

(1) Number of pages 12

(2) Date of repair 8.5.68

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE.

Government of Madras.

Public works DEPARTMENT.

G.O. No. 1370

Press
~~Mis.~~

46-47

Dated 2. 5

1868.

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
2nd May 1868.*

No. 46. Read the following letter from the Acting Superintending Engineer,
7th Division, to the Secretary to Government, Department Public Works,
dated Ootacamund, 30th March 1868, No 211 :—

1 With reference to paragraph 2 of G. O., No. 2,993, dated 26th September,
1867, I have the honor to submit a plan
1 Plan and 1 Estimate, No. 39, Rupees 18,800. and estimate for Rupees 18,800, for
reconstructing the Coothaangady bridge, substituting a trussed wooden platform for
the ruined arches.

2. The bridge is situated on the high road between Calicut and Palghaut, at a
distance of three-fourths of a mile from the Cantonment of Malleapooram. The arches
were turned and centrings struck in 1865-66, and the bridge was completed in 1866-67
at a cost of Rupees 22,787 on an estimate of Rupees 23,000, sanctioned in G. O.,
No. 1,755, of 4th June 1866. The bridge consisted of four bays of 41 feet 6 inches
arches segmental, the materials being mixed brick and laterite in mortar, the piers
entirely of laterite, faced up-stream to the height of the springings with cut granite.
The bridge was destroyed on the 21st July last, the Range Officer, Lieutenant Man-
waring, R. E., reporting that some days previous to its destruction, the water rose four
feet above the springings of the arches, but when the bridge collapsed, but little water
was in the river. I examined the ruins of this bridge on the 24th of January.
The left abutment built upon rock was intact, the right abutment built upon hard
soil cracked and apparently sunk a little. Having been exposed to heavy freshes
at a terrific velocity in the river during the whole of the monsoon, the piers were
a heap of rubbish, averaging from 4 to 6 feet in height. The materials, as far as
bricks and laterite are concerned, appeared to me to be very good, but the mortar
had set badly, the only sand obtainable being very poor stuff. To my mind the
cause of the accident was in consequence of the sinking of the third pier, which was
not built upon rock. The earth below the foundations having become saturated
thus, caused the settlement and final collapse of the arches.

3. So far as I could judge from the work remaining of the bridge, it must have
been nicely and carefully finished, and Captain Bailey, who built the bridge, reports that
all the materials used were of the best quality, in which opinion he is fully borne out
as the arches stood upwards of a twelve month, and the piers and abutments between
two and three years. Colonel Walker visited this work during its construction, and
expresses himself as having been perfectly satisfied with the materials used and the
general workmanship of the work.

No. 47. ORDER THEREON, 2nd May 1868, No. 1,370.

CIVIL WORKS, No. 6.

1. In their Proceedings of the 18th
August 1859, No. 1,975, the Govern-
ment sanctioned an estimate amount-
ing to Rupees 88,830 for completing and bridging the line of road between Calicut
and Palghaut in the Malabar District. That estimate included provision to the
extent of Rupees 20,255 for a bridge at Coothaangaddy close to Malleapooram, and
this amount was subsequently increased to Rupees 23,000. The bridge was com-
pleted in 1866-67 at a total cost of Rupees 22,787, but on the 21st July last was

Cut Granite. - The Bridge was destroyed.

*Proceedings of the Madras Government, Public Works Department,
2nd May 1868.*

destroyed owing, as is alleged, to the partial failure of the right abutment and the settlement of the third pier, caused, it is supposed, by the unusually high freshes which passed down the river some days previously. The Acting Superintending Engineer states that the bridge was carefully finished, and that, with the exception of the sand which was not obtainable of good quality, the materials employed were of the best description. It appears, moreover, that the bridge was inspected while in progress by Colonel Walker, who was satisfied both with the materials and workmanship.

2. Major Farewell now submits an estimate of Rupees 18,800 for the reconstruction of the bridge, and proposes to substitute a trussed wooden platform for the ruined arches.

3. The Government cannot but think that the failure of this bridge is very discreditable to the Officer under whose supervision it was constructed. It is not explained how, if wells were sunk under the foundations of the abutment, and under the piers which are not on rock, the sinking mentioned by Lieutenant Manwaring could have taken place; and instead of attributing the collapse of the bridge to the cause assigned for it by that officer, the Government are more disposed to believe that the failure of the bridge is due, first, to faultiness of the design, which provided for segmental arches of 41 feet 6 inches span being supported on weak piers with an average thickness of only 9 feet, though 24 feet high, and, secondly, to the evidently very inferior quality of the mortar employed in the masonry.

4. As the bridge is on an important line of communication the Government have no alternative but to sanction its reconstruction on the design now submitted by Major Farewell, of a light timber trussed platform, supported upon piers of the same dimensions at base as those which have fallen, but carried up to a height of 40 feet. The Superintending Engineer will take special care that the mortar employed in building the piers shall be of the best quality, and that no unsuitable stone is used.

(True Extract.)

(Signed) CHARLES A. ORR, Colonel, R. E.,
Secretary to Government

To the Superintending Engineer, 7th Division.
.. Accountant General.
.. Controller of Public Works Accounts.

Exd. S. T. Augustin.

N^o 211

Supp. Engineer's Office 7th Div.
Cottaramund 30th March 1868.

From

Major W. Farewell

Acting Supp. Engineer 7th Div.

To

Colonel C. A. Orr R.E.

Secretary to Government, D.P.W., Madras

Sir,

With reference to para 2 of G.O. No. 2993 dated 26th September 1867, I have the honor to submit a plan and estimate for Rupees

Enclosure: 2.
1. Plan and estimate No. 39
Rs. 18,800. - Bridge substituting a Trussed wooden platform for the ruined arches.

2. The Bridge is situated on the High road between Calicut and Palghat at a distance of $\frac{3}{4}$ of a mile from the Cantonment of Malloppuram. The arches were turned and Centring struck in 1865-66, and the Bridge was completed in 1866-67 at a cost of Rs. 22,787 on an estimate of Rs. 23,000 sanctioned in G.O. No. 1755 of 11th June 1866. The Bridge consisted of 4 Bays of 41' 6" arches segmental, the materials being mixed Brick and Lateral in Mortar, the Piers entirely of Lateral faced up to the height of the springings with Cut Granite. - The Bridge was destroyed on the

On the 21st July last the Range Officer Smith, Manawaring A.C. reporting that some days previous to its destruction the water rose four feet above the springing of the arches but when the Bridge collapsed but little water was in the River. I examined the ruin of this Bridge on the 24th of January. The left abutment built upon rock was intact, the right abutment built on hard soil cracked and apparently sunk a little. Having been exposed to heavy freshes at a terrific velocity in the River during the whole of the season, the piers were a heap of rubbish averaging from 4 to 6 feet in height. The materials as far as Bricks and Limericks are concerned appeared to me to be very good, but the mortar had set badly, the only sand obtainable being very poor stuff. To my mind the cause of the accident was in consequence of the sinking of the third pier which was not built upon rock. The earth below the foundations having become saturated and thus caused the settlement and final collapse of the arches.

3. So far as I could judge from the work remaining of the Bridge it must have been nicely and carefully finished and Captain Bailey who built the Bridge reports that all the materials used were of the best quality in which opinion he is fully borne out as the

arches stood upwards of a twelvemonth and the piers and abutments between two and three years. Colonel Walker visited this work during its construction and expressed himself as having been perfectly satisfied with the materials used and the general workmanship of the work.

I have the honor to be

Sir

Your most Obedient Servant

Whitworth Esq.
Supt. Engineering

at

e. 2017 April 1868 CA-245

Chell

10370 - 22 May 1868

Ordered 3^d April 1868
for expenditure of Rs. 18,300
for expenditure of the
road between Talicut and
Palghat in the Malabar
District. That Estimate
included provision to the
extent of Rs. 20,255 for
a bridge at Cothangad
very close to Mallespore
and this amount was
subsequently increased to
Rs. 23,000 - The bridge
was completed in 1866/67
at a total cost of Rs.
22,787, but on the 21st July

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1370
N. 1370

Public Works Department.

PROCEEDINGS of the MADRAS GOVERNMENT.

Under date the 2^d May 1868

Read the following

From the Supy. Engineer

(Here enter No. 211 dated 3^d April 1868)

In their Proceedings of the 18 August 1859, No. 1975, the Government sanctioned an Estimate amounting to Rs. 88,830 for completing and bridging the line of road between Talicut and Palghat in the Malabar District. That Estimate included provision to the extent of Rs. 20,255 for a bridge at Cothangad very close to Mallespore and this amount was subsequently increased to Rs. 23,000 - The bridge was completed in 1866/67 at a total cost of Rs. 22,787, but on the 21st July

W. H. P.

last was destroyed
as is alleged,
owing, to the partial failure
of the right abutment
and the settlement of the
third pier caused by the
unusually high freshes
which passed down the
river some days previously.
The Acting Supt. Engineer
states that the bridge
was "carefully" finished,
and that, with the ex-
ception of the sand, which
was not obtainable of
good quality, the materials
employed were of the best
description. It appears
moreover, that the bridge
was inspected while in
progress by Col. Walker,
who was satisfied both
with the materials and
with the workmanship.
May

Is this hammering?
surely in hammering
Engineer is young
to blame.

ty A.

2. Major Farewell
now submits an Estimate
of Rs. 18,800 for the re-
construction of the bridge
and proposes to substitute
a trussed wooden plat-
form for the ruined arch.
3. The Government can-
not but think that the
failure of this bridge is
very discreditable to the
Officer under whose su-
pervision it was con-
structed. It is not ex-
plained how, if wells
were sunk under the
foundations of the abut-
ment and under the
piers which are not on
rock, the sinking men-
tioned by Lieutenant
Hamwaring could have
taken place and in-
stead of attributing
the collapse of the
bridge

bridge to the cause
assigned for it by
that Officer the Govt.
Government are more
disposed to believe that
the failure of the bridge
is due, first, to fault-
liness of the design,
which provided for
segmental arches of
41' 6" span being
supported on weak piers
with an average thickness
of only 9 feet, though
24 feet high, and
secondly, to the want of
very inferior quality
of the mortar employed
in the masonry.

As

A As the bridge is
on an important line
of communication, the
Government have no
alternative but to sac-
rifice its reconstruction
on the design now sub-
mitted by Major
Farwell, of a light timber
truss platform supported
upon piers of the same
dimensions at base as
those which have fallen,
but carried up to a height
of 40 feet. The Super-
intending Engineer will take special
care that the mortar em-
ployed in building the
piers shall be of the best
quality, and that no un-
suitable stone is used.

S. Eng 7.50 ✓
3 Northland ✓
4 Doubtless ✓

Decr 4/5/83

W. H.

Sub: Works 1868 Departmental

Pro: of Govt for May

No 1371

Pro: of the Madras Govt

Dt 2nd May 1868

Sanctioning the
estimate of Rs. 18,800 for the
re-construction of the Bridges
at Coothamangaddy on the line
of road between Calicut and
Pullicherry in the Malabar
(District).

No. 46-49

24 April 1868 Or. 2415