

(1) Number of pages 14
(2) Date of repair 30.3.44
(3) Initials of the Referencer _____

MADRAS RECORD OFFICE.

Government of Madras.

Public works DEPARTMENT.

G.O. No. 1913	Press
16970.	~~Mis.~~
Dated 11. 8.	1876.

Not to be folded or roughly handled

9/11/44

*Proceedings of the Madras Government, Public Works Department,
11th August 1870.*

No. 169.

Read the following:—

No. 298.

APPLICATION from the Agent and Manager of the Madras Railway Company requesting the sanction of Government to the following estimate:—

Renewing the smaller arch openings of the Palar Bridge with wrought-iron									
girders, as per Plan No. 156:—									rs.
Chargeable to Capital	...	...	...	...	...	...	...	...	25,329
Do. to Revenue	...	...	...	...	...	...	...	...	29,498
Total...									54,827

In forwarding the estimate the Agent and Manager quotes as follows from the Acting Chief Engineer's report:—

"This bridge as it now stands consists of seven skew arches, 31 feet 9 inches span, at either end, with five wrought-iron girders, 64 feet span, in the centre, all supported on masonry piers. For some time past cracks have been noticed in the arches, mention having been made of them in the Deputy Chief Engineer's report as early as 1868. As, owing to settlement of the foundations, these cracks have gradually increased, (*vide* Deputy Chief Engineer's reports marginally noted,) it has been deemed advisable to re-place them by wrought-iron girders."

18th January 1869.
14th April "
15th January 1870.
27th April "

2. The Deputy Chief Engineer's reports referred to by the Agent and Manager are as follow:—

Report of 18th January 1869.

"The bridges generally are in good order. I regret to have to report an exception at the Palar. The east and west skew arches nearest the girder openings are cracked along the spiral coursing, and it will be necessary to put up centerings at once and renew the arches. From the appearance of certain cracks in the spandrils I am inclined to think that there has been a settlement of the abutments, probably due to defective foundations."

Report of 14th April 1869.

"The cracks in the east and west of skew arches of the Palar are extending, and, as this seems to be due to a further settlement of the abutments nearest to the girder openings, it will probably be advisable to take down the arches altogether and substitute girders."

Report of 15th January 1870.

"Palar Bridge.—The cracks in east and west arches next to girder openings (alluded to in former reports) are said to be extending. In west arch a new crack is reported. Centres have been put up under these arches. I think it would be advisable to take down the arches and put up girders as soon as possible."

Report of 27th April 1870.

"Palar Bridge, 106 miles 21 chains.—The cracks in the arches of this bridge, referred to in my last and also in former reports, are extending, and a new crack has appeared in the spandril of the western abutment arch."

*Proceedings of the Madras Government, Public Works Department,
11th August 1870.*

3. In the communications from this office, embodied in the orders of Government marginally noted and in letter No. 228, dated 2nd June 1870, further particulars were given regarding the condition of the Palar Bridge.

G. O., 14th May 1869, No. 1,587.
" 13th Sept. " 3,015.
" 24th Feb. 1870, " 635.

4. The total amount of the estimate is Rupees 54,827, of which it is proposed by the Agent and Manager that the difference in cost between re-building the arches with masonry and that of the wrought-iron girders should be charged to "Capital." In this arrangement I cannot, however, concur. There is, I think, little doubt but that the failure of the arches in question is due to the inadequacy of the foundations. The line was opened for traffic in 1860, and the bridge fell under maintenance, of way in 1863; Revenue has, therefore, had the use of the bridge for seven years. No extraordinary flood or other untoward event is alleged as having hastened the failure of the structure, and, had it been proposed to re-place the existing arches by others of the same material, the question as to the incidence of the charge would, I imagine, not have been raised: the substitution of fresh arches resting on piers still showing signs of subsidence in no way due to the thrust of the superstructure is out of the question; and, were this proposal sanctioned, Capital would, in fact, be called upon to bear the charge twice over, the case being that of an unavoidable substitution of one species of structure for another, due provision for the purpose intended to be served having been once made, and no permanent enlargement or improvement in the character and object of the previous structure being contemplated.

5. I am, therefore, of opinion that the entire charge should fall upon Revenue.
MADRAS, (Signed) C. J. SMITH, Captain, R. E.,
20th July 1870. Acting Deputy Consulting Engineer for Railways.

MADRAS RAILWAY.
SOUTH-WEST LINE.
Summary of Schedules.

Description.	Schedule No. I.	Schedule No. II.	Totals.		
	RS. A. P.	RS. A. P.	RS. A. P.		
Renewing the smaller arch openings of the Palar Bridge with wrought-iron girders, as per Plan No. 156		54,827 0 0	54,827 0 0		
			54,827 0 0		

Company's Rupees fifty-four thousand, eight hundred, and twenty-seven.

CHIEF ENGINEER'S OFFICE, (Signed) H. R. P. CARTER,
27th June 1870. For Acting Chief Engineer.

NOTE.—Amount already sanctioned in Schedule No. II., Rupees 16,67,477-15-6.
(Signed) R. B. ELWIN,
Agent and Manager.

*Proceedings of the Madras Government, Public Works Department,
11th August 1870.*

MADRAS RAILWAY.
SOUTH-WEST LINE.
DISTRICT 5, SECTION I.
Schedule No. II.

Nature of Work.	Amount of Estimate.			Remarks.
	RS.	A.	P.	
Renewing the smaller arch openings of the Palar Bridge with wrought-iron girders, as per Plan No. 156	54,827	0	0	Estimate annexed.
Total...	54,827	0	0	

CHIEF ENGINEER'S OFFICE, (Signed) H. R. P. CARTER,
27th June 1870. For Acting Chief Engineer.
(Signed) R. B. ELWIN,
Agent and Manager.

MADRAS RAILWAY.
SOUTH-WEST LINE.
Schedule No. II.

Estimate of the cost of renewing the smaller arch openings of the Palar Bridge with Wrought-Iron Girders, as per Plan No. 156.

Description.	Quantity.	Rate.			English expenditure.			Indian expenditure.			Totals.
		RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	
Cost of Centerings ... No.	7	233	12	0	.....			1,636	4	0	
Taking down old Arches, etc. ... No.	14	200	0	0	.....			2,800	0	0	
Cost of new Girder Stones, C. ft.	160	2	0	0	.....			320	0	0	
Masonry in raising Piers, C. yds.	438	10	0	0	.....			4,380	0	0	
Teak Timber in Sleepers, C. ft.	936	3	8	0	.....			3,276	0	0	
Planking Gangway 2 inches thick ... Sq. ft.	774	0	10	0	.....			483	12	0	
Wrought-iron in Girders, etc. ... Tons.	106	330	15	9	26,313 4 2			8,771	1	4	
Painting Iron work ... Sqs.	148	3	0	0	.....			444	0	0	
Tarring Timber work ...	74	0	4	0	.....			18	8	0	
Carriage of Girders, Teak Sleepers, and Planking, Tons.	130	10	0	0	.....			1,300	0	0	
Labour loading on Trucks, Trucking, and Fixing ...	...	.....			.....			100	0	0	
Contingencies ...	...	.....			.....			4,984	2	6	
Total...	...	.....			26,313 4 2			28,513	11	10	54,827

Company's Rupees fifty-four thousand, eight hundred, and twenty-seven.

CHIEF ENGINEER'S OFFICE, (Signed) H. R. P. CARTER,
27th June 1870. For Acting Chief Engineer.

(Signed) R. B. ELWIN,
Agent and Manager.

*Proceedings of the Madras Government, Public Works Department,
11th August 1870.*

ALLOCATION.

PALAR BRIDGE.

Renewing smaller openings with Girders.

	Rs.	A.	P.
Taking down Arches, etc.	2,800	0	0
Cost of new Girder Stones	320	0	0
Masonry in raising Piers, Cubic yards 438, at Rupees 10	4,380	0	0
Teak Timber in Sleepers	3,276	0	0
Planking 2 inches thick for Gangways	483	12	0
Wrought-iron in Girders, etc.	35,084	5	6
Painting Iron work	444	0	0
Tarring Timber work	18	8	0
Carriage of Girders, Teak Sleepers, and Planking	1,300	0	0
Labour loading on Trucks, Trucking, and Fixing... ..	100	0	0
Contingencies	4,820	6	6
	53,027	0	0
<i>Re-building the smaller Arches.</i>			
Taking down Arches, etc.	2,800	0	0
Masonry in Arches, etc., Cubic yards 2,118, at Rupees 10	21,180	0	0
Scaffolding, at 5 per cent.	1,200	0	0
Contingencies	2,518	0	0
	27,698	0	0
Renewing with Girders, etc.	53,027	0	0
Re-building the smaller arches	27,698	0	0
Chargeable to Capital...	25,329	0	0
Total amount as per foregoing estimate...	54,827	0	0
Chargeable to Revenue...	29,498	0	0

(Signed) H. R. P. CARTER,
For Acting Chief Engineer.

No. 170.

ORDER THEREON, 11th August 1870, No. 1,913.

RAILWAY, No. 18.

G. O., No. 1,587, dated 14th May 1869.
" " 635, " 24th Feb. 1870.

Railway, as it was reported that cracks had appeared in several of the arches, owing to subsidence of the foundations of the abutments.

2. In compliance with these orders the Acting Deputy Consulting Engineer now submits an estimate of Rupees 54,827 for substituting iron girders for the arches over the smaller openings of the bridge.

3. The Agent and Manager proposes to debit "Capital" with Rupees 25,329, being the difference in the cost of re-building the arches with masonry and that of the wrought-iron girders with which it is proposed to re-place them; but Captain Smith is of opinion that, taking into consideration the circumstances of Revenue having had the use of the bridge for seven years, that the failure of the

*Proceedings of the Madras Government, Public Works Department,
11th August 1870.*

present structure is not caused by any extraordinary or exceptional circumstances, and that the present substitution of materials is for an object the provision of which has already been borne by "Capital," the total amount of the estimate now submitted should be debited to "Revenue."

4. Concurring in the views expressed by the Acting Deputy Consulting Engineer, His Excellency in Council, while sanctioning the estimate, directs that the amount shall form a charge against "Revenue."

(True Extract.)

Colonel, R. E.,

Secretary to Government.

To the Acting Consulting Engineer for Railways.

Exd. A. S. Rodgers.

Govt. of 1870: Madras

PUBLIC WORKS.

To

THE ACTING CONSULTING ENGINEER

FOR RAILWAYS

Dated August 11th.

Recd.

Encl.

G. O., 11th August 1870, No. 1,913

AUGUST 1870

Nos. 169-170

Bridge over the Palar River, (Railway).
—The estimate of Rupees 54,827 for substituting iron girders for the arches of the smaller openings of the bridge over Palar River, on the South-West Line of Madras Railway, sanctioned with remark

M. J. C. de Silva
Pro. of Govt. of Ceylon
No. 2820

From
The Consulting Engineer
for Railways,

To
The Secretary to Government
P. W. Department
Fort Saint George

Dated 20 } July 1870.
Received 21 }
Encl. 4 No. 218

Forwarding application
from the Agent & Manager
requesting the sanction of
Government for renewing
the smaller arch openings
of the Palar Bridge with
wrought iron girders.
No 1913-11 August 1870

A-169

sent to Govt. 26.5.4/70

No 1913 P. W. D.
Proceedings of the Madras Government

Under date the 11 July 1870

Read the following

From

The Consulting Engineer
for Railways } (H. E. No. 298 of 20 July 1870)

G. O. No. 1587 dated 14 May 1869.

G. O. No. 635 dated 24 Feb. 1870.

In Proceedings originally noted the Govt. requested that measures might be taken for securing the stability of the bridge over the Palar River on the South West Line of the Madras Railway, as it was reported that cracks had appeared in several of the arches, owing to subsidence of the foundations of the abutments.

In compliance with
Ag. by
these orders the Consulting

Engineer now submits
an estimate of Rs 54,827
for substituting iron
girders for the arches
over the smaller openings
of the Bridge.

The Agent and
Manager proposes to
debit "Capital" with Rs.
25,329, being the difference
in the cost of rebuilding
the arches with masonry
and that of the wrought
iron girders with which
it is proposed to replace
them, but ^{Capt Smith} ~~the Consulting~~
Engineer is of opinion
that, taking into con-
sideration the circum-
stances of Revenue
having had the use of
the ^{bridge} for 7 years, that

the failure of the present
structure is not caused
by any extraordinary
or exceptional circumstan-
ces, and that the present
substitution of materials
is for an object the provi-
sion of which has already
been borne by "Capital";
the total amount of the
estimate now submitted
should be debited to
"Revenue".

Concurring in the
views expressed by the
Ag. Dy. Consulting Engineer,
His Excellency in Coun-
cil, while sanctioning
the estimate, directs that
the amount shall form
a charge against "Revenue".

Desp. 12/5/70

To the Comdg. Engr. for
Railways, Secy. to Govt. of India

C/2820
Govt. of 1870 Madras.

PUBLIC WORKS.

The Acting Consulting
Engineer for Railways

Printed

at

by

R. O. W. Hughes, Esq., 1913

No. 169-170

Bridge ~~over~~ over the Palas River.

(Railway) - The Retention of Rs.

54,827 for substituting iron
bridges for the arches ~~of~~ over
the smaller openings of the bridge
over the Palas River on the South
West Line of the Madras Railway,
sanctioned with remarks.