

(1) பக்கங்களின் எண்ணிக்கை 44

(2) புதுக்கித் திருப்பிய நாள் 12/90

(3) ஆதாரங்குறிப்பவர் சுருக்கொப்பம் 10/9

தமிழ்நாடு ஆவணக் காப்பகம்.

தமிழ்நாடு அரசு

பெரியசாலை

துறை

அரசாணை எண். 1680
மு. கோப்புத் தாள் எண்.

அச்சகம்
பலவகை

நாள் :

26-6-1893

198

MSP

மடிக்கவோ கண்டபடி கையாளவோ கூடாது

1680
1

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following papers:—

From G. D. WYBROW, Esq., Superintending Engineer, I Circle, to the Chief Engineer, Public Works Department, dated Dowlaiswaram, 26th August 1892, No. 1148 G.D.

I have the honour to submit, herewith, plans and estimates, amounting to Rs. 8,850, for constructing a bridge over a branch of the Yeleru river at Divili on the road from Samalkot to Prattipadu (that is road from Pulimair to Kirlumpudi), received from the President, District Board, Gódvári, and to request that you will be so good as to obtain the sanction of Government to the same. The estimates have been scrutinized by this office.

No. 465 D.

Returned to the Superintending Engineer, I Circle, with the request that details of the iron work proposed may be supplied.

2. No information on the subject is afforded by these papers beyond the figured dimensions on plan of the centre girder 16" x 6".

3. As economy of transport is a desideratum, the substitution of steel for iron, which has besides other advantages, might be considered.

29th September 1892.

(Signed) J. PENNYCUICK, Colonel, R.E.,
Chief Engineer, P.W.D.

From G. D. WYBROW, Esq., Superintending Engineer, I Circle, to the Chief Engineer, Public Works Department, dated Dowlaiswaram, 1st December 1892, No. 1903 G.D.

With reference to your memo. No. 465 D., dated the 29th September 1892, I have the honour to inform you that I have added in the margin of the report attached to the estimate further particulars of the rolled girders. I beg to enclose a copy of the Local Fund Engineer's letter on the subject with the President's endorsement No. 681, dated 28th November 1892.

2. The plans and estimate are herewith returned.

ENCLOSURE.

From P. H. BROWN, Esq., c.e., Local Fund Engineer, Gódvári Circle, to the President, District Board, Gódvári, dated Coanada, 12th November 1892, No. 329.

In reply to your No. 904 M., dated 24th October 1892, forwarding Superintending Engineer's No. 1479 G.D., dated 6th ultimo, I have the honour to say that all the information required regarding the rolled beams is to be found in Messrs. Richardson and Cruddas' catalogue, pages 177 to 182. We have for several small bridges adopted this pattern with success.

In reference to the Chief Engineer's para. 3, I would say that it is chiefly on account of the easy transport that I have been in the habit of putting up these kinds of bridges.

The Horbury's patent flooring (see page 183) is easy of transport, easily fixed, and very strong.

The beam (see page 180), lb. 62 per foot, gives 17 tons safe distributed load in tons which is ample for our requirements.

No. 681 L.F.E.

Communicated with enclosures to the Superintending Engineer, I Circle, in reference to his letter No. 1479 G.D., dated 6th October 1892.

GODAVARI,
28th November 1892.

(Signed) W. W. PHILLIPS,
for President, District Board.

No. 86 C.

It is proposed to carry the superstructure of each bay of this bridge on three wrought iron girders, each 16" x 6" and weighing 62 lb. per foot run. The maximum distributed weight that may come on the centre girder is 17 tons, and, allowing a limiting stress of 5 tons per square inch in compression for rolled beams, the safe distributed load on this girder is only 14 tons. A heavier section is therefore necessary, and one of 17½" x 6½" and weighing 77 lb. per foot, capable of carrying a safe distributed load of 18½ tons on a 22' span, is the most appropriate section taken from the list quoted by the Board's Engineer. As, however, steel is a much more reliable material than wrought iron for rolled girders and facility of transport is in this case a desideratum, the use of that material is recommended and a girder 14" x 6" and weighing 53 lb. per foot will give the required strength.

There is no necessity to make the outer girders of equal strength with the centre girder.

The maximum load these girders have to carry is 9½ tons, and a section of steel girder 10" x 6" and weighing 43 lb. will give the necessary strength; the plan and estimate should be revised accordingly.

11th January 1893.

(Signed) G. T. WALCH,
Ag. Chief Engineer, P.W.D.

From G. D. WYBROW, Esq., Superintending Engineer, I Circle, to the Chief Engineer, Public Works Department, dated Dowlaishweram, 22nd May 1893, No. 540 G.D.

Referring to your memo. No. 86 C., dated 11th January 1893, ordering the revision of plan and estimate for constructing a Buckle plate bridge over Divili river in Godavari district, I have the honour to submit, herewith, a fresh estimate, prepared by the Local Fund Engineer and countersigned by the President, District Board, amounting to Rs. 9,040, and to request that sanction of Government may be obtained if it meets with your approval.

2. I beg to enclose copy of Mr. Brown's letter No. 495, dated 27th March 1893, together with Messrs. Richardson and Craddas' letter therein referred to, for your disposal.

3. The Local Fund Engineer is of opinion that the girders, as proposed by him, are easy of transport with the appliances at his disposal.

4. With reference to the correspondence regarding this bridge I may mention that on the Rushikulya canal several bridges have been constructed consisting of three rolled iron girders of 16" x 6" section and have so far answered admirably.

ORDER—dated 26th June 1893, No. 1680 W., Public Works.

The revised estimate, amounting to Rs. 9,040, for constructing a bridge over the Divili river at the sixth mile on the road from Samalkot to Prattipadu in the Godavari district, is sanctioned.

2. This sanction has been registered as Local No. 15 W. of 1893-94.

(True Extract.)

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

To the Superintending Engineer, I Circle.
" Local and Municipal Department, with enclosures.
Editors' Table.

Exd. A. D. Xavier.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

G.O. of {1893} Madras.
PUBLIC WORKS.

Dated June, 26th.

Recd.

Encl.

G.O., 26th June 1893, No. 1680 W.

JUNE.

Bridge

Revised estimate of Rs. 9,040, for constructing a — over Divili river at the sixth mile on the road from Samalkot to Pratti-pedu in the Gódavari district, sanctioned.

Copy of the Resolution passed by the District Board,
Godavari, at their meeting held at Rajahmundry
on 18/6/92.

Present
1680
A. W. B. Higgins Esq. President District Board.
E. C. Rowson Esq. Sub Collector. Rajahmundry.
Surgeon Major H. S. C. Carruthers. District Surgeon.
Rev. A. C. Schmidt. Rajahmundry.
M. R. K. Subbarayudu gar Dy. Collector.
" N. Subbarao Pantulu gar Rao Sahib.
" G. Venkatarao Pantulu gar Tahildar of Rajahmundry.
" G. Subbarayudu Naidu gar Dy. Tahildar, Pettapur.
Mahomed Abdur Rahim Sahib. Khan Sahib.
Maschi Mahomed Noroddin Sahib. " " " "
M. R. K. D. Venkatarathnam gar. Rao Sahib.
" J. S. R. Jayaramudu Rao Pantulu gar. " "
" E. Kothaparamaswami gar. " "
" A. Ramiah gar. " "
" M. Ramiah gar. " "
" B. Venkatarathnam gar. " "

14. Read letter No 15 of 2/6/92 from the Local Fund
Engineer forwarding for sanction and allotment
of funds an estimate for Rs 8,580 for constructing
a buckle plated Bridge of 3 vents of 22' span over
the Divili river on the road from Pulimera to
Kirlampudi.

The estimate is sanctioned. Funds will be provided
in due course.

(sd). A. W. B. Higgins
President D. Board.

For President D. Board.



No. 11489D

FROM,

G. D. Wyllow Esq
SUPERINTENDING ENGINEER

FIRST CIRCLE.

TO,

THE CHIEF ENGINEER

PUBLIC WORKS DEPARTMENT.

DOWLAISHWERAM, 26th August 1892.

Sept 29th

SIR,

I have the honor to submit herewith plans and estimates amounting to Rs 8850 for constructing a bridge over a branch of the Yleru river, at Divili, on the Road from Samuleotta to Prattipad, received from the President District Board Godavari, and to request that you will be so good as to obtain the sanction of Government to the same. The estimates have been scrutinised by this office.

I have the honor to be,

Sir,

Your most obedient

G. D. Wyllow.

Sup^d Engineer 1st Circle.

27-8

Enclosures 8.
3 plans
1 estimate
1 Report
1 data
1 Specification
1 Copy of Dist. Board's resolution

* that is road from
Pulimair to Kiri
-impudi-

8978/92

P. W. CURRENT No. 8978

FROM,

G. S. Wylow Esquire

SUPERINTENDING ENGINEER

FIRST CIRCLE.

TO,

THE CHIEF ENGINEER

PUBLIC WORKS DEPARTMENT.

DATED 26th

DESPATCHED

RECEIVED

August
8-9-92

1892.

No. 11489D

ENCLOSURES 8

SUBJECT.

Bridge over a branch of
Yelaru river at Dividi on the
road from Samalacotta to
Prattipadu - Submitting for
sanction of Government
plans and Estimate of Rs.
8850 for Congra -

Y No 465 D of 29-9-92

P. W. D

Memo-

From the S. E. I circle No 11489 D of 26th 8th 92

Returned to the

Superintending Engineer
I circle with the request
that details of the iron
work proposed may be
supplied.

2. No information on the
subject is afforded by
these papers beyond the
figured dimensions on
plan of the centre girder
16" x 6"

3. As economy of transport
is a desideratum, the
substitution of steel for
iron, which has besides
other advantages, might
be considered.

S. E. I circle.
with plans & estimates.

289/92

S 207

No. 1903 b. 2

FROM

G. D. Wyllie Esq.
SUPERINTENDING ENGINEER

FIRST CIRCLE.

TO

THE CHIEF ENGINEER

PUBLIC WORKS DEPARTMENT.

DOWLAISHWERAM, 1st December 1892.

Enclosures. 8

3 Plans.
1 Estimate
1 Report
1 Data
1 Specification
1 Copy of L. & L. Engineer's
letter with President's
endorsement.

SIR,

With reference to your memo
No. 465 D dated the 29th September
1892, I have the honor to inform
you that I have added, in the margin
of the Report attached to the estimate,
further particulars of the rolled
girders. I beg to enclose a copy of
the Local Fund Engineer's letter on
the subject with the President's en-
dorsement No. 681 dated 26th November
1892.

2. The plans and estimate are
herewith returned.

I have the honor to be,
Sir,
Your Most Obedt. Servt.

G. D. Wyllie
Supg. Engineer & Circle

No 465 D of 29-9-92

MS. 147-9

Dr. J. D. Wyllie
13/12/92

212

P. W. CURRENT No. 12/58

FROM

G. H. Wyllie Esquire
SUPERINTENDING ENGINEER

FIRST CIRCLE

TO

THE CHIEF ENGINEER

PUBLIC WORKS DEPARTMENT.

DATED 1st Dec. 1902
DESPATCHED 3rd Dec. 1902
RECEIVED 8th Dec. 1902

No. 1903 B &

ENCLOSURES 8.

SUBJECT.

Bridge over Devili river
on road from Pulimuru to
Kirlampudi - Re-submit-
ting plans and Estimates
for concrete -

In order

note by G.H. 168/9
This proposed to carry
the superimposition of
each bay of this bridge.
The 3rd span each
16" x 6" and weighing
62 lbs per foot run - The max
distributed weight that
may come on the centre
span is 17 tons, and
allowing a live load
stress of 5 tons per square
inch is compression for
other beams, the safe
distributed load on the first
is only 14 tons - A heavier
section is therefore necessary,
and one of 17 3/4" x 6 5/8"
and weighing 77 lbs per
foot, capable of carrying
a safe distributed load
of 18 3/4 tons on a 22' span
so the most appropriate
section taken from the
list quoted by the Bd.
Eng^r. As however
steel is a much more

Local Fund Eng^r's office
Cananda, 12th November 1892

13
Brown Esq C.E.
Local Fund Engineer
Godavari Circle

President
District Board, Godavari

to your No. 204 d/24th
forwarding Sup^r Engineer
6th ultimo, I have the
that all the information
regarding the rolled beams
in Messrs Richardson
s catalogue pages 177 to
for several small
led this pattern with

reference to the Chief Eng^r's
uld say that it is chiefly
of the easy transport
been in the habit of
this kind of bridges.
aburys patent flooring
is easy of transport
and very strong.

P. W. CURRENT No. 12158

FROM

G. D. Wyllie Esquire
SUPERINTENDING ENGINEER

FIRST CIRCLE

TO

THE CHIEF ENGINEER

PUBLIC WORKS DEPARTMENT.

DATED 1st Dec. 1902
DESPATCHED 3rd Dec. 1902
RECEIVED 8th Dec. 1902

No. 1903 B D.

ENCLOSURES 8.

SUBJECT.

Bridge over Senili river
on road from Pulimuru to
Kirlampudi. Re-submit-
ting plans and Estimates
for concrete.

Whichever material
thin w. s. for steel
girders, and facility
of transport in the
case of steel girders,
the use of thick material
is recommended, and
a girder 14" x 6" and
weighing 53 lbs per foot
with pins the required
strength.

There is no necessity
to make the outer girders
of equal strength with
the centre girder.

The load these girders
will carry is 9 1/2 tons,
and a section of
steel girder 10" x 6"

weighing 43 lbs with
pins the necessary

strength. The estimate
is herewith submitted.

Yours
G. D. Wyllie

15-12-02

To the S. S. D. Office

with enclosures

The local foundry
proposes to carry
each bay on 3 girders
of equal section & 10
strength, and the
section he proposes
is 16" x 6" weighing
62 lbs per foot.

He also states that
the strength of each
girder should be
such as to carry a
safe distributed load
of 17 tons.

The load per span
will be

Plates	22' x 16.5 x 14	= 5082
Web	22' x 15 x 120	= 39600
Line load	22 x 15 x 80	= 26400
		<hr/> 71082

Of which half or 35541 lbs
will be carried by
the centre girder.

Add weight of girder 1564 lbs
Total load on 36905 lbs
= 16 1/2 tons

P. W. CURRENT No. 12158

FROM

G. D. Wyllow Esquire
SUPERINTENDING ENGINEER

FIRST CIRCLE

TO

THE CHIEF ENGINEER

PUBLIC WORKS DEPARTMENT.

DATED 1st
DESPATCHED 3rd
RECEIVED 8th

No. 1903 & 2

ENCLOSURES 8. 7 (Plans)

SUBJECT.

Bridge over Sivilir river
on road from Palimaru to
Kirlampudi - Re-submit-
ting plans and Estimates
for concrete.

The L. T. Ryf. has
observed that the
Rubbish Richardson &
Criddle in their pre-
sent state that such a
section is capable of
carrying a safely
distributed load of 17 tons
that would
R. L. T. would be a
to strength of the section
they probably assume
a factor of safety of 3,
but the outside safe
limit for compression
on these rolled beams
is 5 tons per sq. inch -
for this section $I = 738$
 $M = \frac{P I}{4} = \frac{5 \times 738}{8} = 462 \text{ inch tons}$
 $M = 462 = \frac{W L}{8} = \frac{W \times 22 \times 12}{8}$
 $W = 14 \text{ tons and this}$
section will strong enough.

I think that a section
of 18" x 7" should be
adopted - this is
common section -
Messrs R. L. Criddle
give the safe distributed

load for a 22' span
as 22 tons - Messrs.

Wren & Co. for a 11
similar section & span
give it as only 18 tons!

worked out it comes
to about 19 1/2 tons -

Messrs R. L. T. have
also a block section
17 3/4" x 6 5/8" and

weighing about 77 lbs per
ft. The moment of inertia
of this section is 1105

$M = \frac{P I}{4} = \frac{5 \times 1105}{8} = 623 \text{ inch tons}$

$\frac{W L}{8} = 623$
 $W = \frac{623 \times 8}{22 \times 12} = 18 7/8 \text{ tons}$

So that this section
may be adopted -
The safe distributed
load on this section
16 3/4" x 6 1/2" at 70 lbs per ft.

P. W. CURRENT No. 12/58

FROM

G. D. Wyllow Esquire
SUPERINTENDING ENGINEER

FIRST CIRCLE

TO

THE CHIEF ENGINEER

PUBLIC WORKS DEPARTMENT,

DATED 1st Dec 1922
DESPATCHED 3rd Dec 1922
RECEIVED 8th Dec 1922

No. 1903 G.D.

ENCLOSURES 8. 7 (364)

SUBJECT.

Bridge over Devili river
on road from Pulimera to
Kirlampudi. Re-submit-
ting plans and Estimates
for congee.

highest R.L. at
20 tons - it will be
just 16 tons 200 is too
light - As however
Steel is a much better
material for shed
riders than iron,
and in this case
cost of primary iron
is an object, the
use of steel plates
is recommended -

Allowing an max
strain of 8 tons per inch
a rider 14" x 6" L
weighing 53 lbs per
foot is strong enough.

$$I = 494$$

$$M = \frac{8 \times 494}{7} = 565 \text{ inch lbs}$$

$$W = \frac{565 \times 8}{22 \times 12} = 17 \frac{1}{4} \text{ tons}$$

Further it is a great
waste of material
to make the two

outer riders of
equal strength with
the outer rider -
The ^{max} load on each of the
outer riders will be

$$\frac{35541}{2} = 17770 \text{ (12)}$$

add for rider,
and railing 3000

$$\text{Total} = 20770 \text{ lbs}$$

$$= 9 \frac{1}{2} \text{ tons}$$

For this a section of
Steel rider 10" x 6" and
weighing 43 lbs will
be sufficient.

$$I = 209$$

$$M = \frac{8 \times 209}{5} = 334$$

$$W = \frac{334 \times 8}{22 \times 12} = 10 \text{ tons}$$

July

13.12

Print

N^o 329.

Local Fund Engrs office

Cocanada, 12th November 1892

From.

13

P. H. Brown Esq C.E.

Local Fund Engineer

Godavari Circle

To

The President

District Board, Godavari

Sir

In reply to your N^o 204 d/26th October 1892 forwarding Supg Engineer N^o 1479 G.D. d/6th ultimo, I have the honor to say that all the information required regarding the rolled beams is to be found in Messrs Richardson and Cruddas catalogue pages 177 to 182. We have for several small bridges adopted this pattern with success.

+ With D.W.

DP

8-12-92-

In reference to the Chief Engr's para 3, I would say that it is chiefly on account of the easy transport that I have been in the habit of putting up these kind of bridges.

The Harbours patent flooring see page 183, is easy of transport easily fixed and very strong.

FROM The beam, see page 180, the 62
per foot give 17 tons safe distributed
load in tons which is ample for our
requirements.

TO I have re re
1201 P. A. Brown C.E.
L. F. Engineer

DA
DE
RE (True Copy)

No. 681
L.F.E.

Communicated with enclosures
to the Supg. Engineer, ^{the} Circle, in
reference to his letter No. 1479 G.D.
6-10-92

1201 W. H. Phillips.

Godanari Dist Board Office } For President Dist Board
20-11-92.

1201
20-11-92

(True Copy)

Supg. Engineer Circle.

2-12

P.W.D. 6
No. 86C of 11 January 1898

Memorandum. 14

Letter from the S. E. India No. 1903 G.S. April 12. 92

It is proposed
to carry the super-
structure of each
bay of this bridge
on three wrought
iron girders each
16"x6" and weighing
62 lbs per foot run.
The maximum dis-
tributed weight that
may come on the
centre girder is 17
tons, and allowing
a limiting stress of
5 tons per square

inch in compression
for rolled beams,
the safe distributed
load on this girder
is only 14 tons. A
heavier section is
therefore necessary,
and one of $17\frac{3}{4} \times 6\frac{5}{8}$
and weighing 77 lbs
per foot, capable
of carrying a safe
distributed load
of $18\frac{3}{4}$ tons on a 22'
span is the most
appropriate section
taken from the
list quoted by the
Board's Engineer. As
however steel is a
much more reliable
material than
wrought iron for

rolled girders, and
facility of transport
is in this case a
consideration, the
use of that material
is recommended,
and a girder 14×6
and weighing 53 lbs
per foot will give
the required strength.

There is no necessity
to make the outer
girders of equal
strength with the
centre girder.

The maximum
load these girders
have to carry is $9\frac{1}{2}$
tons, and a section
of steel girder 10×6
and weighing 43 lbs
will give the necessary

strength; the
plan and estimate
should be revised
accordingly.

22/1/93

9/1/93

No. 4652 of 27-1-92

No. 86C of 11 January 1893

S. E. I. L. L. L.
with 6 enclosures

Q 13/1

No. 540 G.D.

16

FROM

G. D. Wylerow Esq
SUPERINTENDING ENGINEER

FIRST CIRCLE.

TO

THE CHIEF ENGINEER

PUBLIC WORKS DEPARTMENT.

DOWLAISHWERAM, 22nd May 1893.

Enclosures, 9

- 3 Plans
- 1 Estimate
- 1 Specification
- 1 Data
- 1 Report
- 1 Copy of L. & C.
- Eng's letter No. 495
- 27-3-93 with
- 1 letter from
- Messrs Richardson & Cruddas.

SIR,

Referring to your Memorandum No. 86C dated 11th January 1893, ordering the revision of plan and estimate for constructing a Buckle plate Bridge, over Dindil river, in Godavari District. I have the honor to submit herewith a fresh estimate prepared by the Local Fund Engineer, & countersigned by the President, District Board, amounting to Rs. 9040, and to request that sanction of Government may be obtained, if it meets with your approval.

2. I beg to enclose copy of Mr. Brown's letter No. 495-27-3-93 together with Messrs Richardson & Cruddas' letter therein referred to, for your disposal.

3. The Local Fund Engineer is of opinion that the girders, as proposed by him are easy of transport, with the appliances at his disposal.

4. With reference to the correspondence regarding the bridge I may mention that

on the Rushikulya Canal several bridges
have been constructed consisting of 3
rolled iron girders of 16"x6" Section, &
have so far answered admirably -

I have the honor to be,

Sir,

Your most Obedient St.

J. D. W. Jones,

Sup^r Eng^r 1st Circle.

1690
17

P. W. CURRENT No. 5001

No 465 D 8 29.9.92
86 C 8 11.1.93

FROM

G. D. Wyllie Esquire
SUPERINTENDING ENGINEER

FIRST CIRCLE

TO

THE CHIEF ENGINEER

PUBLIC WORKS DEPARTMENT.

DATED 22nd } May 1893;
DESPATCHED 28th }
RECEIVED 31st }

No. 540 G.D.

ENCLOSURES 7.8 (3 plans)

SUBJECT.

Ruckle plate bridge over
Mindi river in Gadawani
District — submitting for
sanction of Government
an estimate amounting
to Rs. 9040 for constructing
a —

1650
18
The calculations
for the correct
sections of piers
are given in the
notes with the
original estimate.

I still think
that ^{rust} steel is a better
material than iron
for these piers, &
the only reason appearing
for their non-adoption
is high cost.

Anchor bolts & washers
I will keep them
in stock —

Revised esti-
mate for sanctioned

over
17.63

97
19.6

22.8 82

22.6

Public Works Department.

Current No.

500

(19)

Letter No.

540 G B.

Dated

12th May, 1893

From the

Super Engineer & Circle

TECHNICAL NOTE.

Name of work

Buckle plate bridge over
the Devili river on road from Puli-
-nair to Kirlampudi in the Goda-
-vari District.

Amount of Estimate Rs 9040

The Super Engineer & Circle sub-
mits with reference to this office
Memo W. 86 & dated 11th Jan 1893
a fresh estimate amounting to
Rs 9040 prepared by the Dist
Board Engineer for the sanction
of Govt. If it meets the approval
of the Chief Engineer.

In the memo under reference
it was ordered that the super-
-structure of each bay should
be carried on 3 steel girders,
the centre girder to be of a section
of 14" x 6" weighing 53 lbs per foot
& the side girders 10" x 6" weighing
43 lbs per foot & the S.E. requested
to have the estimate revised ac-
-cordingly.

The estimate was submitted

for section provides for carrying
 the superstructure of each bay
 on 4 rolled iron girders, apparent-
 ly of equal section $14 \times 5\frac{1}{2}$ weigh-
 ing 56 lbs per foot, as per allow-
 ance made in the report, based
 on the letter of Messrs. Richardson
 & Croderer in which that firm
 states that steel girders are not kept
 in stock through there can be sup-
 plied in special order in the same
 course of 4 months to suggest that
 the platform be carried by 4 rolled
 iron girders instead of 3 of a
 section of $14 \times 5\frac{1}{2}$ weighing 56 lbs
 per foot & if it is desired the
 other girders may be reduced
 to a section of 12×5 weighing
 42 lbs per foot which they consider
 as ample.

Messrs. R & C quote Rs 2432 for
 the girders & iron work complete
 with wheel guards & hand rails
 without freight to Coconada, as
 this quotation the estimate for
 the iron work is based.

The rates for engineering works
 are fair. The freight from Boma
 to Coconada, viz Rs (3905-3910)
 1915 appears to be very high.

The plans & estimate have been
 considered by the President
 of the Board.

The L.R. is submitting the estimate
 & states that several bridges
 have been constructed over the
 Arabakura canal consisting of

5001

16800

3 rolled iron girders of a section
 16×6 to have as far as possible
 admirably

The
 in the

on the
 on the
 on the

Current No. 8978

Letter No. 114860.

Dated 26 August 1892

From the Deputy Engineer & Clerk.

TECHNICAL NOTE.

Constructing a bridge over the Develi
 river on the 6th mile of road from
 Samulbatta to Prattipadu in the
 Godavari District
 Amount of Estimate Rs 8850

This bridge is proposed to be built
 over a branch of the Yelam river
 at Develi on the 6th mile on road
 from Samulbatta to Prattipadu
 in the Godavari District.

The design provides for a
 roadway 15 feet wide between
 wheel guards, carried by 3
 rolled iron girders with working
 patent flaring plates. The
 bridge is to consist of 3 spans
 of 22 feet each, giving a clear
 roadway of 66 feet. The
 piers & abutments are to be raised
 10 feet high above floor level
 to bottom of girders.

The surface soil is stated to
 be sandy & the sub soil of
 black clays. The foundations
 of

of the piers, abutments & wings are
to be carried 6 feet deep in two
footings of 3 feet each. The lower
footings to be built of concrete & the
upper 3 feet together with the super-
structure built of rough stone in
chunama, plastered with 2 coats
of chunama, except the copings
& parapet walls & caps of piers
which are to be of cut
stone work set in chunama masonry.
Provision is made in the
estimate for rough stone aprons
around the piers & abutments
6 feet wide of dry rough
stone, instead of fluting the
bridge structure.

The following items are
provided:-

Pile driving including woodwork	Rs 600
Excavation of foundations	350
Forming & scaffolding	200
Baling	300
Iron work including freight	4610
Carriage to site & fitting charges	

The rates, as far as can be
checked, are given to the Civil
Engt. with the Rs 72.

The plan & estimate have been
counter-signed by the President
& sanctioned by the District
Board vide its resolution
dated 18th June 1892.

Whinli with drawings

17-18-92

4650 of 29-9-92

Sanction

estimate is drawn

by M. L. G.

over

18-18-92

N^o 1680 W of 26 June 1893.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

(21)

Read the following

In pursuance of the Suppl. Engineer I Circular N^o 114 D. G. D. of 26 Aug 92.
To the Suppl. Engr., I Circle, N^o 465 D of 29th Sept 92.
Do Do Do 1903. G. D. of 1st Dec. 92.
Print with signature.
To the Suppl. Engr., I Circle, N^o 26 C of 11th Jan 1893.
Do Do Do 1903. G. D. of 22nd May 93.

The revised estimate
amounting to Rs 9,040
for Constructing a
bridge over the Divili
river at the 6th mile
on the road from
Samalcotha to Pratti-
pedu in the Godavari
District, is sanctioned.

2. This sanction has
been registered as Local
N^o 15 W of 1893-94.

DESPATCHED

10 JUL. 93

20 The S. E. I Circular with Encls.

" Local & Municipal Encls. (82)

Editors' Table.

1680
22

Bridge over the
river in the

old 22/6
C.S. 20/6
H.C. 1-6.

cd 5007

Govt. of (1893) Madras.
PUBLIC WORKS.

Dated

11/12

Recd.

Encl.

G.O. 26 June 1893. No. 16804

Bridge

=

Revised estimate
of Rs 9000 for and by
a — over Sivili
river at the 6th mile
on the road from
Samulcotta to
Pattipadu in the
Godavari ST
sanctioned.

20/11/93