reference to G.O N^o 951 dated 23rd October/97 for favour of sanction of Government being obtained to the estimate amounting to Rs 3900/- for construction

Iron bridge at Papanchavady over Buckingham Canal.

20/12/97
Suptg. Engineer II Circle
L. 16/12/97

N^o 29603C Suptg. Engineer's Office
16.12.97 II Circle
Bezawada

Forwarded to the Chief Engineer for Irrigation with reference to G.O N^o 951 dated 23rd October/97 for favour of sanction of Government being obtained to the estimate amounting to Rs 3900/- for construction

CHIEF ENGINEER
FOR IRRIGATION.
22 DEC. 1897
No. 5713 C

1054
533/98