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TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

P.W. DEPARTMENT

G.O. No.	794-W	Press.
B.P. No.		Mis.
Dated	31-3-1885	198

Not to be folded or roughly handled.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following papers:—

From Colonel J. BEATTY, R.E., Superintending Engineer, IV Circle, to the Chief Engineer, Public Works Department, dated Coimbatore, 9th February 1885, No. 61 E.W.

I have the honor to forward, herewith, three alternative estimates for a bridge across the Yeekar stream, 13½ miles from Mangalore, on the road to Mulki.

2. From the report accompanying estimate No. 1, dated 28th March 1884, for a rolled iron girder bridge of 30 feet span to cost Rs. 6,300; it will be observed that the catchment basin above the site of the bridge is stated to be "within 12 square miles," and that "below the bed the soil consists of a firm bed of clay."

3. Subsequently I was informed that the maximum rainfall recorded in that locality was 10·45 inches in 24 hours. I calculated that the discharge from 12 square miles for this rainfall would be 1,686 cubic feet per second; that the sectional area of the opening up to 14 feet would be 396 square feet, giving a mean velocity of the current through the opening of about 4·25 feet per second; and, as 10·45 inches in 24 hours is by no means an exceptionally heavy rainfall for the West Coast, I recommended the provision of a flooring and aprons, broader foundations, and a roadway, or bottom of girders supporting it, placed at 3 feet above M.F.L.

4. The result has been that the estimates Nos. 2 and 3 have now been submitted as alternatives; either of which may be adopted, if you do not approve of estimate No. 1. As estimate No. 1 is again submitted with the others, I understand that the Local Fund Engineer is still of opinion that his first estimate was quite sufficient.

5. I prefer estimate No. 2, which amounts to Rs. 13,000 and provides for a roadway, the same as in the first design, but raised sufficiently above maximum flood level, and for a flooring and aprons. The flooring and aprons have, however, I consider, been made needlessly expensive, and I would reduce the cost of this bridge by omitting the concrete under the flooring and aprons, by which there would be a saving of Rs. 651, and by using large packed stone for the aprons instead of rubble masonry, there would be a further saving of Rs. 568. The cost of the bridge would thus be reduced to Rs. 12,781.

6. Estimate No. 3 provides no flooring or aprons, but is for a bridge of 40 feet span on iron lattice girders to cost Rs. 11,000. The drawings which accompany this estimate do not give sufficient details of the iron work to enable one to understand clearly what is intended; and, in considering a design that provides no flooring or aprons, the fact is to be specially noted that, as stated in the report accompanying the estimate No. 1, "during and after heavy rains the channel of the stream is submerged, the water spreading over the fields."

7. Of the three estimates I recommend the one marked No. 2, the cost being reduced by the provision of less expensive flooring and aprons; and, as the cost exceeds Rs. 10,000, it requires your sanction.

31st MARCH 1885, No. 794 W., PUBLIC WORKS.

No. 473-C.

MEMORANDUM.

Referred to the Board of Revenue, with remark, that estimate No. 2, reduced as suggested by the Superintending Engineer, has the approval of the Chief Engineer, Public Works Department.

2. If the Board concurs, that estimate will be submitted for the sanction of Government.

9th March 1885.

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

Proceedings of the Board of Revenue, dated 21st March 1885, Mis. No. 2749.

Read—Memorandum from the Public Works Department, dated 9th March 1885, No. 473-C.

Resolution—dated 21st March 1885, Mis. No. 2749.

The estimate No. 2, as reduced by the Superintending Engineer, may be submitted for the sanction of Government, as proposed.

(True Extract.)

(Signed) C. F. MacCARTIE,
Acting Sub-Secretary.

To the Chief Engineer, Public Works Department,
with Superintending Engineer's letter and enclosures returned.

ORDER—dated 31st March 1885, No. 794 W., Public Works.

Estimate No. 2 (reduced to Rs. 11,781, as proposed by the Superintending Engineer, IV Circle) for constructing an iron lattice girder bridge across the Yeckar stream, on the road from Mangalore to Mulki, is sanctioned.

2. This sanction has been registered as Local No. 57 W. of 1884-85.

(True Extract.)

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

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

Exd. A. G. bert.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of Madras.

PUBLIC WORKS.

Dated March, 31st.

Road.

Encl.

G.O., 31st March 1885, No. 794 W.

MARCH.

Iron lattice girder bridge
across the Veekar stream

Estimate for — on the road from Mangalore to Mulki, sanctioned.

1283

SECR. ENGINEER'S OFFICE 4TH CIRCLE.

Crimate of Febry 1885.

No. 61

FW.

31

From,

The Superintending Engineer,

Fourth Circle.

To,

The Chief Engineer,
P.W. Department.

Sir,

Enclosures 30

By Ranghry.

I have the honor to forward herewith three alternative estimates for a bridge across the Yeekar stream, $13 \frac{3}{4}$ miles from Mangalore on the road to Mulki.

2 From the Report accompanying Estimate No. 1, dated 28th March 1884, for a Rolled Iron Girder Bridge of 30 feet span to cost Rs 6300, it will be observed that the catchment basin above the site of the bridge is stated to be "within 12 square miles" and that "below the head the soil

consists of a firm bed of clay".

3. Subsequently I was informed that the maximum rain fall recorded in that locality was 10.45 inches in 24 hours. I calculated

that the discharge from 12 square miles for this rain fall would be 1686 cubic feet per second, that the sectional area of the opening up to 14 feet would be 396 square feet,

giving a mean velocity of the current through the opening of about 4.25 feet per second. And as 10.45 inches in 24 hours is by no means an exceptionally heavy rain fall for the West Coast, I recommend

the provision of a flooring and aprons, broader foundations, and a roadway, or bottom of girders supporting it, placed at 3 feet above M.T.B.

4. The result has been that the Estimates Nos 2 and 3 have now

now been submitted as alternatives; either of which may be adopted, if you do not approve of estimate No 1. As Estimate No 1 is again submitted with the others I understand that the Local Fund Engineer is still of opinion that his first estimate was quite sufficient.

5. I prefer Estimate No 2, which amounts Rs 13,000 and provides for a roadway the same as in the first design, but raised sufficiently above maximum flood level, and for a flooring and aprons. The flooring and aprons have, however, I consider been made needlessly expensive, and I would reduce the cost of this bridge by omitting the concrete under the flooring and aprons, by which there would be a saving of Rs 651, and by using large packed stone for the aprons instead of rubble masonry.

masonry there would be a further saving of Rs 568. The cost of the bridge would thus be reduced to Rs 11,781.

6 Estimate No 3 provides no flooring or aprons, but is for a bridge of 40 feet span on iron Lattice girders to cost Rs 11,000. The drawings which accompany this estimate do not give sufficient details of the iron work to enable one to understand clearly what is intended. And in considering a design that provides no flooring or aprons, the fact is to be specially noted that as stated in the report accompanying estimate No 1, "during and after heavy rains the channel of the stream is submerged, the water spreading over the fields."

Of the three estimates I recommend the one marked No 2, the cost being reduced by the provision of less expensive flooring and

13
and aprons; and as the cost exceeds Rs 10,000, it requires your sanction.

I have the honor to be
Sir

Your most obt. servt

R. Beatty. Colonel R.E.
Supg. Engineer IV Circle

RF

From
The Sup. Engineer,
Fourth Circle.



1693/85

Dated 9th Feb 1885
Recd 10th Feb 1885

No. 61

By

Enc. 30

Bridge across the Yac-
han stream:-

For carrying 3 allu-
vial estimates for a
1 3/4 miles from Mou-
galour on the road to
Mulkai.

1885
Board of Revenue,
MADRAS.

To

The Chief Engineer,
P. W. Department



Proceedings, dated

2nd March 1885.

No.

2749

Price:

Subject.

Intimating the Chief
Engineer for Irrigation
P. W. D. that the estimate
asked for a bridge
across the Gokker stream
in S. Canara, may be
submitted for the
sanction of Govt.

P. W. Department

Memo.

Letter from S. E. II. Circle. No. 6/ 2/ 9 Feb. / 85

Referred to the Board
of Revenue, with remark that
estimate Rs 2, reduced as
suggested by the Suptg.
Engineer, has the approval
of the Chief Engineer P. W. D.
2. If the Board concurs,
that estimate will be
submitted for the sanction
of Government.

Ch.
15.2.85

15.3.85

The Secy to the Board of Revenue
with papers in origl.



Proceedings of the Board of Revenue.

Dated 21st March 1885.

No. 2749

Mis

READ Memorandum from the Public
Works Department, dated 9th March
1885. No 473. C.

Resolution.

The estimate No 2, as reduced
by the Superintending Engineer may
be submitted for the sanction
of Government, as proposed.

(True extract)

By Sub Secretary

To the Chief Engineer, P.W. Department with
superintending Engineer's letter and
enclosures returned.

The President L. F. B. 2nd V. 1885 has

Estimate No 2, submitted as
suggested by the S.E., is that
which should receive approval; but
should not cancel of S.E. Board to
adoption of same or otherwise, upon
final decision is accorded.

CM

24. 2. 88

Public

Current No. 1222

Letter No. 61

Dated the 25 February 88

From the S.E. IV Circle

NOTE OF REMARKS

The following designs are submitted for
constructing a bridge across
the Gekhar stream on Road
No. 23, from Bangalore to
Mudki:—

- No. 1. Rolled iron girder bridge
of 30 feet span — Rs. 4300;
- No. 2. Rolled iron girder bridge
of 30 feet span with flooring
and aprons — Rs. 13,000;
- No. 3. Iron lattice girder bridge
of 30 feet span — Rs. 11,000.

2. An examination of the
three designs leads to a
concurrence with S.E. IV in
giving the preference to
design No. 2. Of this bridge
the report states that
the design shows that the
masonry of the bridge is

"to be of reinforced
stone, resting on a foundation
of concrete, and the opening
spanned by rolled iron girders,
the latter from a design
by Richardson and Bradburn
of Bombay & of the dimensions
given and Davis's flat
plates - the sides of roadway
being protected by a cast
iron handrail." - The four
girders are stated to be
able to bear (exclusive of
their own weight and that
of the other masonry) a dead
weight of 12 tons and a moving
weight of 8 tons. How these
results are arrived at is
not shown, and the dimen-
sions are not given with
sufficient accuracy in the
cross section of the main
girders to permit checking.
It is probable the informa-
tion relative the main
girders has been omitted
by an oversight.

3 The height of the lower
flanges of girders above

the flooring is 18 feet, and
above M.F.L., $3\frac{1}{2}$ feet. - The
width allowed to roadway
is 14 feet. - S.E. IV suggests
that by the omission of the
concrete provided for under
the flooring and aprons,
and by the substitution
of large raked stone for
the rubble masonry in
the aprons, the estimate
should be reduced from
Rs. 13,000 to Rs. 11,481 - a difference
of Rs. 1,519. - Subject to
approval, this may well
be effected.

4. Design No. 2 has not yet
received the approval
of the L. & Board.

24th Feb/85
B.H.

11-13-18
No 794 W PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Under date the 31st March/85.

Read the following

From
The Supt Engineer
IV Circle { H.O. No. 61 of 9 Feb. 1885 }
Chief Engrs Memo No. — { No 473 of 9 March 85 }
Prop: Boag Revenue { " 2749 of 21st " " }

Minute No: 2
(Reduced to Rs 11,781.
as proposed by the
Supt Engineer IV Circle
for constructing an
iron lattice girder
bridge across the
Zekkar stream, on the
road from Mangalore
to Mullikis Sane
thong.

2. This sanction
has been registered
as Local No. 57 W
of 1884-85.

CU

24-3-85

US

24-3-85



FW 10/3

- BH

11/3

Secd
10/4/85-1

To the Hon. Revenue
with 30 envelopes
" L Co IV Chief
" L Co Dept.

(To the Chaplain for
Committee - initials)

Govt. of Madras.
PUBLIC WORKS.

27/4/85
Simpson

District

Road

Length

60.31 Mts 1885, No. 7944

Iron lattice girder bridge
across the Jeekar stream

Set for — in the road
from Mangalore to
Mulki, sanctioned

70

5

Ed. 807
174