(1) பக்கங்களின் எண்ணிக்கை 90
(2) புதுக்கித் திருப்பிய நாள் 12/89
(3) ஆதாரங்குறிப்பவர் சுருக்கொப்பம்

# தமிழ்நாடு ஆவணக் காப்பகம்.

தமிழ்நாடு அரசு

P.W.D துறை

அரசாணை எண்.
மு. கோப்புத் தாள் எண். 135

அச்சகம்
பலவகை

நாள் : 16-1-1891 ~~198~~ .

டிக்கவோ கண்டபடி கையாளவோ கூடாது

45 Sheets

வண கா-1—18,006—15-6-87.

135/1

GOVERNMENT OF MADRAS.

# PUBLIC WORKS DEPARTMENT.

## Buildings and Roads.
## Civil Works.

READ—the following papers :—

From the Superintending Engineer, VI Circle, dated 17th April 1889, No. 43 M.D.
" " " " " 19th June 1890, " 242 M.D.
" " " " " 1st September 1890, No. 505 M.D.
Endorsement by the Chief Engineer for Irrigation, dated 4th September 1890, No. 22 E.W.

From the Superintending Engineer, VI Circle, dated Trichinopoly, 9th October 1890, No. 655 M.D.

ABSTRACT.—Requesting that provision may be made in the ensuing year's budget for the two bridges over the Suruliyár at Virapandi and Uttamapalaiyam.

From Lieut.-Colonel A. C. SMITH, R.E., Superintending Engineer, VI Circle, to the Chief Engineer, Public Works Department, dated Trichinopoly, 13th October 1890, No. 672 M.D.

With reference to your memorandum No. 3828 C. of the 20th September 1890, and in continuation of my No. 655 M.D. of the 9th instant, I have the honor to resubmit the plans and the estimates for masonry bridges over the Suruliyár river :—

| | RS. |
|---|---|
| (1) At Virapandi, estimate ... ... ... ... ... ... | 31,275 |
| (2) At Uttamapalaiyam, estimate ... ... ... ... ... | 36,500 |

2. Copy of letter No. 444 S.E. of the 8th instant from Mr. Hughes, Executive Engineer, Madura division, which accompanied the above plans and estimates, is also forwarded herewith. In this letter allusion is made to his former letter, No. 321 S.E. of the 22nd August 1890; extract from this, containing information on the point of flood level at Virapandi, &c., was forwarded with my No. 505 M.D. of the 1st September 1890. I have now only to recommend early sanction to the estimates.

3. The entry "vitrified bricks" originally made in the estimates has been now altered into broken stone with reference to para. 2 of Mr. Hughes' letter.

### ENCLOSURE.

From the Executive Engineer, Madura Division, to the Superintending Engineer, VI Circle, dated 8th October 1890, No. 444 S.E.

With reference to your endorsement, No. 594 M.D., dated 24th September 1890, I have the honor to resubmit the plans and estimates for arched bridges over the Suruliyár at Virapandi and Uttamapalaiyam. I do not think the plans need be altered. The foundations of both bridges will, no doubt, have to be laid at levels somewhat different from what is shown on the plans, especially at Uttamapalaiyam, where the quality of the material to be built on is very imperfectly known. In my No. 321 S.E., dated 22nd August 1890, I described the manner of arriving at the probable flood level at Virapandi. I think, as, on the most unfavorable assumption, that is with the river above the anicut embanked, the flood level will be only a foot above the springing of arches, the work could be quite safe. As to the question of having three spans instead of four at Uttamapalaiyam, I think four preferable. The river sets against the left bank and it would be inadvisable to have the bridge abutment built on the present margin of the river bed.

2. I notice that in your office the estimate items for concrete in foundations have been altered to concrete "with vitrified bricks." I do not know how the mistake occurred. There will be no vitrified bricks available at the time the foundations are being put in. The description of the work should be concrete broken stone in surki mortar.

3. With regard to rates, I have thought it prudent to make them pretty high, as labour in the Cumbum valley usually, owing to higher rates and shorter working hours, costs about 50 per cent. more than in other parts of the district. Stone for the Virapandi bridge will have to be brought from a quarry in the Bodináyakanúr zemindari about 6 miles from the works, or from a Government quarry about 8 miles distant. I do not know whether it can be quarried by burning, that method of quarrying not having been tried as yet at the places indicated, and I have therefore allowed for the superstructure a rate suitable for split stone. If the stone can be burnt, the rates will be largely reduced. For the Uttamapalaiyam bridge it is proposed to use blasted stone roughly squared for the foundation. For the superstructure burnt or wedged stone will have to be brought from a hill about 6 miles away. The rate for burnt stone will be higher than in Dindigul or Madura, as Wodders from those taluks will have to be employed. The cheapest material to build with would of course be brick, but the brick earth available is far from good, being more or less mixed with limestone, and stone is far preferable and more endurable. The arches will have to be built with care and with carefully-selected material. I do not think the rate can be safely reduced.

---

### *Memorandum by the Chief Engineer, Public Works Department.*

In the note by His Excellency the Governor on his tour in the western and southern districts in 1887, the request of the Municipal Council of Periyakulam that the road leading to the site of the Periyár project might be bridged at the expense of Provincial funds was noticed, and in G.O., No. 188 W., of 17th January 1888, the Superintending Engineer, VI Circle, was directed to report on the nature and cost of the proposed works.

2. In accordance with these instructions, estimates for bridges over the two crossings of the Suruli at Virapandi and Uttamapalaiyam were submitted by the Superintending Engineer in April 1889.

3. These estimates were for masonry bridges and were returned by the Chief Engineer with a request that revised designs for iron bridges might be prepared, as it was supposed that the cost of the latter would be less than that of the masonry bridges.

4. The revised estimates were submitted in June 1890 and it was found that they amounted to almost exactly the same sums as those for masonry bridges and would probably have cost rather more in actual execution; in respect of appearance, durability and cost of repairs the advantage is all in favor of the masonry bridge and the original designs were therefore called for, and, with certain alterations, which have been made in this office, are recommended for adoption.

5. The question of the incidence of the cost of these works has never been decided; it was suggested by the Madura District Board that their cost should be met entirely from Provincial funds, on the ground that their construction was rendered necessary by the execution of the works for the diversion of the Periyár, the waters of which would flow down the Suruli.

6. In G.O. (Local and Municipal), No. 2254 L., Mis., dated 30th November 1888, it was decided that further information as to the effect of the Periyár waters on Suruli was required before the point in question could be decided, and a report was then called for from the Superintending Engineer, Periyár project.

7. That officer's reply (No. 133 P. R., dated 26th January 1889) showed that the effect of the Periyár water was much less than had been supposed and that no contribution towards the cost of the works could be demanded on this account.

8. This letter, with a note by the Chief Engineer for Irrigation, concurring in the views expressed therein, was transferred to the Local and Municipal Department with endorsement No. 898 C. of 22nd February 1889 and it is not known that any subsequent orders have been passed thereon.

135/1A

9. The undersigned is of opinion that no ground has been shown for the debit of any portion of the charge to the Periyár project, but it is thought that a considerable portion, if not the whole, of the cost might be borne by Provincial funds on the ground that the road forms an important link in the line of communication between Madura and Travancore and that its value is greatly reduced by the existence of the unbridged streams which it now crosses. The road from Cumbum to the foot of the Gúdalúr ghât and the ghât itself were constructed from Provincial funds.

10. In addition to the two crossings of the Suruli, the road crosses the Pámbar and Varáhanadi at Periyakulam and the Teniaur ten miles further south; all these streams are unbridged and the two latter at all events cause an even greater interruption to the traffic than the Suruli itself.

11. It would probably be beyond the power of the District Board to construct all five bridges within any reasonable period, but it is thought that, if the Government undertake the construction of the two bridges on the Suruli, the Board might reasonably be expected to undertake the remainder and that they should be asked to promise the construction of at least the bridges on the Varáhanadi and Teniaur at an early date as a condition of the execution of the Suruli bridges by Government.

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

---

### 4683 C., Public Works.

Referred to the Local and Municipal Department in view to the opinion of the District Board on the Chief Engineer's proposal being obtained.

2. No regular estimates have been made of the cost of the bridges on the Pámbar, Varáhanadi and Teniaur. It is, however, believed that they will not exceed the following sums:—

| | RS. |
|---|---|
| Pámbar ... ... ... ... ... ... ... | 10,000 |
| Varáhanadi ... ... ... ... ... ... ... | 20,000 |
| Teniaur ... ... ... ... ... ... ... | 25,000 |

The Pámbar is a small stream and the construction of a bridge across it is of much less importance than in the other cases.

The Teniaur is smaller than the Suruliyár, and the site is very favorable for the construction of a bridge.

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

15th November 1890.

---

G.O., dated 10th January 1891, Mis. No. 41 L., Local and Municipal.

Memorandum from the Public Works Department, dated 15th November 1890, No. 4683 C.

Abstract.—Referring certain papers connected with the construction of certain bridges and requesting that the opinion of the Madura District Board may be obtained on the Chief Engineer's proposal.

---

From the President, District Board, Madura, dated 20th December 1890, No. 279.

With reference to Government endorsement, No. 1027, dated 26th November 1890, forwarding, for the opinion of the District Board, certain papers connected with a proposal in the Public Works Department to construct certain bridges on the road from Periyakulam to Cumbum, I have the honor to submit, herewith, a copy of their resolution, No. 167, dated 15th December 1890, on the subject.

2. The papers in original received with the endorsement under reference are herewith returned as directed.

2

ENCLOSURE.

PROCEEDINGS of the District Board, Madura, passed at their special meeting held on Monday the 15th December 1890.

*Present:*

* * * * *

Read endorsement of the Government, Local and Municipal Department, Madras, No. 1027, dated 26th November 1890, referring, for early report, certain papers connected with the construction of certain bridges on the road from Periyakulam to Cumbum, and requesting to communicate the opinion of the District Board on the Chief Engineer's proposal to the effect that, in case the Government undertake the construction of the bridges on the two crossings of the Suruliyár at Virapandi and Uttamapalaiyam, the Board might reasonably be expected to undertake the construction of at least two of the three others, viz., Pámbar, Varáhanadi and Teniaur.

---

Resolution No. 167.

The Board are of opinion that they can make the Theni bridge as soon as practicable and they will undertake the other bridges as soon as their funds allow.

---

*Order*—dated 10th January 1891, Mis. No. 41 L., Local and Municipal.

The President's letter, with the District Board's resolution referred to therein, will be communicated to the Public Works Department.

(True Extract.)

(Signed) N. S. BRODIE,
Ag. Assistant Secretary.

---

ORDER—dated 16th January 1891, No. 135 W., Public Works.

The estimates, amounting to Rs. 31,900 and Rs. 36,840, respectively, for the construction of masonry bridges over the Suruliyár river at Virapandi and Uttamapalaiyam on the road from Periyakulam to Cumbum, are sanctioned.

2. An allotment of Rs. 18,000 will be provided for each bridge in the Provincial budget estimate for 1891-92.

3. This sanction has been registered as Provincial Nos. 94 W. and 95 W. of 1890-91 and classified as Communications, Original Works.

(True Extract.)

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

To the Superintending Engineer, VI Circle, with enclosures.
„ Examiner, Public Works Accounts.
„ Local and Municipal Department.

Exd. A. D. Xavier.
Spare Copies

135
1B

3

BUILDINGS AND ROADS.
CIVIL WORKS.

# Govt. of {1891} Madras.

## PUBLIC WORKS.

*Dated January, 16th.*

*Recd.* *Encl.*

**G.O., 16th Jan. 1891, No. 135 W.**

JANUARY.

### Bridges over the Suruliyar river

Estimates amounting to Rs. 31,900 and Rs. 36,840 for the construction of — at Virapandi and Uttamapalaiyam on the road from Periyakulam to Cumbum, sanctioned.

---

P.W.D.

Memo. to Go 135/W
with estimates
for Suruli Bridges

8

~~26~~

wings of the Suruli,

~~27~~

Mem. of E. W.

135

In the note of C.E.
the [illegible] on [illegible]
tion in the Western
& Southern Districts
for 1887 the report of
the Municipal Council
of [illegible] that the
road leading to the
site of the Proposed
Project might be
[illegible] at the
expense of Provincial
Funds was noticed,
and in G.O. No 10041
of 17 Jany 1888 the
[illegible] to the [illegible] was
directed to report on
the nature and cost
of the proposed works –

In accordance with
these instructions estimates
[illegible] on the [illegible]
[illegible] of these funds,

at Vengurla and ~~Ratnagiri~~ but amplifications were submitted by the Exec. Engr in April 1889.

These estimates were for masonry bridges and were returned by the Chief Engineer with a request that revised designs for iron bridges might be prepared, as it was supposed that the cost of the latter would be less than that of the masonry bridges.

The revised estimates were submitted in June 1890, and it was found that they amounted to almost exactly the same sum as those for the masonry brid

ld probably have cost rather more in actual execution; in every other respect of the comparison of durability and cost of repairs, the advantage is all in favour of the masonry bridges, and the original designs are therefore called for, and with certain alterations which have been made in this Office, are recommended for adoption —

The question of the incidence of the cost of these works has never been decided it was suggested by the Ratnagiri District Board, that this cost should be met ~~contributed~~ entirely, from Provincial and of the fund

9. W. D.

that these construction
was sanctioned [illegible],
of the execution of the
works for the diversion
of the Ping in the waters
of which would flow
down the [illegible] -

In G.O. (Local & Municipal) No 2254 L of 30th Nov. 1888 it was decided that further information as the effect of the Ping water upon the [illegible] was required before the point in question could be decided and a report was then called for from the Supdt. Engr. Ping Project -

Supdt. Engr's report (No 1338K of 26th Jan 1889) resulted that the effect of the Ping on water was much less than had been supposed, and that no con

butions towards
the works cost
only of the
be dec- -ided on this
account -

135/4

This letter with a note of the C. E. for I. ~~expressing~~ concurring in the views expressed therein was transmitted to the L. S. G. D. with endorsement No 898 C of 22-3-89 and it is not known that any subsequent orders have been passed thereon -

The undersigned is of opinion that no ground has been shown for the debit of any portion of the charge of the Ping Project, but it is thought that a considerable portion if not the whole, of the cost might be borne by Provincial Funds, or

BUILDINGS AND RO

and the
road forms an important
link in the direct communication
between Kandy and
Trincomalee, and that
its value is ~~very~~ greatly
reduced by the continuance
of the unbridged streams
which it now crosses -
The ~~[illegible] ghat and~~
~~the~~ road from Matale
to the foot of the
[illegible] ghat and
the ghat itself was
constructed from
Provincial Funds -

In addition to the
two crossings of the
~~[illegible]~~ the road
crosses the Pamban
and Yan Oya bridge
at Pasarawelana, and
the Tennian ten
miles further south, all
these streams

bridged and the two
latter at all events
cause an even greater
interruption to the
traffic than the [illegible]
itself -

It would probably be
beyond the power of
the District Board
to ~~build~~ construct all
five bridges within
any reasonable period,
but it is thought ~~that~~
if the Government undertake
the construction of the
two bridges on the [illegible]
the Board might
reasonably be expected
to undertake the
remainder, and that they
~~execution~~ should be
asked to promise the
construction of at least the
bridges on the Yan Oya
[illegible] and Tennian at

G.W.D.

an early date as a condition of the execution of the Jumli bridges by government -

S. E.

---

mates to be checked in the usual way - 7/1

The general 135/6 arrangement of the designs is approved but in the case of the [illegible] bridge the retaining walls must be placed at the ends of the abutments and the space between them floored, instead of as shown -

In the [illegible] bridge the ~~piers~~ estimate & plan need better allow for taking the masonry of all the piers down to the level of 985.77 and two feet of concrete below that - It is of no use certain that the position of the native town exactly -

S

2/4/10

I will write the note to go with the plans myself -

---

Note

With reference to the D.M's remarks on the note regarding the pucca bridges the undersigned has to state that no regular estimates have been made of the cost of the bridges on the Pucka, Vangha Nala and Teesta -

It is however believed that they will not exceed the following sums

Pucka - - - 6,000
Vangha Nala - - 20,000
Teesta - - 25,000 -

The Pucka is a small stream, and the construction of a bridge across it is of much less importance than in the other cases -

The Teesta is smaller than the Nala,

and the site is very favourable for the construction of a bridge.

I propose to 135 transfer the papers to the L. & W. Dep. with a view to the opening of the District Road on the C.E's proposals being started, and to intimate that the cost of the bridges is estimated approx. instead of the sum noted above -

S 6.11

W

3/p

---

(34)

9722

135/8

G.W.D.

Dw

This letter must apparently stand over until receipt of the information called for by W in memo No 4076C of 10-10-90.

Cs
14-10-90

Yes
M.C.S.
14 10 90

S.O.
14-10-90

BUILDINGS AND

## Memo by the Chief Engr. P.W.D

In the note by H.E. the Governor on his tour in the Western and Southern Districts in 1887 the request of the Municipal Council of Periyakulam that the road leading to the site of the Periyar Project might be bridged at the expense of Provincial Funds was noticed; and in G.O. No. 188W of 17th January 1888 the Supdg. Engineer II Circle was directed to report on the nature and cost of the proposed works.

2. In accordance with these instructions, estimates for bridges over the two crossings of the Suruli, at Veerapandi and Uttamapalayam

were

were submitted by the Supdg. Engineer in April 1889.

3. These estimates were for masonry bridges and were returned by the Chief Engineer with a request that revised designs for iron bridges might be prepared, as it was supposed that the cost of the latter would be less than that of the masonry bridges.

4. The revised estimates were submitted in June 1890, and it was found that they amounted to almost exactly the same sums s those for the masonry bridges and would probably have cost rather more in actual execution; in respect of

appearance

appearance, durability and cost of repairs the advantage is all in favor of the masonry bridge, and the original designs were therefore called for, and with certain alterations which have been made in this Office, are recommended for adoption.

5. The question of the incidence of the cost of these works has never been decided; it was suggested by the Madura District Board, that their cost should be met entirely from Provincial Funds, on the ground that their construction was rendered necessary by the execution of the works for the diversion

of the Periyar, the waters of which would flow down the Suruli.

6. In G.O. (Local and Municipal) No. 2254 M (Mis) of 30 Novr 1888 it was decided that further information as to the effect of the Periyar waters upon Suruli was required before the point in question could be decided, and a report was then called for from the Supdg. Engr. Periyar Project.

7. That Officer's reply (No. 133 P.R. of 26 Jany '89) showed that the effect of the Periyar water was much less than had been supposed, and that no contribution towards the cost of the works could be demanded on this account.

This

8. This letter with a note by the Chief Engineer for Irrigation concurring in the views expressed therein was transferred to the Local & Munl. Department with endorsement No. 898C of 22d February 1889, and it is not known that any subsequent orders have been passed thereon.

G.O. 827 L.M.
11-4-89

9. The undersigned is of opinion that no ground has been shewn for the debit of any portion of the charge to the Periyar Project, but it is thought that a considerable portion, if not the whole of the cost might be borne by Provincial Funds

~~P9~~ 20

on the ground that the road forms an important link in the line of communication between Madura and Travancore, and that its value is greatly reduced by the existence of the unbridged streams which it now crosses. The road from Cumbum to the foot of the Gudalur Ghât and the ghât itself were constructed from Provincial Funds.

10. In addition to the two crossings of the Suruli the road crosses the Pambar and Varagha Nadi at Periyakulam, and the Theniyar two miles further south; all these streams are unbridged and the two latter at all events cause an even greater interruption to the traffic

than the Suruli itself.

11. It would probably be beyond the power of the District Board to construct all five bridges within any reasonable period, but it is thought that if the Govt: undertake the construction of the two bridges on the Suruli the Board might reasonably be expected to undertake the remainder and that they should be asked to promise the construction of at least the bridges on the Varagha Nadi and Theniyar at an early date as a condition of the execution of the Suruli bridges by Government.

J. Pennycuick
Col. R.E.
Chief Engineer P.W.D.

28.10.90

No. 3211 C d/31.7.90
" 2579 C d/28.5.89
" 188 W d/17.6.88. Orig
" 3403 C d/26.7.89
" 2929 C d/5.7.90

2/4633

2/51552.

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## Note

135/13

With reference to the Honble Members remarks on the note regarding the Suruli bridges the undersigned has the honor to state that no regular estimates have been made of the Cost of the bridges on the Pambar, Varagha Nadi and Theniyar.

It is however believed that they will not exceed the following sums

| | |
|---|---|
| Pambar | 10,000 |
| Varagha Nadi | 20,000 |
| Theniyar | 25,000 |

34

The Pambar is a small stream, and the construction of a bridge acroſs it is of much less importance than in the other cases.

The Thenigar is smaller than the Suruli; and the site is very favorable for the construction of a bridge.

It is proposed to transfer the papers to the Local and Municipal Department with a view to the opinion of the District Board on the Chief Engineer's proposals being obtained, and to intimate that the cost of the bridges is estimated approximately at the sums named above.

W.

Note

approved
JH
11/11/90

A.m. 6.XI.90
R 13.XI.90

---

P. W. DEPARTMENT.

~~135~~ 135
14

READ the following :—

From the S. E. VI Circle No 505 M. D. d 1-9-90
" " —— do —— . 672 M. D d 13.10.90.
" " Supdg Engr Periyar Project No 1809 P.R. d 15.10.90
(with papers enclosed)
Memo. by the Chief Engr P. W. Dept. d 28.10.90.

FOR ORDERS.

W

What are the 3 bridges over the Pambar, the Varaha nadi & the Thenigar likely to cost. It is proposed to ask the L. F. Bd to undertake these 3 bridges in return for Govt building 2 over the Suruliar. The approximate cost of building the 3 should be commd along with the C. E.'s letter to the Madura Dis. Bd. if no regular estimates exist. I doubt if any of these bridges can be built for less than 40000 lbs.

JHG

4/11/20

The L^c Bd of Wks asked that they have to say to Col. Percy's [illegible] proposals.

JHG

135/15

36

FOR ORDERS.

8450
9,845
9,931

HW. 29.X.90
R.5.XI

**Public Works Department.**

Current No. 9845 135/16

Letter No. 642 M.D.

Dated 13th October 1890

From the Supg: Engr. VI Circle

NOTE OF REMARKS.

The plans & Estimates for bridging the Suruli river with masonry bridges at Uttamapalliam and Veerapandy, the latter amounting to Rs 36,500 & Rs 31,275 respectively, have been altered as directed by the Chief Engineer i.e. the retaining walls of the Uttamapalliam bridge have been placed on a line with the ends of the cutwaters & the width of the flooring increased. The masonry of all the piers of the Veerapandy bridge has been tak down to the level 9 and 2 ft of concre allowed below th level. The altera

27

135W

have been made in pencil and will be inked if approved.

The Estimates stand as follows

Uttamapolliam

Original Estimate — Rs 36,500
Revised — do — " 36,840
Excess Rs — 340

Veerapandy

Original Estimate Rs 31,275
Revised — do — " 31,900
Excess Rs — 625

The plans & Estimates for these bridges have been reviewed in a previous + note put up with C No 3734 the outer case of which bears Memo No 2519C d/28th May/89.

Cmp
27.10.90

+ The rates in the above note have been altered in pencil in accordance with the rates given in the schedule for 1889-90

The rates should not be reduced; the S.E. has satisfied himself that they are not excessive, and he must be the final judge of such matters — we cannot overrule him on this point — Schedule rates are worthless in a case of this kind —

S

P.W. C No 5922

J.W.

135
17

These papers regarding the Talavasal bridge were received from Coty on requisition from this office, they however do not refer to your calculations for the ironwork of the bridge, but as they contain herewith the designs for the Talavasal bridge as proposed by Sir A Rendel, it may be well to dispose of the Ests. for the Veerapandy and Uttamapaliam bridges which have been lying over for some days, instead of waiting for the plan called for in this office No 2929C d/5th July 1890.

The difference between the design submitted for sanction & Sir A. Rendel's sketch appears to be the omission of the cross ties between girders in the former & the addition of curbs which although omitted in the latter are referred to in Sir A. Rendel's report as being necessary.

Cmp
11.7.90

lic Works Department.

135W

have been made in

~~[illegible]~~ 28

RK

I think this is the file I was asked for last week in connection with the Talavadi bridge file and [illegible] [illegible] I found it in going through the [illegible] Report files -

Many [illegible] small [illegible] [illegible] as [illegible] office [illegible] [illegible] file

Ce

Just come 9-7-90 from Rly [illegible] 11-7-90

[illegible]

schedule for 1889-90

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## Public Works Department.

Current No. 5922 135/18

Letter No. 242 M.D

Dated 19th June 1890

From the Supy. Engr. II Circle

### Note of Remarks.

The Supy: Engr. II Circle submitted with his letter No 43 M.D. d/ 17th April 1890 plans & Estimates, the latter amounting to Rs 31,275 & Rs 36,500 for bridging the [illegible] at Teerapundy and Uttamapaliam with masonry bridges.

These plans & Estimates were returned to the Supy: Engr., with this Office Memo No 2519C d/ 28th May 1889, for the purpose of fresh Estimates being prepared for plate girder bridges and for reduction in some of the rates.

In conformity with the instructions conveyed in this Office memo above quoted the Supy: Engr. now submits plans & Estimates for plate girder bridges the latter amounting to Rs 31,500 for the Teerapundy bridge & Rs 36,390 for the Uttamapalaiyam bridge which shows an excess over the previous estimates as follows

| Masonry | Iron |
|---|---|
| Rs 31,275 — | Rs 31,500 |
| " 36,500 — | " 36,390 |
| Rs 67,775 | Rs 67,890 |
| | 67,775 |
| | Excess Rs .. 115 |

One of the reasons for suggesting iron for masonry was economy but this does not appear to be realized.

The Supdg: Engr in his letter explains that the high rates were necessary owing to the scarcity of labour in the locality and in support of which submits data.

The following is a summary of the work to be carried out.

– Uttamapalaiyam Bridge –

The design shows this bridge to have 4 spans of 42' each with piers 5' in thickness and abutments and wings 30 ft in length making an aggregate length of 243 feet – 1.35/19

The clear width of the roadway on the bridge is to be 16 feet & 23 ft at the wings. The approaches are to have gradients of 1.36 in 100 & 1.60 in 100 –

The foundations will consist of burnt stone roughly squared & laid in surki mortar on a bed of 2 ft of concrete –

The piers abutments & wings are to be built with coursed rubble roughly chisel dressed laid in mortar with cut stone facings & pointed –

The section of the girders including cover plates will be 3'.2" × 1'-4". For convenience of carriage each girder, the length of which is 45 ft, will be in four parts, and rivetted together on the site of the work.

The M.F.L. at site of bridge is given as 45.00 & the level of the lower flange of the girder as

48.00 leaving a space of 3 ft for floating bodies. The flood level in 1884 at anicut is shown to be 46.95 and in 1887 44.96, and the crest of anicut as 41.95 with these levels the waterway provided appears to be sufficient.

The levels on cross sections A.B.C & B.D.C appear to have been reversed, they have been altered in pencil.

— Veerapandy Bridge —

This bridge is of the same dimensions as the Uttamapolayam bridge only that the wings are to be 25' instead of 31' in length. The construction is the same.

The probable H.F.L. below anicut is given as 1008.75 but on the plan of the bridge H.W.L is shown to be 1006.00 and the level of the lower flange of the girder 1008.75 which is not quite satisfactory as it is hardly possible there would be a difference of 2.75 between H.F.L below

Length of anicut (by scale) is 325 ft. and to pass a Max.m Flood with a head of 6' (vide section) the discharge will therefore be ~~[illegible]~~ 16250 cft per second.

Water-way allowed for the bridge being 1911 square feet will therefore ~~ample~~ be sufficient provided the velocity of flow is 8.5 feet per second.

This is rough but ?

Think that the 683× hydraulic information should have been given —

the anicut 135 ~~[illegible]~~ H.W.L at site of bridge, the distance between the anicut and bridge being only× 500 ft see Long: Section D.F.E.K.L. and the suitability of the water levels given is not understood as in many cases they are below bed level. Cross sections of the river above & below the bridge should have been given and the position of the bridge should have been shown on the long: section —

From the cross sections of the new line of road assumed to be M.N.O.R. considerable raising will have to be done, and a tunnel to pass the cross drainage from the nanja lands lying on the north side will have to be provided ~~but~~ as no provision is made for a tunnel in the Est:—

If there is no serious objection to it ~~&c~~ a skew bridge might be constructed and the existing line of alignment to which would probably cost less than the proposed new alignment.

The following lump sum provisions were made in the Ests:—

— Veerapaundy —

Railing —— Rs 2000

Erecting & fixing including scaffolding Rs 3000

— Uttamapaleiam —

Railing —— Rs 2000

Erecting & fixing including scaffolding " 3000

Compensation for land & houses —— " 1500

These ~~work~~ bridges are brought under the head of Provincial—

2. 7. 90

Front & rear aprons are not provided for either of these bridges a dry stone flooring is provided for only the Uttamapaleiam bridge.

2. 7. 90

---

IV

135/21

For the Veerapaundy anicut I think it would be safe to assume that the head due to the velocity of approach is at least 6".

The formula for a submerged weir is

$$D = L \times c\sqrt{2g}\left\{dd\sqrt{d+h} + \frac{2}{3}\left[(d+h)^{\frac{3}{2}} - (h)^{\frac{3}{2}}\right]\right\}$$

$L = 325$

$c = \cdot 8$ from Mullins Manual—

$\sqrt{2g} = 8$

$dd = \cdot 4$

$d = 2$

$h = \cdot 5$

$(d+h) = n = 2\cdot 5$

$\sqrt{n} = 1\cdot 58$

$n^{\frac{3}{2}} = 3\cdot 953$

$h^{\frac{3}{2}} = \cdot 353$

$dd\sqrt{n} = 6\cdot 32$

$\frac{2}{3}\left[n^{\frac{3}{2}} - h^{\frac{3}{2}}\right] = 2\cdot 4$

$D = 325 \times \cdot 8 \times 8 \times 8\cdot 72$

$= 18137$ cft. per second—

If this be correct the velocity through the proposed bridge would be 9½ feet per second and it would seem probable—

4 — which

that the girders should be placed at a higher level than as designed

For the Uthamapalayam anicut head due to velocity of approach may be taken as 3"

Then

$$L = 265$$
$$c = \cdot 8$$
$$\sqrt{2g} = 8$$
$$d_d = 4$$
$$d = 1$$
$$h = \cdot 25$$
$$(d+h) = n = 1 \cdot 25$$
$$\sqrt{n} = 1 \cdot 118$$
$$n^{\frac{3}{2}} = 1 \cdot 397$$
$$h^{\frac{3}{2}} = \cdot 125$$
$$d_d \sqrt{n} = 4 \cdot 472$$
$$n^{\frac{3}{2}} - h^{\frac{3}{2}} = 1 \cdot 272$$
$$\frac{2}{3}(n^{\frac{3}{2}} - h^{\frac{3}{2}}) = \cdot 848$$

and

$$D = 265 \times 6 \cdot 4 \times 5 \cdot 32$$

= 9022 cft. per second.

and a velocity of about 3½' per second would be required to pass this through the bridge.

The surface fall between anicut and sill of bridge is ·95 and not nearly 2. The velocity will be probably much more than 4½' per second, which is the velocity required to pass the max.m flood through a bridge of 3 spans.

135/22

The draft memorandum has been altered in accordance with the above, and your pencil notes.

OVB.
22.7.90

Approved
25.7.90

No 42 M.a

## Report to accompany Estimates for Bridges over the Suruliyar.

135/23

Enclo 10
2 Estimates with Specification
2 Tracings of Bridges.
5 Sheets of survey & level Sections.
10

In the note by His Excellency the Governor of his tour in the Western and Southern Districts in 1887 the request of the Municipal Council of Periyakulam that the road leading to the site of the Periyar Project might be bridged at the expense of Provincial funds is adverted to and in G. O. No 188 W. of 17th January 1888 the Superintending Engineer is directed to report on the nature and cost of the proposed works.

2. The only unbridged streams of importance which the road crosses are:-

The Varaghanaddi at Periyakulam
" Teniaur — 9 miles from — do
" Suruliyar — at Virapandi 14 miles. do
" Suruliyar — at Uttamapalayam 29 miles do

3. The Varaghanaddi has a drainage area of about 80 Sqr. miles which includes the slopes of the hills for several miles South of Kodaikanal. Freshes rise rapidly but do not last long and in the smaller ones the water is nearly all taken up by the numerous chann and tanks. There seems no reason to suppose that the river is often or for any long time impassable at Periyakulam. The construction of a bridge is very desirable for the sake of local and through traffic but the work is one

which would benefit the Municipality chiefly. The District Board has less interest in the work; Government interests are not directly concerned at all. A substantial and ornamental bridge could be built for Rs 25,000. No exact estimate has been made.

4. The Teniaur drains 140. Sqr. miles. a considerable part of which is hill country. The freshes rise rapidly but do not last for long after the cessation of rain and the river is therefore is not very often impassable. Though a bridge would be a great convenience there are more urgent works in the Madura District and this might be deferred until the District Board can afford to carry it out. The crossing of this river is probably about as troublesome as that of the Varaghanaddi. Both have beds of coarse sand through which there is no very great difficulty in pulling bandies. The cost of a bridge would probably be Rs: 25,000. –

5. For the two bridges over the Suruli detailed plans and estimates have been prepared. The Virapandi Bridge will cost Rs: 31,275, the Uttamapalayam Bridge Rs: 36,500. It should be mentioned however that lump sums are provided for compensation. These two bridges must be built before the Periyar Project is completed. The ordinary supply from the Periyar will be 1500. C. ft. per second for nine months of the year. and this alone, the bed width of the river being a little over 100 ft and the fall 12 ft. per mile, will give an average depth of 2¾ ft. and a velocity of 3½ miles an hour. Ordinary carts could

could probably not cross such a stream and when it is taken into account that this supply from the Periyar is in addition to the ordinary discharge of the river (except in floods when the Periyar water will be cut off) it is evident that unless the river be bridged traffic can be carried on only during three months of the year. 135/24

6. The diversion of the Periyar will necessitate the construction of still another large bridge. The road from Theni (near the site of second bridge above referred to) to Andipatti and other places to the east crosses the Vaigai near Kunnur Village, three miles from Theni and a little below the confluence of the upper Vaigai and Suruli. An absurdly low and short bridge was built at this place when the road was made but the river soon turned and partly destroyed it. The road is an important one as it is the only way of communication between the Tirumangalam and Periyakulam Taluqs. The District Board ought therefore be required to build a suitable bridge within the next five years. The work can perhaps be done for Rs: 30,000 as rock will probably be found not far below the river bed.

7. As has been stated above though it would be a great convenience to have bridge over the Varaghanaddi and Teniaur there is no pressing necessity for such works and at the most only some assistance from Government can reasonably be asked for. The bridges over the

3734

the Surulis must be regarded from quite a different point of view, since their construction is necessitated by the action of Government in diverting the Periyar. By this the revenue of the District Board will be eventually increased to Rs: 30000 or more but meantime funds are, it is believed, not available and the bridges must be built without delay. The Kuner bridge also must be built soon and for that the District Board will, it is supposed, have to bear all the charges. -

(1)

1/25.4.89

W. Hughes.

Superintending Engineer
VI. Circle

17-4-89

Despd 19.

£14
(x 2 plans
& 6 sections

G. O. Nos 188 W d/ 17-1-88.
Memo No 2364 C d/ 16-5-89
Pro. Nos 3891 W d/ 11-12-88
" B " 1076/A d/ 22.4.89
" A " 3131-32.33 W d/ 6.10.88
" " " 499 W/500/501 d/ 19.2.89.

G. O. No 188 W d/ 17.1.88.

0/1875 Ol. 49/5

0/875

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OFFICE OF THE SUPERINTENDING ENGINEER,
6TH CIRCLE.

Kodaikanal 19th June 1890
D 21/-

No. 242 M.D.

3 P

135/25

From Lt. Col. A. C. Smith R.E.
~~The~~ Superintending Engineer,
6th Circle.

To
The Chief Engineer
P. W. D.

Sir,

With reference to your Memorandum No. 2519 C dated 28th May/89, I have the honor to forward for your approval and sanction the accompanying plans & estimates x for constructing iron girder bridges across Suruliyar at Veerapandy and Uthamapalayam in the Periacolam Taluq, Madura District.

ENCLOSURES. 10
2 Site-plans
3 Seal Sections
3 Plans
2 Estimates

x Bridge at Veerapandy — Rs 31,500
Do at Uthamapalayam — 36,390

2. As regards the high rates referred to, I have the honor to state that they are found necessary owing to the scarcity of labour in the locality & data in support of them are submitted.

I have the honour to be

Sir

Your most obedient Servt

A Hamilton Locke
Supt of Engineer [illegible]

135/~~26~~

PW Cd. 5922

From

The Supdt. Engineer
VI circle

To

The Chief Engineer
P. W. D.

No. 242 M.D.
Dated 19th
Despd. 21st June 1890
Rd. 23-6-90

Enclo: 19 (8 plans)

Sent back for ... 26/7/90

Forwards for approval & sanction Plans & Estimates for constructing iron girder bridges across Suruliyar at Veerapandy & Uthamapolayam in the Periyakulam Taluq—

Obs 93-VII

Crsd
24.6.90

---

P. W. D. 6TH CIRCLE.

From

The Superintending Engineer,
6th Circle.

To

The

No.

Dated
Received } 188

No. 3211 C. d/ 31st July 1890

Enclosure.

Memo No. 2929 C d/ 5.7.90.
" " 2519 C d/ 28.5.90.
P. Acc 1718 W d/ 28.6.89

0/7/7

Sent again 0/23/7

2.28.7.90

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OFFICE OF THE SUPERINTENDING ENGINEER,
6TH CIRCLE.

Trichinopoly 1st ~~August~~ Septr 1890

No. 505 M.O.

135/27

From Lt. Col. A. C. Smith R.E.
~~The~~ Superintending Engineer,
6th Circle.

To

The Chief Engineer for Irrigation.

Sir,

ENCLOSURES. 12.*
2. Site plans
3. Level sections
3. Plans
2. Estimates
1. Calculation sheet
1. Extract from a letter from Mr. Hughes. Ex. Engr.

* Sent separately

In reply to your No. 3211 C / 31st ~~Ultimo~~ July 1890 About the bridges over the Suruliyar. I have the honor to enclose extracts from a letter from Mr Hughes, Executive Engineer, And to resubmit the plans and estimate

2. You will observe he now gives the data and calculations hydraulic and otherwise on which he drew out his designs

3. The general designs were more or less determined on before I came to this Circle so I did not dela

matters by making any suggestions but I quite concur in Mr Hughes remarks regarding masonry v. iron for structures in this locality.

4. Two questions therefore suggest themselves to me. Viz:

1. Ought the bridges to be built of iron or of masonry
2. If of the former, should not a regular form of girder as recommended by the Government (modified where required) be adopted;

it seems rather superfluous labor on the part of our local Engineers thus calculating loads and strains for various weights and spans when all this has been already gone into in a most thorough manner by Specialists in England.

5. Mr Hughes seems to have given ll the information called for in e memo under reply and I st instructions as to whether the bridges can be built as designed or whether you still wish any alterations to be made.

135/28

I have the honor to be
Sir
Your most Obedient Servt
A Smith Lt Col. RE
Superintending Engr VI Circle

AJ

P. W. C. No. 8430

No 22 E.W. d/4 Sept. 1890

Enc: 12.

Transferred to the Chief Engineer P.W. Dept

H. [illegible]

for Chief Engineer for Irrign

Rd 8-9-90.

Enc. 21 (+ 8 plans)

Memo no 3211 C of 21.7.90.
. . 3408 C of 26-7.89
. . 2929 C of 5.7-90
Pr. Ans 1718 w of 25.6.89
Memo no 2519 C of 28.5.89
Pr. Ans. 1429 w of 29.5.89
Memo no 2364 C of 16.5.89
Pr. Ans 2702 w of 31.8.88
Pr. Ans 2861 w of 13.9.88
- B . 2474-5 w of 14.8.88
- A . 3582 w of 12.4.88
. . 1387 w of 11.6.88
. . 1525 w of 16.6.86
Despt no 2/209 w of 1-2.86
Pr. Ans 209 w of 1-2.86
. . 1718 w of 28.6.89
. . 8395 w of 24.10.88
Despatch no 14/1718 w of 28.6.89
Pr. Ans 1429 w of 29.5.89
. . 2674 w of 25.9.89
Despt no 15/2067 w of 1-8.89
Pr. Ans 2067 w of 1.8.89
Despatch no 14/1718 w of 28.6.89
Pr. Ans 1718 w of 28.6.89
Pr. Ans 499-500 w of 19.2.89
. . 310 w of 4-2.87 Coleroon

Pr. B no 1414 w of 18.1.89. Pr. A no 1525 w of 16.6.88 Memo no 2008 of 29.5.84 Pr. Ans 1740 w of 10.7.82
Memo no 33 C of 7.1.89 Memo no 3832 of 30.7.85 . 1888 of 25.5.84 . . 2812 w of 11.4.84
. 6040 C of 13.12.88 . . 3052 of 11.7.85 . 315 C of 11.2.84 . B . 1393 w of 3.6.84
. 4969 C of 11.12.88 . . 2904 C of 30.6.85 . 212 C of 31.1.84 Memo no 1040 of 23.4.84
. 4895-6 C of 6.12.88 . . 764 C of 11.4.85 . 669-70 C of 20.3.84 . 732 of 21.8.84
. A 2295 w of 24.10.88 . . 572 C of 17.3.85 Pr. B no 1057 w of 25.4.84 . Copy of 18.3.84
. A 1287 w of 4.5.88 . . 2139 of 30.5.84 Pr. B . 2004 of 15.7.83 Pr. Ans 2/209 w of 1.2.86
Memo no 315 C of 11.2.84 Despatch 2/209 w of 1.2.86

### P. W. D. 6TH CIRCLE.

From

The Superintending Engineer,

6th Circle.

CHIEF ENGINEER
FOR IRRIGATION.
-4 SEP. 90
No. 53 M.D.

To

The Chief Engineer
for Irrigation

No. 505 M.W.

Dated 1st
do. 2nd
Received
} Septr. 18890.

Enclosure. 12 sent separately.

Suriliyar Bridges

Resubmits plans and Estimates about the - and requests instructions

D.S. 10/9

M 17/9

Circd 8/9.90

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OFFICE OF THE SUPERINTENDING ENGINEER,
6TH CIRCLE.

Trichinopoly 9th October 1890.
D "

135/24

6P

No. 655 M.D.

From Lt. Col. A. C. Smith R.E.
~~The~~ Superintending Engineer,
6th Circle.

To

The Chief Engineer
D. P. W

Sir,

ENCLOSURES.

The plans and estimates called for in your No 3828 C of the 20th September /90, for bridges propo~~se~~sed over the Surliyar in the Madura Division, will be forwarded as soon as they are received back from the Executive Engineer, to whom they were returned in June /89, and to whom a remainder has been sent for them.

10

2. In the mean time, I have the honor to request that, in the

suing years Budget, provision
be made for the bridges to the
following extent:—

Bridge at Veerapundi ... Rs 15,000

Do at Uttamapaliam Rs 15,000

. The bridges are likely to cost bet-
ween 30000 and 40000 Rs each, but
additional grants will be applied
for in the course of the year, if the
works make satisfactory progress.

4. It will be seen from this office
No† 43 M D of the 17th April /89 that × 2519C d/25-5-89
these two bridges are more urgent
and important than others and
should be built before the Periyar
Project is completed.

I have the honor to be
Sir
your most Obd Servt

A L Smith L Col. R.E.
Supg. Engineer II Circle

P.W.C Nº 9722

(~~34~~ 33)

From

The Supdt. Engineer
VI circle,

To

The Chief Engineer
P. W. D.

Nº 655 md

Dated 9th } October 1890,
Despd. 11th

Rd 14.10.90

Bridges over the Surliyar: —

Informs that the plans & estimates for — will be sent shortly & requests to make provision in the coming years Budget for the bridges —

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P. W. D. 6TH CIRCLE.

(33)

From
The Superintending Engineer,
6th Circle.

To
The

No.

Dated
Received } 188

Enclosure.

L.O. pending receipt
of reply to
No 4683 C of
15th November
15/11/90

---

OFFICE OF THE SUPERINTENDING ENGINEER,
6TH CIRCLE.

Trichinopoly 13th October 1890.
D 15

No. 672 md.

135/31

7 P

From Lt. Col. A. C. Smith R.E.
~~The~~ Superintending Engineer,
6th Circle.

To

The Chief Engineer
D. P. W

Sir,

ENCLOSURES. 6.
2 Estimates
3 Plans
1 Copy of letter from the Exec. Engr. Madura No. 444 of 8.10.90.

With reference to your memorandum No. 3828 C of the 20th Sept /90, and in continuation of my No. 655 M.D. of the 9th instant, I have the honor to resubmit the plans and the estimates for masonry bridges over the Surliar river

| | | 31,900 |
|---|---|---|
| (1) at Veerapandi estimate Rs | — | 31,275 |
| | | 36,840 |
| (2) at Uttamapaliem estimate Rs | — | 36,500 |

2. Copy of letter No. 444 S.E. of the 8th instant, from Mr. Hughes, Executive Engineer, Madura Division, which accompanied the above plans and estimates is also forwarded herewith

HG

In this letter allusion is made to his former letter No. 321 S.E. of the 22nd August /90; extract from this, containing information on the point of flood level at Veerapandi, etc, was forwarded with my No. 505 M.D of the 1st September /90. I have now only to recommend early Sanction to the estimates.

3. The entry "vitrified bricks" originally made in the estimates, has been now altered into broken stone with reference to para 2 of Mr Hughe's letter.

I have the honor to be
Sir
Your most obedient Servt.

A L Smith Lt Col. R.E.
Superintending Engr. II Circle

PWC No. 9840

From

The Supdt. Engineer
VI circle.

To

The Chief Engineer
P.W.D.

No. 672 MD
Dated 13 }
Despd. 15 } October 1890,

R. 17.10.90

~~Enc 6.~~ + (+ 3 plans)

Bridges over the Suruli-ar river:—

Resubmits the plans & estimates for—

3/4633 L

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P. W. D. 6TH CIRCLE.

(34)

From

The Superintending Engineer,
6th Circle.

To

The

No.

Dated }
Received } 188

CHIEF SECRETARY
22 DEC 90
GOVERNMENT, MADRAS

Enclosure

Seen
17.10.90

---

8 A P

Letter from the Executive Engineer, Madura Division, to the Superintending Engineer VI circle No. 444 S.E. dated 8th Oct./90.

135/33

With reference to your endorsement No. 594 M.D. dated 24th Sept/90, I have the honor to resubmit the plans and estimates for arched bridges over the Surili at Virapandi and Uttamapaliam. I do not think the plans need be altered. The foundations of both bridges will, no doubt, have to be laid at levels somewhat different from what is shown on the plans, especially at Uttamapaliam where the quality of the material to be built on is very imperfectly known.

In my No. 3213 S.E./22-8-90 I described the manner of arriving at the probable flood level at Virapandi. I think as on the most unfavourable assumption, that is with the river above the anicut embanked, the flood level will be

12

only a foot above the springing of
arches, the work would be quite safe.
As to the question of having three spans
instead of four at Uthama-paliam,
I think four preferable. The river sets
against the left bank and it would
be inadvisable to have the bridge
abutment built on the present
margin of the river bed.

2 I notice that in your office
the estimate items for concrete in
foundations have been altered to
concrete "with vitrified bricks". I
do not know how the mistake occurred.
There will be no vitrified bricks
available at the time the foundations
are being put in. The descriptions
of the work should be concrete broken
stone in Sukki mortar

3. With regard to rates, I have
thought it prudent to make them
pretty high as labor in the Cumbum
valley usually, owing to higher rates
and shorter working hours, costs
~~about~~ 50 per cent more than in

other parts of the District. Stone for the
Virapandi Bridge will have to be
brought from a quarry in ~~the~~ Bodi
naickanore Zemindari about 6 miles
from the works, or from a Government
quarry about 8 miles distant. I
do not know whether it can be
quarried by burning, that method
of quarrying not having been tried
as yet at the places indicated, and
I have therefore allowed for the Super-
structure a rate suitable for split
stone. If the stone can be burnt the
rates will be largely reduced. For the
Uthamapaliam bridge it is proposed
to use blasted stone roughly squared
for the foundation. For the Superstruc-
-ture burnt or wedged stone will have
to be brought from a hill about
6 miles away. The rate for burnt
stone will be higher than in Din-
-digul or Madura as wadders from
those talugs will have to be employed

13 The

The cheapest material to build with would of course be brick but the brick earth available is far from good being more or less mixed with limestone and stone is far preferable and more endurable. The arches will have to be built with care and with carefully selected material. I do not think the rate can be safely reduced.

(True copy)

A Smith Lt Col R.E.
Superintending Engineer
13.10.90. VI Circle

---

10 P

OFFICE OF THE SUPERINTENDING ENGINEER,
PERIYAR PROJECT.

No. 1809.P.R

Periyar 15th October 1890
D/- 16 - a -

From
Major Dun. Neil Campbell R.E.
Superintending Engineer,
Periyar Project.

135/35

To
The Chief Engineer
P. W. Department.

Sir,

ENCLOSURES. — —

With reference to your Memorandum No. 4076.C dated 10th Instant I have the honor to inform you that in the file of papers kept in this office regarding the proposed bridges on the road from Periyakolam to Cumbum I find only one letter No. 133.P.R dated 26th January/89 forwarded to the Chief Engineer for Irrigation & all the rest are addressed to the President District Board, Madura. ~~16~~

I have the honor to be,
Sir
Your most obedient servant
Dun Campbell Major R.E.
Superintending Engr.
Periyar Project

135/36

**P. W. D. Periyar Project.**

From

The Superintending Engineer,
Periyar Project,

To

The Chief Engineer
P. W. D

No. 1809.P.R

Dated } 15th } October 1890
Received }

Enclosure. —1—

Bridges on the Road from Periyakulam to Cumbum.

Reports the number & date of letter forwarded from this office to the Chief Engineer for Irrigation regarding proposed —

Enc 1709

1/4633 L

---

C/

P. W. Department

No 4683.C d/ 15 November/90

Memo

135/37

From the Suptg: Engineer VI circle No: 505 M. D. d/ 1st September 1890

Do No: 672 M. D d/ 13th October 1890

From the Suptg: Engineer Periyar Project No: 1809 P. R. d/ 15th October 1890

(with papers enclosed)

Memo by the Chief Engineer P. W. Dept. dated 28th October 1890.

12 P

8430
9845
9931
~~9922~~

Referred to the Local and Municipal Dept. in view to the opinion of the District Board on the Chief Engineer's proposal being obtained.

2 No regular estimates have been made of the cost of the bridges on the Pambar, Varagha Nadi and Theniyar. It is however believed that th will not exceed the ~~22~~ follo

Sums

| | |
|---|---|
| Pambaw . . . | 10,000 |
| Varagha Nadi . . | 20,000 |
| Theniyar . . . | 25,000 |

~~The Pambaw is a small stream, and the construction of a bridge across it is of much less importance than in the other cases.~~

~~The Theniyar is smaller than the Suruli, and the site is very favorable for the construction of a bridge.~~

P

W

[illegible]

3828. C d/ 20-9-90
2924. C d/ 5-7-90
3403. C d/ 26-7-90
3211. C d/ 31-7-90
2519. C d/ 28-5-89
1884 d/ 17-1-88
4076. C d/ 10-10-90
740 I d/ 15-12-88

Stet

No 4683 C d/ 15-11-90

15.11.90

To

The Local and Municipal Dept.

with papers in original

to be returned

Despd with E 21
P.W.C No 8430 including
8 plans. P.W.C No 9848 5 Dec
9 including 3 plans
P.W.C No 4431 forwarded
by the Chief Engineer
P.W.D.
24-10-
1711

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135/38
13

# PROCEEDINGS OF THE MADRAS GOVERNMENT.

READ the following paper :—

Memorandum from the Public Works Department dated 15th November 1890 No 4683 C referring certain papers connected with the construction of certain bridges and requesting that the opinion of the Madura District Board may be obtained on the Chief Engineer's proposal. Also letter from the President, District Board, Madura, dated 20th December 1890 No 279.

With reference to Government endorsement No 1027 dated 26th November 1890 forwarding for the opinion of the District Board certain papers connected with a proposal in the Public Works Department to construct certain bridges on the road from Periyakulam to Cambam, I have the honor to submit herewith a copy of their resolution No 167 dated 15th December 1890 on the subject.

2- The papers in original received with the endorsement under reference are herewith returned as directed.

## Enclosure

Proceedings of the District Board, Madura passed at their special meeting held on Monday the 15th December 1890.

Present:-

× × × ×

× × × ×

## Resolution No. 167

Read endorsement of the Government, Local and Municipal Department, Madras, No. 1027 dated 20th November 1890, referring for early report certain papers connected with the construction of certain bridges on the road from Periyakulam to Cambam, and requesting to communicate the opinion of the District Board on the Chief Engineer's proposal to the effect that in case the Government undertake the construction of the bridges on the two crossings of the Suruli at Virapandi and

and Uthamapalayam, the Board might reasonably be expected to undertake the construction of at least two of the three others namely, Pambar, Varaghanadi and Theniyar.

135/39

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The Board are of opinion that they can make the Theni bridge as soon as practicable, and they will undertake the other bridges as soon as their funds allow.

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## Order dated 10th January 1891 No. 41 L. Mis

The President's letter, with the District Board's resolution referred to therein, will be communicated to the Public Works Department.

(True Extract)

W. Brodie
Ag: Assistant Secretary

To

The Public Works Department. 24
with the original papers returned.

Govt. of (188 ) Madras.

135/40

To

Proceedings, dated 188 ,
No.

*Subject.*

25

P.W.D. No 411 S

Govt. of (18~~8~~/) Madras.

Local and Municipal Department.

To

The P. W. Department

E. Engl on paper

Dy 14-1-91

Proceedings, dated 10th January 18~~8~~91.
No. 41 L/mis

Subject.

Communicating letter from the President District Board Madura regarding the construction of certain bridges on the road from Periyakulam to Cumbum

17.1.88 - 188 W Orig
15.12.88 - 740 d
28.5.89 - 2519 C
25.7.89 - 3403 C
5.7.90 - 2929 C
20.9.90 - 3828 C
31.7.90 - 3211 C
15.11.90 - 4683 C

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No. 135 W d/ 16th Jany 1891

B & R
Bridges

PUBLIC WORKS DEPARTMENT.

# PROCEEDINGS OF THE MADRAS GOVERNMENT.

15 P

135/41

READ the following

From the S. E. VI Circle No. 43 M.D. d/ 17th Apl 89.
— Do — Do — No. 242 M.D. d/ 19th June 1890.
— Do — Do — No. 505 M.D. d/ 1st Septr 1890.
Endt by the Chief Engr for Irrign No. 22 E.W. d/ 4th Septr 1890.
From the S. E. VI Circle No. 655 M.D. d/ 9th Octr 1890.
— Do — Do — No. 672 M.D. d/ 13th Oct 1890.
From the S. E. Periyar Project No. 1809 P.R. d/ 15th Oct 90.
Note by the Chief Eng. P.W.D. d/ 18th Oct 1890.
Endt in the P.W. Deptt, No. 4683 C, d/ 15th Nov 90.
Proceedings of Govt
Local & municipal Deptt No. 41 L mis, d/ 10th Jany 91

HS
16 Jan

The estimates amounting to Rs 31,900 and Rs 36,840 respectively for the construction of masonry bridges over the Sualiar

river at Veerapandi
and Uthamapalayam
on the road from
Periyakulam to
Kumbum, are sanctioned.

2. An allotment
of Rs 18,000 will be
provided for each
bridge in the Govt.
budget-estimate
for 1891-92.

3. This sanction
has been registered
as Govt. No 94 W.
and 95 W of 1890-91,
and classified as
Communications,
Original Works.

15.1

Cu Hw 15.1.91

16-1-91

Print
300

S. E. VI Circle
with 3 encls
Ex: P. W. Accts
Local & Municipal
Depts.

13/2

135/42

16

~~45~~

9845.

Govt. of (18 ) Madras.

PUBLIC WORKS.

17/1/91

45

Dated

Recd.

Encl.

G.O. 16th Jany 1891. No. 135 W.

Bridges over the Surliar River

Madura Dt.

Estimates amounting to Rs 31,900, and Rs 36,840 for the Constn of —, at Veerapandi and Uttamapalayam on the road from Periyakulam to Kumbum Sanctioned.

80/11

RC 17/1.

2/17/1

45