

(1) Number of pages _____

(2) Date of repair _____

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No.	3423	Press
B.P. No.		Mis.
Dated	2. 12.	195
		1875

Not to be folded or roughly handled

D. P. W.
SOUTH ARCOT.

No. 168

DISTRICT ENGINEER'S OFFICE.

Camp

Dated

25th June 1875.

From

The District Engineer,

To

South Arcot.

The

The Secretary to Government
D. P. W.

2 Enclosures.

Sir,

1 Statement
of expenditure
1 Section

I regret that I have not been able to forward this report regarding the Ponnai Bridge near Cuddalore, but I have not been able to do so because of the difficulty I have had in making up the accounts of the work and even now I am unable to clear them up entirely as it is impossible to tell at present how the materials prepared will turn out and some accounts still remain unsettled.

I have the honor to point out that chiefly owing to the late Mr. Fox's having to leave the District sick that this Bridge has not had the attention it should have had and that many circumstances have happened which have caused a much heavier expenditure than would have been incurred had there been an Officer in charge in whom Government

Government had confidence. The following brief history of the work will I think show this.

3 In 1874 there were heavy floods in the Douar the highest in Ontario rose to 5' 5" above the springing level of the Bridge and there were serious cracks in the northern arches. Mr. Sage on the 16th December 1874 forwarded an estimate amounting to \$33,000. This allowed for putting down 2 floors of aprons (1 on each side of the Bridge) 14 ft. in breadth with retaining walls of 5 ft. solid masonry or 9 ft. wells.

4 On the 13th January 1875 the Chief Engineer in Ottawa No. 52 declined to recommend the adoption of this estimate because he considered there was not sufficient information to justify so great an expenditure.

5 On the 12th of February Mr. Sage reported again on the Bridge. He having examined it, he found the old work was 3 ft. solid masonry or 5 ft. wells. He considered also that if the river Douar was embanked as it was proposed should be the case, that the waterway of the Bridge would be

insufficient.

insufficient. He further requested that the Circle Superintending Engineer should be sent down to examine the Bridge and urged that the matter should be decided as soon as possible.

6 Government in their order No. 719A dated 13th March 1875 directed that Captain Ross Thompson should be sent to advise the District Engineer regarding the Bridge.

7 I would remark that Mr. Sage left the District very sick on the 3rd March and Mr. J. E. Norris took charge of the District. Captain Ross Thompson was unable to carry out the duty assigned to him and Government in G.O. No. 1415A dated 21st May 1875 directed Major G. J. Smith to take up the duty. He did not however visit Oudaboe until July and his report is printed in G.O. No. 2198 dated 28th July. Government directed that the protective measures proposed by Major Smith should be carried out.

8 The protection measures were as follows:-

At a distance of 18 ft. above and below the Bridge 2 rows of sheet piling to be driven and a rough stone apron 2 ft. thick of latrite to be put down. The sheet piling to be 15 ft. deep.

9 It was found that piling 15 ft. ~~could~~ not be put down and 10 ft. piling was substituted for it.

10 This work was carried out, it has proved most costly much more so than Major Smith could have had any idea of when he proposed it. The cost has been over Rs 10 per ft run of course next year the piles may be removed but I fear the value of the wood (mango wood) will be found to be but small and that of the iron shoes and straps little or nothing. I therefore think we must not calculate on reducing the expenditure materially in this way.

11 I enclose a statement showing the expenditure on the different items and I must say that the work in consequence of having been so long in hand

hand has not I consider been done as ~~cheaply~~ as it might have been. 12. For the expenditure incurred had sanction been given in February for the retaining wall as proposed by Mr. Sage the Bridge could have had this permanent protection for a longer length than it has the temporary protection or in other words the money expended in a temporary protection of piles and rough stone for 270 ft run of the Bridge would have been sufficient to have put down a permanent retaining wall in front and rear with flooring for the same distance.

13. As Mr. Maffew the Range Officer was fully occupied in the works of his Range which had the heavy work of the Pannier Amicut in progress he was not put in charge of this work, but it was put in charge of Mr. Garrett a young Officer who only landed in the country in November 1874 and I think as might have been expected the management and arrangement of the work was not carried on

as judiciously as might have been
and there is no doubt the effect of the
work was not what it should have been.

14. With regard to the expenditure
on Bunds, Baling, Sundries and In-
-permanence I would remark that
work had been in progress from January
to September. that the Bunds found
-ations were laid open in February
for Mr. Sage's examination, again
in March and April for Captain
Thompson's expected arrival, and lastly
in July for Major Smith's arrival.
the cost of these items has been nearly
Rs 2700.

15. By Mr. Sage's order a con-
-ting was put up under the 5th arch
from north this was done so that
this arch might be removed by hand
and the 14 Northern arches blown up
by Gunpowder it was removed
in July after Major Smith's in-
-spection the cost of this was Rs 338.

16. A Buttress wall was built
against the 5th arch south pier at a
cost

cost of Rs 431. 10. 9. The parapet walls
were removed in March and temporary
ones rebuilt, after Major Smith's inspection
this cost Rs 141.

17. The cost of leveling and removing
sand from floors. Approx ~~Rs~~ has been
heavy namely Rs 310, this is in conse-
-quence of the floods in the river in
August and September constantly fill-
-ing up the work that had been done.

18. With regard to the piles considera-
-ble difficulty was experienced in pro-
-curing them and also in putting them
down. Mr. Norpor then in charge of
the District finally gave the work to
Nanniasamy Aduan an Overseer in
the District, who had sent his pa-
-pers in for pension and was and is
now waiting orders regarding them.

19. The rates for the work were I
must remark very high indeed no less
than Rs 12 1/2 for a 15 ft pile and Rs 10
for a 10 ft one completed with shoe and
strap, the charges for driving was Rs 1. 12. 0;
the Contractor has I have no doubt
made considerably by the work, he of
course.

course declares that he only undertook
the work at the request of Mr. Vorpor
and has lost by it.

20 I must however bring to notice
that it was not until July that
Mr. Vorpor received orders to do this
work that he considered rightly so that
it was necessary that it should be carried
out at once, that there was a great deal
of Cholera about and great difficulties in
getting coolies. Mr. Garrett and the Local
Fund Officers under him were unable
to get on with the work and Mr. Vorpor
I believe had a very high opinion of
Narayanasingh Naidu and considered him
almost the only man in the District
capable of carrying out the work quickly
and satisfactorily at the time.

21 A sum of Rs 676.7.10 has been
expended on 3 groyves which were put
up at Major Smith's suggestion, they
have acted well and have already im-
proved the river bed.

22 Rs 4448.14.2 has been spent
on the preparation of 3 Bridges and Churnam
I

I regret to say that the cost of the
Bridges prepared departmentally has
been very great. they are not first
class and have cost more than Rs 8
or 1000. With regard to the Churnam
I much fear there will when it is
measured out, prove not the full quantity
paid for.

23 It is necessary that it should
be decided soon what is to be done with
regard to this Bridge which in November
last was considered so unsafe that it
was closed for traffic. it was reopened
in July on Major Smith's recommenda-
tion but in September I found it
again closed. I had it reopened and
it has been so ever since.

24 Both Mr. Sage and Major Smith
considered that it is necessary to rebuild
the 5 Northern arches, I differ with
them both and see no reason to do so
at present, it may be necessary to do so
eventually, but I think probably they
will last for years. I know other arches

with worst cracks that have shown
for years.

16. 25. These arches have gone through all
last 8 months great trouble and I am
much surprised to find that the cracks
(as far as I can ascertain) have not in
any way increased and no new signs of
weakness have appeared. Mr. Sage to
examine the foundations lowered the
water 5 ft and exposed 2 ft of the top
of the walls. In April and again in
July the water was again lowered to
expose the foundations.

16. In August and September
2 rows of piles were driven at a distance
of 18 ft from cutwaters 10 ft deep. This
was sufficient to shake the Bridges
seriously and increase the cracks had
it been in a really dangerous state.

27. I consider therefore that if
the foundations are protected by
retaining walls in front and rear
with aprons that it will not be nec-
essary to remove these arches.

I would point out I think

it possible that hereafter we may have
to rebuild these arches, but I consider
most probably that we shall not
have to do so.

29. Should however the work some
years hence have to be done it can be
done then as cheaply as now as the retaining
walls proposed to be built will not
in any way interfere with work all the
would have to be done being to remove a
portion of the aprons and the floorings.

30. With regard to the retaining walls
Mr. Sage in December 1874 proposed
them to be 5 ft solid or 9 ft walls.

Major Smith in July proposed the
retaining walls should be 6 ft cylin-
ders 20 ft deep. I suppose he in-
tended the upper 5 ft (a depth at
which water can be kept down at for
a moderate cost) to be solid mason-
ry.

31. I must remark that I am not
aware of a single ancient Bridge or
other river work in Southern India
(except)

Railroad

(except exceptional bridges) which have retaining walls 20 ft. deep and I cannot consider it necessary to go to this expense or advisable to do so.

32. Many of our old works in Southern India have foundations that are now considered of less depth than originally most of them were designed to be 3 ft. solid on 6 ft. wells and although it is notorious that the foundations in many cases (I may say in most of the old works) are lost or thin, yet the works when properly looked after have stood successfully and this in many places where rough stone is not procurable.

33. I would propose that the retaining walls should be 5 ft. solid resting on square wells 6 ft. deep that they should have a protection of a rough stone abutment (laterite of a fair description is procurable at a cost of Rs 1.2.0 per cubic yard) 4 ft. in width and 2 ft. thick.

34. We have now 18 ft. beyond the present

present flooring 2 rows of piles 10 ft. deep the new retaining wall must be placed beyond and I would propose it should be 8 ft. distant from them.

35. I enclose a section of what I propose and if this is carried out I myself have no fear of the safety of Bridge, provided the apron is kept in fair order and the river kept from forming lateral currents and this it is necessary should be done in any case no matter what depth the retaining walls are taken to.

36. In the above I have not entered on the question as regards what is to be done should the Ponnai river be embanked and for this it is necessary to increase the waterway of the Bridge. I think that this question may be left for the present as it will probably be some time before it is settled and it does not for the present affect the necessity of securing the safety of the present Bridge which must be done in any case.

37. Should more waterway be required

required hereafter the present
Bridge must be lengthened.

38 I request early orders as re-
gards this Bridge in order that
the plans and estimates may be pre-
pared and sanction obtained for
the work so that it may be commenced
in January should the river permit
it.

39 With regard to the work done
there has been no formal sanction
but I intend laying it before the
local fund board for sanction and
it will then go through the ordinary
course.

I have the honor to be
Sir

Your most obedient servant

W. D. Maud Major R.E.

District Engineer

Statement showing the work done in temporary repairs to Panniar Bridge and cost of the same.

Description	Quantity	Cost		Rate	
		R	a p	per	R. a p.
Temporary bonds		8	32		46
Baling water		11	26		56
Ballance wall	158 yds	4	31	10 9	3 68
Grubbing and burning		3	38		83
Leveling & masonry work		3	10		41
Rough stone	778 yds	9	45		13 11
Gravel	30 ft by 20 ft by 6 ft 7 10 each	22	5		7 11
Pipes	540 ft	2	52	3 9	10 38
Perapet. wall	74 1/2 yds	11	41	5 9	1 44
Mudries		4	08		7 10
Superintendence		2	23		13 3
Total work		11	05	7	46
Materials					
Channam		6	02		15 9
Bricks		3	84		14 5
		4	44		14 2
Grand Total		15	50	5	14 6

Set to about 600 yds collected in hand.

50 ft 9 ft 10 ft piling 36 3 1/2

District Engg's Office, Sec 3
 And done 25 November 1875
 M. M. M. Major R.E.
 District Engineer.

1875 Nov 26/75 to 356.4-
 2/25/75 " " 403.4
 3/15 " " 583-584
 28/5/75 " " 797-798
 25/5/75 " " 610-611

To
 From
 The District Engineer
 South Arcot.
 P. M. 1875 20 ft
 SOUTH ARCOT D. P. M.
 No 7563

No. 115
 Enclosures 2

Reporting on the
 temporary repairs
 and masonry work
 done at Panniar
 Bridge at Mangalam
 regarding certain
 items under inspection
 to the same.

17.5.11

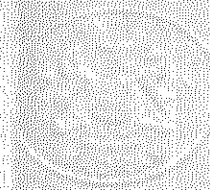
No 3423 2 Dec/75.

Mr. T. M. C. in C. is glad
to accept the opinion
expressed by Major Meade
that the reconstruction
of the Southern bridge
at Washington need
not, for the present at
least, be undertaken
until he requests that
Officers to submit his
detailed Plans and
Estimates of the pro-
posed work, which
he proposes, for con-
sideration in the naval
council, making as
his proposals, suc-
cessfully, successful,
if necessary - The
question of eventual
increase of waterway
will be left for later
consideration.

St. Louis

Full Dept

Decd - 10 - 12 - 75



10000

Consideration in letter
No 168 of 25 Novem-
ber 1895 from the
District Engineer
concerning the
Q. P. M.

10000
2563/75

10000

Looking to the fact
that The Bridge is at
the H^d. Q^r. of the Dis-
trict Engineer, and
of a Range Officer of
great experience, W.S.
The Govt. cannot but
consider that in reliev-
ing the latter Officer
from all charge of the
works, ~~save~~ placing
them nominally un-
der Mr. Cornwallt, an
Asst. Surg. ^{sent to the} ~~placed at~~
^{District} ~~the post~~ where
the practical duties
of the Dept., need prac-
tically nothing every-
thing sent to the hands
of Overseer or Contractors
Horrors are now provided.
Mr. Gorham took upon
himself ^{personally} the entire
responsibility for all
future work.

was, in principle, the
 right course to adopt
 but Mr. May would
 not appear to have al-
 lowed the Gov. to have
 put in any degree of
 the necessary experience
 which he must have
 gained of executive work
 in the South West Dis-
 trict. He is reported to
 have suffered excessive
 duties from the fact that
 he had been previously
 to assume for the District
 at a considerable price
 and to have paid for
 a larger quantity of
 character than will be
 materially supplied from
 the local sources. Mr. May
 has failed to give satis-
 faction in South West
 District. He is reported
 to have been in the
 District for a long
 time and to have
 been in the District
 for a long time.

...ing on...
...the...
...been...
...may...
...lead to his...
...being...
...with...

20-21

I believe that Mr. Norpor has
already been ^{severely} censured for
his administration of the...
...and been removed
from that district. If I am
correct in this supposition I
think we may leave him
alone till we see how he
is behaving in his present charge.

Men don't work heartily
if repeatedly threatened.

A map has apparently
been made throughout in

this repair work. The experienced
officer Mr. ^{Stanger} ~~Stanger~~ was out of health
and resigned - then was delay

Officer to advise and Mr. Norpor
was short-handed - & not up to
what is acknowledged to be
a difficult bit of work. - The

best thing we can now
do is to get the bridge
repaired as soon as possible.

11/11

20/10



Bill of 1875, Public Works.

G. L. Grant

20/10 342

20-21

Private notes to the
Bureau of Engineering
with list of names
of Engineers to submit for
sanction the project, based
estimated in the
which he proposed