M.R.O. 1—22,400—23-11-30.

MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

Cons. 25-8-57

G.O. No. 1606 Press Mis.

1—3

Dated 19—8—1857

Not to be folded or roughly handled

No. 1. Read the following Reports from Colonel C. E. FABER, Chief Engineer; to H. FORBES Esq., Acting Secretary to Government, dated 6th December 1856, No. 8662.

Communications bridges across the Katamunnairoo and Pullavole Vaugoo rivers.

Report XX, upon two bridges proposed to be built over the Katamunnairoo and Pullavole Vaugoo rivers, which are upon the road from Nellore to Cuddapah, viâ the Dorenal pass.

The estimates after revision, are for the bridge over the Katamunnairoo Rupees (9,860) nine thousand eight hundred and sixty, and for that over the Pullavole Vaugoo Rupees (8,120) eight thousand one hundred and twenty.

These projects were originally forwarded by the District Engineer for the Budget of 1856-57, but were returned for revision. They have been now prepared and submitted, designed as to the size and shape of arches (which have been altered to Ellipses from segments of circles,) in accordance with instructions from this Office.

2. The bridge over the Katamunnairoo consists of 5 Elliptic Arches of 36 feet span, with a rise of $\frac{1}{3}$ width of road-way 18 feet.

3. The piers are 6 feet high, the highest rise of water is given as 13 feet, the area of the Section of the river is, 2,031, and the water-way of the bridge 2,770. The soil upon which this bridge is to be built is hard, firm soil, and the rates upon which the expenditure is calculated, are moderate; with the exception of that for Arch work which I have reduced from 3 Annas a cubic foot to anna 1 and pie 9, the rate used, and found sufficient in the road Department in that District.

4. The bridge over the Pullavole Vaugoo, consists of 4 Elliptic Arches of 36 feet span, each, with a rise of $\frac{1}{4}$ the piers are 9 feet high, the rise of the river is given on the bridge plan as 12 feet, area of Section of river 1,449, and area of water-wa y of bridge 2,312, the foundations are in hard gravelly soil, the width of road-way between the parapets is 18 feet. The same observation as to rates, applies to this bridge as to that over the Katamunnairoo.

5. These two bridges are the only masonry works of large size required to complete this important line of road, connecting the District of Cuddapah with Nellore, and I recommend that they be sanctioned, and placed in the Budget of 1857-58.

No. 2. Report KKKKK, on an estimate for completing the road from Nellore to Kadannillypaud on the limits of the Cuddapah District, being a portion of the Central road from Nellore to Cuddapah viâ the Dorenal pass Budwail and Cheenoor.

Amount of estimate 81,800.

	M.	F.	Yards.
Distance.....	52	5	207

This estimate is revised from that forwarded last year by the then Civil Engineer and which amounted to Rupees 1,32,300.

2. The reduction has been effected by reducing the rates to the average cost at which works have been executed in the Nellore District, by reducing the width of the bridges which are small to a width of 18 feet between parapets and by reducing the width of metalling; and apportioning the thickness of it to the nature of the soil.

3. There have already been two grants of 1,000 Rupees each per mile upon this road made on the 27th January 1854 and the 10th February 1855 which together with the present estimate would make the total per mile 3,550 the first expenditure has not it appears been laid out so judiciously as it might have been but the fact is that it was done hurridly for the employment of

the starving population and although every exertion was made by Lieutenant Palmer and by the Overseers under him still their newness to work, of course caused some excess of expenditure from want of that method which habitude alone gives.

4. The work on the road for which this estimate provides needs no particular professiona detail, it consists in completing the earth work, metalling where absolutely necessary, and in completing the bridging of the road. The bridges, tunnels &c. are all small and of no interest as Engineering works.

Of the estimate itself.

The earth-work is Rupees	4,602
Metalling	28,152
Removing Rock	1,309
Turfing and plantation	1,092
Superintendence	4,068
Sundries	3,970
Bridges, tunnels, road Dams &c.	38,607
Total Rupees	81,800

eighty-one thousand and eight hundred.

5. The top surface of the road is 8 yards broad of which 5 yards are to be metalled to thicknesses determined by the nature of the subsoil, and I believe that Lieutenant Mullins has personally made the estimate revising it carefully and leisurely and has calculated the cost with every regard to economy without sacrificing efficiency as indeed a reduction of $\frac{5}{75}$ in the amount of the estimate very clearly shews.

6. The commercial value of this road connecting Cuddapah with Nellore has already been laid before Government and a traffic statement accompanies this report shewing a trade of 500 bandies a month from Cuddapah to Nellore, with its corresponding return traffic independant of Bullocks and Coolies which also are very numerous.

7. The complete estimate is recommended strongly for sanction and entrance into the budget of 1857-58.

No. 3. ORDER THEREON, No. 1606; dated 19th August 1857.

Para. 1. The road from Nellore to Kadanellypaud at the foot of the Dorenal pass, being part of the line from Nellore to Cuddapah, crosses four large streams; viz. the Beerapairoo, the Booggairoo, Pullavole Vaugoo and Katamunnairoo. A bridge over the first mentioned river sanctioned on the dates noted in the margin* is reported to have been completed, and that over the Boogairoo sanctioned by the Government of India on the 11th July† 1856, would appear from the entries in the Budget for 1857-58 to have been commenced. The Chief Engineer now submits with the first of the reports above recorded, two estimates, amounting respectively to Rupees 8,120 and 9,860, for bridges across the two remaining streams, the Pullavole Vaugoo and Katamunnairoo.

* 31st March 1851, No. 122
26th September 1853, „ 362
16th November 1854, „ 491

† Extract Minutes Consultation, 12th August 1856, No. 1405, para. 4.

2. The estimate forwarded with the second report and amounting to Rupees 81,800, is for completing the road itself, and constructing minor masonry works. Including the cost of the bridges over the Pullavole Vaugoo and Katamunnairoo above referred to, this estimate would amount to Rupees 99,780 as shewn below:

	Rs.	Rs.
For earth-work	4,602	
Metalling	28,152	
Turfing	753	
Cutting rock	1,309	
Planting	339	
Establishment	4,068	
Sundry charges	3,970	
		43,193

Swaller Masonry Works.

		Rs.	Rs.
100 Tunnels	13,205		
22 Small bridges	24,670		
58 Dams	732		
		38,607	
			81,800
Bridge over Pullavole Vaugoo	8,120		
Do. Katamunnairoo	9,860		
			17,980
		Total	99,780

‡ Returned to the Chief Engineer with several others with Ex. Mins. Cons., dated 10th March 1856, No. 362.

3. With his report KK, dated 26th January 1856, the Cheif Engineer submitted an estimate‡ to the amount of Rupees 96,570 as shewn below for this road inclusive of the two large bridges.

	Rs.
For road	42,802
Smaller masonry works	33,698
Katamunnairoo bridge	11,050
Pullavole Vaugoo	8,050
Total	96,570

The estimate forwarded by the District Engineer and which it was said amounted to Rupees 1,51,000 was, on revision in the Central Office, reduced to the above sum of Rupees 96,570, as will be seen from the Report K K, above adverted to. The width of metalling was altered from eight to four yards, and the depth from nine to six inches; but the estimates for the larger bridges were increased, the Chief Engineer observing as follows, "I have revised the bridge "over the Katamunnairoo which had an insufficient waterway, so increasing the estimate from "Rupees 10,720 to Rupees 11,020 and the bridge over the Pullavole Vaugoo has also for the "same cause been revised, the estimate being Rupees 9,050 instead of Rupees 7,920." The cost of the smaller masonry works was also augmented from Rupees 33,576 to Rupees 33,698. These circumstances are not referred to in the Chief Engineer's Reports now under reference, and the omission leads to the inference that the Report KK, was wholly lost sight of on the present occasion.

4. The estimates now submitted for the Pullavole Vaugoo and Katamunnairoo bridges amount to only Rupees 8,120 and 9,860 respectively. The Government therefore request the Chief Engineer will, with reference to his opinion above quoted, be good enough to state whether the sums will suffice for rendering the structures substantial and secure. Explanation should also be furnished in repsect to the discrepancy¶ observable in the provision made in the two estimates for minor masonry works. The present estimate for the road, as stated by the Chief Engineer in para. 5 of his Report KKKKK, provides for a metalling over five yards, whereas that Officer on a former occasion, as remarked above, considered four yards sufficient. This point also needs explanation.

¶ Present estimate.....Rupees 38,607
Former do. ..... „ 33,698
Excess..... 4,909

5. According to the statement given in Extract Minutes Consultation of the 10th October last No. 1843, the sums sanctioned for this road, with the extension to Kistnapatam on the Coast, amounted ot Rupees 1,42,000‖, but it would seem from the District Engineer's letter§ that, with the exception of the portion just referred to, the road had not benefitted much from this large outlay. Indeed that Officer acknowledges that some waste of money had occurred in consequence of many of the famine coolies who were employed on the road having been unaccustomed to the work, as also from the superintendence having been inefficient. The Government observe from para. 67 of the Report on the Budget for 1854-55 that similar reasons were advanced in partial support of the second grant of Rupees

‖ Extract Minutes Consultation 27th January 1854, No. 48 ..... Rs. 71,000
Do. 10th Feb. 1855, No. 64.. 71,000
Total..... 1,42,000

§ Dated 25th Nov. 1856, KKKKK 1.

71,000 for the road which was entered in that Budget and sanctioned on the 10th February 1855. This amount as remarked in Major (then Captain) Boileau's letter of the 18th August 1854 was to be expended "in completing the earth-work, in metalling and gravelling, and in "masonry drains of the minor sort," and it is very unsatisfactory that a third application should now be submitted for no less a sum than Rupees 81,800 for completing the road. The Government request the Chief Engineer will report whether the entire sum of Rupees 1,42,000 has been expended, and he will also furnish information as to the extent of the line already made, the nature of the work performed, and the present condition of the road.

6. As no reason appears for treating the estimates for the larger bridges apart from that for the road, smaller bridges, and Tunnels, the Government resolve to return these documents to the Chief Engineer, in view to one estimate being prepared and submitted for the works in question with explanation on the several points now called for.

(Signed) H. FORBES,
Acting Secretary to Government.

Nellore

N° 8662

56

Communications

Report upon an Estimate for completing the road from Nellore to Kadamalley [illegible] in the limits of the Cuddapah district, being a portion of the Central road from Nellore to Cuddapah via the Dorenal pass & Budwail and Cheenoor.

Amount of Estimate 81,800

Distance Gs F Yards
52 - 5 „ 207

1 This Estimate is revised from that forwarded last year by the then Civil Engineer and which amounted to Rupees 1,32,300.-

2 The reduction has been effected by reducing the rates to the average cost at which works have been executed in the Nellore district, by reducing the width of the bridges which are small to a width of 18 feet between parapets and by reducing the width of metalling; and apportioning the thickness of it to the nature of the soil.-

3 There have already been two grants of 1000 Rupees each per mile upon this road, made on the 27th January 1854 and the 10th February 1855 which together

together with the present Estimate would make the total per mile 3,550. the first expenditure has not it appears been laid out so judiciously as it might have been but the fact is that it was done hurridly for the employment of the starving population and although every exertion was made by Lieutenant Palmer and by the Overseers under him still their newness to work, of course caused some excess of expenditure from want of that methods which habitude alone gives.—

4 The works on the road for which this Estimate provides needs no particular professional detail, it consists in completing the earth works, Metalling where absolutely necessary, and in completing the bridging of the road.——— The Bridges tunnels &ca &c are all small and of no interest as Engineering work.

Of the Estimate itself.

The earth works is Rupees	4,602
Metalling	28,152
Removing Rock	1,300
Turfing and plantation	1092
Superintendence	4,608
Sundries	3,970
Bridges, tunnels, roads Dams &c	38607
Total Rupees	81,800

Eighty one thousand & eight hundred.—

5 The top surface of the road is 8 yards broade of which 5 yards are to be metalled to thickness determined by the nature of the subsoil, and I believe that Lieutenant Mullins has personally made the Estimate revising it carefully and leisurely and has calculated the cost with every regard to economy without sacrificing efficiency as indeed a reduction of 5/13 in the amount of the Estimate very clearly shews.

6 The commercial value of this road connecting Cuddapah with Nellore has already been laid before Government and a traffic Statement accompanies this report shewing a trade of 500 bandies a month from Cuddapah to Nellore, with its corresponding return traffic independant of bullocks & Cooly which also are very numerous.—

7 The complete Estimate is recommended strongly for sanction and entrance into the budget of 1857/58.—

Central Office of Public Works.
Fort-St. George, 6th December 1856.

Alfred Fabre Colonel of Engineers
Chief Engineer D. P. W.

Compd Mulfeeld

Documents

Documents Accompanying.

1 Letter № 1321 dated 25th November 1856. KKKKK 1

1 —"— D° № 338 dated 24th November 1856. KKKKK 2

1 Abstract Estimate — — — KKKKK 3

1 Report on Dorenal pass KKKKK 4

1 Sketch Map — — — KKKKK 5

1 Traffic return — — KKKKK 6

5 Bridge Plans. — — KKKKK 7, 8, 9, 10 & 11.

To,

The Secretary to Government N.W.P.

Dy to Consltn thereon 4/56 K 89-

KKKKK

Public Works 1856 Department-
Dy to Cons 25th August 56.
No 2875

From,

The Chief Engineer

To

The Secretary to Government F.W.D.

Date 6th
Received 9th } December 1856

No 8662

11. Enclosures Returned

S.C. No 1606. 19th August

Forwards with this recommendation for Consideration and entry in the Budget of 1857/58 an Estimate for completing the road from Nellore to the Darenal pass in Cuddapah. Amounting to Rupees 81800—

in the District of Nellore—

No 2.

C 29th Nov CU 1st Dec 14th

Nellore.

No 8662 IIB

Communications Bridges across the Katamunnairoo and Pullavole vaugoo rivers.

Report upon two Bridges proposed to be built over the Katamunnairoo and Pullavole vaugoo rivers, which are upon the road from Nellore to Cuddapah, via the Darenal pass.

The Estimates after revision, are for the Bridge over the Katamunnairoo Rupees (9,860) Nine thousand eight hundred and sixty, and for that over the Pullavole vaugoo Rupees (8,120) Eight thousand one hundred and twenty.

These projects were originally forwarded by the District Engineer for the Budget of 1856/57, but were returned for revision. They have been now prepared and submitted, designed as to the size and shape of Arches (which have been altered to Ellipses from segments of Circles) in accordance with instructions from this Office.

2. The Bridge over the Katamunnairoo consists of 5 Elliptic Arches of 36 feet span, with

a

a rise of 1/3, width of road-way 18 feet.

3 The piers are 6 feet high, the highest rise of water is given as 3 feet, the area of the section of the river is 2031, and the water way of the Bridge 2770. The soil upon which this bridge is to be built is hard, firm soil, and the rates upon which the expenditure is calculated, are, moderate, with the exception of that for Arch work which I have reduced from 3 Annas a Cubic foot to 1-9 a.p, the rate used, and found sufficient in the road Department in that District.

4. The Bridge over the Pullavole vaugoo, consists of 4 Elliptic Arches of 36 feet span, each, with a rise of 1/4. the piers are 9 feet high, the rise of the river is given on the Bridge plan as 12 feet. area of section of river 1449, and area of water-way of Bridge 2312. the foundations are in hard gravelly soil, the width of roadway between the parapets is 18 feet. The same observation as to rates, applies to this Bridge as to that over the Katamunnairo.

5. These two bridges are the only masonry works of large size required to complete this important line of road, connecting the District of Cuddapah with Nellore, and I recommend that they be sanctioned,

and

13B

and placed in the Budget of 1857/58.

Central Office of P.W.
Fort Saint George
6 Decr 1856.

Arthur Cotton Colonel
Chief Engineer

To

The Secretary to Government
Public Works Department.

Documents accompanying.

XX1. 1 Letter No. 1158 dated 29th October 1856.
XX2 1 Traffic return
XX3 1 Abstract Estimate for Katmannairo Bridge
XX4&5 2 Specifications of Bridges
XX6. 1 Abstract Estimate of Pullavole Vaugoo Bridge.
XX7&8. 2 Plans

Comp Rec'd 6th

that over the Pullavole vaugoo

P.W.D. 1557.

No. 1606.

Extract from the Minutes of Consultation under date the 19th August 1857.

Read the following Reports from the Chief Engineer

(Here enter 6th December 56 No. 3662. XX and XXXXX)

19. The road from Vellore to Pudumelly (and at the foot of the Perumal Patty being part of the road from Vellore to Cuddalore) crosses four large streams, viz the Bendra Vauvoo, the Bragavoy, Palar and Chiago and Katamunnaiyar Bridge over the first mentioned seven were rebuilt on the dates noted in the margin & reported to have been completed and taken over the Superintendence

to some time

XX

Public Works 1856. Dept.
Dto Cons 25 Augt 57.
No. 2810.

From
The Chief Engineer
To
The Secretary to Government
Public Works Dept.

Dated 6 } Decr 56.
Recd 9th }

8 Encs Returned

No. 3662
S.E. No. 163 dated 19th August

Forwards with his recommendation for entry in the Budget of 1857/58 estimates for two Bridges one over the Katamunnaiyar at a cost of Rupees 9860 and another over the Pullavoor vaugoy at a cost of Rupees 8120 both being situated upon the road from Nellore via Perumal to Cuddapah in the Distt of Nellore.

Vol.

Recd 11th Augt

× 31st March 1851 No 120
26th Septr 1853 " 362
16th Novr 1857 " 491

by the District Engineer and which it was said amounted to Rupees 15,000 may, on revision in the Central Office, be reduced to the above sum of Rupees 9,570, as may be seen from the Abstract KK above referred to.

The width of the Metalling was altered from eight to four yards, and the depth from nine to six inches, but the Estimates for these bridges were increased, the Chief Engineer observing as follows, "I think, revised "the bridge over the Malamunnamaina "nainon which load can in- "sufficient waterway, so "increasing the Estimate from "Rupees 10,720 to Rupees 11,020 "and the Bridge over the Pillavole "Vangoo has also for the same "cause been revised, the Esti- "mate being Rupees 9,050 "instead of Rupees 7,920. The cost of the smaller masonry works may be

augmented from Rupees 30,576 to Rupees 33,698. These circumstances are not explained in the Chief Engineer's Remarks under reference, and the omission leads to the inference that the Report KK was wholly lost sight of on the present occasion.

4 The Estimates now submitted for the Pillavole Vangoo and Malamunnamaina bridges amount to Rupees 8,720 and 9,860 respectively. The Government therefore request the Chief Engineer will, with reference to his opinion above quoted, be good enough to state whether the sums will suffice for rendering the structures substantial and secure. Explanation should also be furnished in respect to the discrepancy observable in the provision made in the

* Present Estimate Rs. 38,607
Former do * 33,698
Excess 4,909

two

two Estimates for minor
Masonry Works. The pre-
-sent Estimate for the road,
as stated by the Chief Engi-
-neer in para 5 of his Re-
-port XXXXX, provided for
a metalling over nine yards,
whereas Asst Officers on a
former occasion, as remarked
above, considered four yards
sufficient. This point also
needs explanation.

5 According to the
Statement given in Rollins:
Cons: of the 10th October last
No. 1843, the sums sanctioned
for this road, with the excep-
-tion to Krishnapatam on
the Coast amounted to Ru-
-pees 142000, but it would
seem from the District Engi-
-neer's letter that with the
exception of the portion just
referred to, the road had not
benefitted much from this
large

* Cir. 27 Jany 1857 No. 48. } Rs. 71000
No. 10 Feby 1855 No. 64 } " 71000
142000

+ dated 25 Novr 1856.
XXXXX

large outlay. Indeed that
Officer acknowledges
that some wastage of money
had occurred in consequence
of many of the famine
Coolies who were employed
on the road having been
unaccustomed to the work,
as also from the superinten-
-dence having been ineffi-
-cient. The Government
observe from para 67 of the
Report on the Budget for
1854/55. That similar reasons
were advanced in partial
explanation of the second grant
of Rupees 71,000 for the road
which was entered in that
Budget and sanctioned on
the 10th February 1855. This
amount ~~was~~ as remarked in
Major (then Captain) Boileau's
letter of 18th August 1854 was
to be expended "in completing
"the earthwork, in metalling
and

"and granelling, and in
"masonry drains of the
"minor work," and it is very
unsatisfactory that a
third application should
now be submitted for no
less a sum than Rupees
81,870 for completing the road.
The Government request
the Chief Engineer will
report whether the entire
sum of Rupees 142,000 has
been expended, and he will
also furnish information
as to the extent of the line
already made, the nature
of the work performed, and
the present condition of
the road.

6. As no reason
appears for treating the
Estimates for the larger
Bridges apart from that
for the road, smaller Bridges,
and Tunnels, the Government
resolve

2nd Pg

resolve to return these
documents to the Chief
Engineer, in view to one
Estimate being prepared
and submitted for the works
in question, with explanation
on the several points now
called for.

By

4 Copies to the Chief Engr. Dis. 22nd
with 4 Encls.

Cons.ns Mem.l 56 No 89
— 25.th Sept.r 56 — 58 @ 67.

2d
Exhibited 1857 Dep.t 10.
Ditto to Cons.s 28 Aug.t

1:1606.

3d
Extract Minutes of Cons.s

Of 19.th August 1857.

From Chief Eng.r 29.th Oct.r 57 6st. 2147
in 624 Rec.d

Returning to the Chief Engineer certain documents, in view to one Estimate being prepared and submitted for works from the Tollamore road to Tealanellyfaund at the foot of the Dorenal Pass, being part of the Line from Tullamore to Enniskillen.

No 1 at 3.

on 1 Aug.t 0014